DOUGLAS COUNTY
COLORADO

Memorandum

DATE: APRIL 11, 2024

TO: DOUGLAS COUNTY PLANNING COMMISSION

FROM: LAUREN PULVER, PLANNING SUPERVISOR
KATI CARTER, AICP, ASSISTANT DIRECTOR OF PLANNING RESOURCES

SUBJECT: **TWIN MESA METROPOLITAN DISTRICT SERVICE PLAN – SUPPLEMENTAL INFORMATION**

PROJECT FILE: SV2023-003

OWNER:
DAMIAN COX
1288 SOUTH PEAK VIEW DRIVE
CASTLE ROCK, CO 80109

REPRESENTATIVE:
MICHAEL DAVIS
1161 EAGLE DRIVE, SUITE 366
LOVELAND, CO 80537

PLANNING COMMISSION MEETING: **APRIL 15, 2024 @ 6:00 PM**
BOARD OF COUNTY COMMISSIONERS HEARING: **MAY 21, 2024 @ 2:30 PM**

ADDITIONAL PROJECT BACKGROUND

A previous version of this project was presented to the Planning Commission (PC) on July 10, 2023. At that time, the PC recommended denial of the service plan by a vote of 5 to 1. It was not heard by the Board of County Commissioners.

At that time, the proposed District encompassed the same properties. The intent of the proposed District was to own and maintain all the roads within the two subdivisions because of a proposed road vacation of Peak View Drive, Mountain View Road, Twin Oaks Road, and Clarke's Circle and access roads off of these streets. The previous proposal also included Parks and Open Space powers.

The current version has been revised to include a road vacation for approximately 600 feet of Twin Oaks Road so that a Traffic Control Gate may be installed at that location. The service plan also identifies vacating a portion of Clarke's Circle for the installation of an emergency vehicle access gate. Additional changes since the project was last considered by the PC, include the removal of the Parks and Open Space power and the addition for the District to implement a fee on persons who are not "Authorized Users" to utilize the roadways.

Additionally, the previous proposal included an authorized debt limit of $500,000 to finance or lease equipment. The authority to levy mills for debt service has been removed from the current version. The current service plan authorizes a maximum mill levy of 10 mills to support operations and maintenance. The service plan proposes that the District will enter an Intergovernmental Agreement with the County for the maintenance and snow removal of the vacated portion of

road. The attached letter from Dan Roberts dated April 4, 2024 indicates that the County is agreeable to this.

Since the submission of the April 4, 2024 staff report, the applicant has submitted a revised version of the service plan. The revised version changes the term “toll” to “fee” and includes additional language related to the implementation of fees and establishes a limit to the cost for persons who are not “Authorized Users”.

Additionally, the revised service plan removes language from Section V. that references the County as requested by the Engineering Department. These revisions address any outstanding comments from the Engineering Department.

SUPPLEMENTAL MATERIALS

Attached is the following additional information the applicant has provided staff to be included in the record.

- Dawson Trails Traffic Study
- Jacobs Engineering Traffic Forecast Report
- Email from Lawrence Jacobson dated June 19, 2023

Staff has also attached additional correspondence received since submission of the April 4, 2024, staff report beginning on page 1037.

ATTACHMENTS

Service Plan submitted April 11, 2024……3
Redlined Service Plan (compared to April 4 staff report version)……49
Email from Douglas County Engineering Department dated April 11, 2024……95
Dawson Trails Traffic Study……96
Jacobs Engineering Traffic Forecast Report……1001
Email from Lawrence Jacobson dated June 19, 2023……1032
Letter from Dan Roberts, dated April 4, 2024……1033
Applicant Correspondence……1034
Public Comments……1035
Tuscan Farms letter with attachments dated April 10, 2024……1208

SERVICE PLAN

FOR

TWIN MESA METROPOLITAN DISTRICT

DOUGLAS COUNTY, COLORADO

Prepared

By

Law Office of Michael E. Davis, LLC
1151 Eagle Drive, Suite 366
Loveland, Colorado 80537

Submission Date: April 11, 2024

APPROVAL DATE: _____

Twin Mesa Metropolitan District

APPROVAL SUMMARY

This Service Plan for Twin Mesa Metropolitan District (the "District") was approved by the Douglas County Board of County Commissioners on (date). Resolution No. _____, approving this Service Plan, has been recorded at Reception No. _____ on (date). The organizational and TABOR elections took place on (date). The court decree organizing the District was recorded with the Douglas County Clerk and Recorder on (date) at Reception No. _____.

Twin Mesa Metropolitan District

PETITIONERS AND CONSULTANTS

This Service Plan has been prepared by the representatives of the Petitioners and the following participating consultants:

Petitioners Representative Name: Damian Cox Address: 1288 S. Peak View Drive City, State Zip: Castle Rock, CO 80109 Phone: (720) 933-3648 Fax: (303) 688-1386 Email: damian@coxrelaw.com	District Counsel Company: Law Office of Michael E. Davis, LLC Attn: Michael Davis Address: 1151 Eagle Drive, Ste. 366 Loveland, CO 80537 Phone: (720) 324-3130 Email: michael@mdavislawoffice.com
Petitioners Representative Name: Dan Clemens Address: 1066 Clarke Ct. City, State Zip: Castle Rock, CO 80109 Phone: (303) 378-0642 Email: dan@quietpath.com	Petitioners Representative Name: Denny Ingram Address: 1268 Clarkes Circle City, State Zip: Castle Rock, CO 80109 Phone: (303) 570-7061 Email: dennying58@gmail.com
Petitioners Representative Name: Rick Stucy Address: 1426 Castle Mesa Drive City, State Zip: Castle Rock, CO 80109 Phone: (303) 378-1592 Email: rick@trailstardev.com	Petitioners Representative Name: Matt Thomson Address: 1446 O'Brien Way City, State Zip: Castle Rock, CO 80109 Phone: (303) 578-6260 Email: thomsonhomes@gmail.com

[ADDITIONAL CONSULTANTS MAY BE ADDED AT THE DISCRETION OF THE PETITIONERS.]

EXECUTIVE SUMMARY

This service plan is for Twin Mesa Metropolitan District (the "District"), which will serve certain public roadway improvement and traffic safety needs for most of the Twin Oaks subdivision, the Castle Mesa South, Castle Mesa West subdivisions, most of the Castle Mesa subdivision along with four other properties. This District is generally located at Wolfensberger Rd. and S. Peak View Drive to Twin Oaks Rd and Territorial Rd and contains approximately 1,632.26 acres. The District is anticipated to include 120 residential units and no commercial space.

The District will have a single district structure. This structure will allow the District to control services.

The District shall be authorized to provide the following services pursuant to C.R.S. § 32-1-103(10): street improvements and traffic safety protection and other services as described in C.R.S. §§ 32-1-1001 and 1004, as amended, as more fully described in Section IX below. The District shall not have the authority to issue general obligation debt.

The primary purpose of the District is to provide safety protection services by erecting, operating and maintaining traffic and safety controls and devices on roadways within the District pursuant to C.R.S. § 32-1-1004(1)(b). The District does not intend to finance the construction of the public improvements. The total authorized debt limit for the District shall be Zero Dollars ($0.00), and the Maximum Debt Service Mill Levy shall be zero (0.000) mills. The Maximum Operations and Maintenance Mill Levy shall be ten (10.000) mills, subject to adjustment to account for legislative or constitutional changes as described herein.

The Petitioners will submit an application and request that the County vacate approximately 600 feet of Twin Oaks Road and appurtenant rights of way to and for the benefit of the District for the purpose of locating the Traffic Control Gate, along with a portion of Clarke's Circle for the purpose of maintaining an emergency access gate. It is anticipated that the County will consider that application and request in accordance with the County's standard procedures for vacating property. The District will then fund the design and construction of the Traffic Control Gate, and the operation and maintenance of both the Traffic Control Gate and the emergency gate. Notwithstanding the foregoing, if construction of the bridge for the Crystal Valley Interchange has not commenced or the emergency gate on Clarke's Circle has not been approved to be installed by the County as of December 31, 2030, the District will be dissolved in accordance with Section XVI of this Service Plan (in which case the District will dismantle the Traffic Control Gate and convey roadway property then owned by the District to the County prior to the District's dissolution).

In the absence of Intergovernmental Agreements to the contrary, neither the County nor the Town of Castle Rock will have any maintenance responsibilities related to the Traffic Control Gate or the vacated portion of the County roads.

Table of Contents

I. EXHIBITS 1
II. INTRODUCTION 2
III. PURPOSE OF THE DISTRICT 3
IV. DISTRICT FRAMEWORK 3
V. NEED FOR DISTRICT 3
VI. LOCATION AND BOUNDARIES 4
VII. ASSESSED VALUATION/PROJECTIONS/LAND USE/POPULATION 4
VIII. POWERS AND RESPONSIBILITIES 5
A. General Powers 5
B. Miscellaneous Powers 5
IX. DISTRICT SERVICES, FACILITIES, AND IMPROVEMENTS 5
A. Services and Facilities 5
1. Street Improvements 5
2. Traffic Safety Protection 5
B. Estimated Costs and Phasing of Improvements 6
C. Compliance with Section 18A, Water Supply – Overlay District, of the Douglas County Zoning Resolution, as amended 7
D. Compliance with DRCOG Clean Water Plan 7
X. EXISTING AND PROPOSED AGREEMENTS 7
XI. FINANCIAL INFORMATION 8
A. General 8
B. Assumptions 8
C. Identification of District Revenue 8
D. Debt Service Mill Levy 8
E. Operations and Maintenance Mill Levy 8
F. District Expenditures 9
G. Debt 9
XII. ADVANCES AND REIMBURSEMENTS 9
XIII. ANNUAL REPORT 9
XIV. MODIFICATION OF SERVICE PLAN 9
XV. DISCLOSURE STATEMENT 10

Twin Mesa Metropolitan District

XVI. DISSOLUTION 10
XVII. DEFINITIONS 10
XVIII. RESOLUTION OF APPROVAL 12
XIX. STATUTORY FINDINGS AND CONCLUSIONS 12

I. EXHIBITS

Exhibits A through **L**, attached hereto are incorporated into this Service Plan

Exhibit A	Vicinity Map
Exhibit B	Legal Description
Exhibit C	District Boundary Map
Exhibit D	Cost of Improvements
Exhibit E	Map of Improvements
Exhibit F	Example Operating Budget
Exhibit G	Resolution of Approval
Exhibit H	Compliance with Section 18A, Water Supply
Exhibit I	Compliance with Colorado Department of Public Health and Environment Requirements
Exhibit J	Advance and Reimbursement Agreement
Exhibit K	District Court Decree

II. INTRODUCTION

This service plan (the "Service Plan") for the Twin Mesa Metropolitan District (the "District") is for a special district organized under Title 32 of the Colorado Revised Statutes to serve certain public improvement needs, as described herein, of most of the Twin Oaks subdivision, the Castle Mesa South and Castle Mesa West subdivisions, most of the Castle Mesa subdivision along with four other properties. This District is generally located at Wolfensberger Rd. and S. Peak View Drive to Twin Oaks Rd and Territorial Rd (see **Exhibit A**, Vicinity Map) and contains approximately 1,632.26 acres (see **Exhibits B & C**, Legal Description and District Boundary Map).

Pursuant to the requirements of the Special District Control Act, C.R.S. §32-1-201, *et seq.*, as amended, and the Special District Service Plan Review Procedures for Douglas County (the "County"), the following items are included in this Service Plan:

1. A description of the powers granted to and services to be provided by the District;
2. A general description of the facilities to be constructed and the standards of such construction, including a statement of how the facility and service standards of the District are compatible with facility and service standards of the County and of any municipalities and special districts which are interested parties;
3. A general written description of the estimated cost of acquiring land, engineering services, legal services, administrative services, initial indebtedness and estimated maximum interest rates and discounts, and other major expenses related to the organization and initial operation of the District;
4. A summary of general conditions regarding oversight of the District by the County;
5. A legal description and map of the District's boundaries and an estimate of the population and valuation for assessment of the District;
6. A summary of estimated costs for improvements to be financed and constructed by the District;
7. A preliminary engineering and architectural survey showing how the improvements and services are to be provided;
8. An Example Operating Budget showing how District improvements and services are to be financed, including the operating revenue for the first three budget years of the District;
9. The resolution of approval adopted by the Board of County Commissioners;
10. Information demonstrating compliance with Section 18A, Water Supply – Overlay District, of the Douglas County Zoning Resolution, as amended, and compliance with the Denver Regional Council of Governments' Clean Water Plan;
11. A description of any advance and reimbursement agreements;
12. A description of any arrangement or agreement with any political subdivision for the performance of any services between the District and such other political subdivision; and
13. The recorded court decree organizing the District.

III. PURPOSE OF THE DISTRICT

The purpose of the District is to operate and maintain certain public roadway and traffic safety improvements and services for the benefit of all current and anticipated inhabitants and taxpayers of the District. The District will also oversee and pay for, but not finance, the installation of certain traffic safety controls and devices from time to time, and provide for ongoing operations and maintenance services for such public improvements.

IV. DISTRICT FRAMEWORK

The District will be organized under a single district structure and will be responsible for all aspects of services authorized under this Service Plan.

V. NEED FOR DISTRICT

The District is a rural neighborhood consisting of approximately four subdivisions and four other properties of acreage/agricultural properties that were approved in the late 1960s to early 1970s. The four subdivisions are currently serviced by dedicated County roads. The Town of Castle Rock, the Colorado Department of Transportation and the County have approved an interchange at I-25 and Crystal Valley Parkway which includes construction of a bridge over I-25, north and southbound on- and off-ramps, a bridge over the BNSF railroad tracks, and connection to the east I-25 frontage road and the relocated west I-25 frontage road ("Crystal Valley Interchange"). Additionally, the Town of Castle Rock has approved the Dawson Trails project; approximately 2,064 acres of high-density, mixed-use development located near the Crystal Valley Interchange consisting of approximately 5,850 dwellings and 3.2 million square feet of commercial space. The Crystal Valley Interchange and Dawson Trails will create a substantial amount of traffic and population growth directly adjacent to the District Boundaries. This increased volume of traffic has a high probability of materially changing the current rural residential local roads within the District Boundaries into heavily travelled urban collector roads used to feed traffic to and from the Dawson Trails development and the arterial roads adjacent to I-25.

It is generally believed by the Dawson Trails developer, the Town of Castle Rock and the County, that Clarke's Circle will need to be blocked with an emergency gate in order to prevent direct local road access so close to the proposed Crystal Valley Interchange. Upon vacation of the portion of Clarke's Circle with the emergency access only gate by the Board of County Commissioners to the District, the District will maintain the emergency access gate and that portion of Clarke's Circle.

It is also generally believed that the Dawson Trails development and Crystal Valley Interchange will cause additional cut-through traffic on the roads in Twin Oaks and Castle Mesa. Therefore, there is an existing need for the District to erect traffic and safety controls on the local roadways within the District to create traffic patterns that can be sustained by the County as the population and vehicular traffic in the vicinity increase as projected. The traffic and safety controls will be comprised primarily of a motorized gate to limit non-resident traffic beyond a designated location, an emergency gate installed by the County on Clarke's Circle, and signage to direct non-residents to designated collector and arterial roads. The District is being created to construct and maintain the safety controls and devices that will limit traffic flow to sustainable levels according to applicable

standards, while also preserving the existing rural character for the local residents residing within the District Boundaries.

VI. LOCATION AND BOUNDARIES

This District is generally located at Wolfensberger Rd. and S. Peak View Drive to Twin Oaks Rd and Territorial Rd. A vicinity map is attached hereto as **Exhibit A**. The area of the initial District's boundary encompasses approximately 1,632.26 acres. A legal description of the District's boundaries is attached hereto as **Exhibit B**. A map of the District's boundaries is attached hereto as **Exhibit C**.

It is anticipated that the District will include 100% of the property described in **Exhibit B** and **Exhibit C** within its' boundaries at the time of its formation. Prior to any inclusion or exclusion of any property pursuant to C.R.S. §§ 32-1-401, et seq., and C.R.S. §§ 32-1-501, et seq., as amended that is not identified in **Exhibits B** and **C**, the District shall provide forty-five (45) days published notice and written notice to the Board of County Commissioners pursuant to C.R.S. § 32-1-207(3)(b). If, within such forty-five (45) day period, the Board of County Commissioners objects to the inclusion or exclusion, then the inclusion or exclusion shall be prohibited and constitute a material modification of this Service Plan requiring an amendment, pursuant to Section XIV of the Service Plan and C.R.S. § 32-1-207(2).

VII. ASSESSED VALUATION/PROJECTIONS/LAND USE/POPULATION

As of January 4, 2024, the property within the District is zoned Agricultural One, Rural Residential, Estate Residential and Large Rural Residential. The current assessed value of property within the boundaries of the District as of January 4, 2024 is nine million nine hundred eighty-four thousand one hundred seventy dollars ($9,984,170.00). The property within the District Boundaries is approximately 92.5% built-out so the assessed valuation is not expected to change materially except as a result of normal market conditions. The assessed valuation is expected to be sufficient for the District to operate and maintain the planned traffic controls and appurtenant property and improvements, and pay for necessary capital improvements without the need to issue Debt. The District currently includes one hundred twenty (120) residential lots and Zero square feet of commercial space. Based upon an estimated four (4.00) persons per residence, the maximum population of the District is estimated to be four hundred eighty (480) residents.

Approval of this Service Plan by the County does not constitute nor imply approval of the development of a specific area within the District, nor does it constitute or imply approval of the number of residential units or the total site/floor area of commercial or industrial buildings identified in this Service Plan or any of the exhibits attached hereto, unless such land use plans have been approved by the Board of County Commissioners as part of a separate development review process.

VIII. POWERS AND RESPONSIBILITIES

The District has the power and authority to provide the public improvements and related operation and maintenance services within the boundaries of the District as such power and authority is permitted by this Service Plan and described in the Special District Act, C.R.S. Title 32, and other applicable statutes, common law, and the Colorado Constitution, subject to the limitations set forth herein.

A. General Powers

The District shall have the authority to construct, operate, and maintain the services and facilities as described in Section IX.A of this Service Plan.

B. Miscellaneous Powers

In addition to the powers enumerated above, the District's Board shall have the power and authority:

1. To amend this Service Plan as provided for in Section XIV, Modification of Service Plan;

2. To have and exercise all rights and powers necessary or incidental to, or implied from, the specific powers granted to the District in this Service Plan.

Without limiting the foregoing, the District shall not have the authority to exercise the power of eminent domain.

IX. DISTRICT SERVICES, FACILITIES, AND IMPROVEMENTS

A. Services and Facilities

The District shall have the authority pursuant to C.R.S. §§ 32-1-1001 and 32-1-1004, as amended, to provide the following services and public improvements described in this section.

1. Street Improvements

The District has the power and authority to maintain certain streets and roadway improvements and right of ways within the District which have been vacated by the County, including, but not limited to, culverts and drainage facilities, retaining walls and appurtenances, lighting, grading, landscaping, streetscaping, placement of underground utilities, snow removal, and other street improvements, and architectural enhancements to any or all of the above, with all necessary and incidental and appurtenant facilities, land and easements, together with extensions and improvements thereto.

2. Traffic Safety Protection

The District has the power and authority to fund, design, construct, acquire, install, maintain, and provide for safety protection through traffic control devices and safety controls on streets, as well as such other facilities and improvements as are necessary or prudent, including, but not limited to, a motorized gate to be erected across a portion of roadway vacated by the County (the "Traffic Control Gate"), an emergency vehicle gate planned for installation by the County on Clarke's Circle, traffic signs, area identification signs, directional assistance and driver information signs, and turnarounds, with all necessary and incidental and appurtenant facilities, and land and

easements, together with extensions and improvements thereto. All traffic and safety control devices will be consistent with and in compliance with County rules and regulations and any other appropriate local jurisdiction regarding public right of ways.

The procedures and methods for operating and maintaining the Traffic Control Gate and the emergency vehicle gate will be determined by the District's board of directors after formation of the District. Pursuant to this Service Plan, however, the District's board of directors will ensure that the Traffic Control Gate is Opticom controlled with Knox key backup, and that passcodes, QR codes, RFI readers or other access credentials provide 24/7 access through the Traffic Control Gate for all authorized users, including without limitation the residents of the District, utility providers (including without limitation CORE Electric Cooperative and Public Service Company of Colorado), school districts, emergency service providers (including without limitation Castle Rock Fire & Rescue), law enforcement (including without limitation the County Sheriff's Office), all County services and County service providers, and other service providers such as trash collection and deliveries (collectively, "Authorized Users"). For the purpose of maintaining traffic control, the District does not intend to allow non-resident use of or access through the Traffic Control Gate. However, if non-resident use is required, or if the Board of Directors of the District determines that traffic can be controlled to manageable levels while permitting a limited number of non-resident users to use the Traffic Control Gate, the District shall charge such non-resident users an annual fee that is no less than the highest ad valorem property taxes paid to the District by any resident on an annual basis. In no event shall the District charge any fees to any Authorized User for use of the Traffic Control Gate.

B. Estimated Costs and Phasing of Improvements

An estimate of the costs of Traffic Control Gate , which may be planned for, designed, acquired, constructed, installed and maintained by the District was prepared based upon a preliminary proposal by Rocky Mountain Access Controls, Inc. and is approximately $42,394 as shown in **Exhibit D** (proposal for the installation of the Traffic Control Gate with two motorized swing gate operators). All descriptions of the Traffic Control Gate to be constructed, and its related costs, are estimates only and are subject to modification as engineering, development plans, economics, the County's requirements, and construction scheduling may require. The District will continue to develop and refine cost estimates contained herein. The District will not issue debt to finance the construction and installation of the Traffic Control Gate. All construction cost estimates assume construction to applicable local, State, or Federal requirements.

The specific location of the Traffic Control Gate is contingent upon the County's approval of the District's road vacation application. **Exhibit E** shows the proposed Traffic Control Gate. Phasing of construction shall be determined by the District to meet the needs of taxpayers within its boundaries. The District shall own, maintain, and replace public improvements constructed, installed, or acquired by the District. Without limiting the foregoing, the District will operate and maintain the Traffic Control Gate, and such operations and maintenance will include but not be limited to roadway, curb, gutter, signage, monumentation and other appurtenances that have been conveyed to the District, as necessary, based on the final design and construction of such improvements. Neither the County nor the Town of Castle Rock shall be responsible for any

construction, operation or maintenance costs of the Traffic Control Gate or any improvements appurtenant to the Traffic Control Gate that have been conveyed to the District.

In all instances, the District shall ensure that the public improvements are designed and constructed in accordance with the standards and specifications of the County or other such entity that may have authority over such design and construction. The District will obtain all necessary permits and approvals for the installation of the Traffic Control Gate, including without limitation any permits required by Douglas County's Building Division.

C. Compliance with Section 18A, Water Supply – Overlay District, of the Douglas County Zoning Resolution, as amended

The District does not require water service from any water provider nor is any water supply plan required for the District, pursuant to Section 18A, Water Supply – Overlay District, of the Douglas County Zoning Resolution, as amended. (Refer to Exhibit H.) The District will not provide any water services and neither owns nor controls any water rights. The existence, operation and maintenance of the District will have no demand for water, and the District does not require any commitment from any person to provide water.

D. Compliance with DRCOG Clean Water Plan

The Regional Clean Water Plan is not applicable to Twin Mesa Metropolitan District and therefore neither DRCOG nor any other wastewater treatment provider is required to issue a compliance letter in connection therewith. (Refer to Exhibit I.)

X. EXISTING AND PROPOSED AGREEMENTS

After approval of this Service Plan by the County, the applicants will move forward with their application requesting the County to vacate portions of the County road(s) within the District to and for the benefit of the District for the purpose of locating the Traffic Control Gate and an emergency vehicle gate to be constructed by the County on Clarke's Circle. It is anticipated that the County will consider such application(s) and request in accordance with the County's standard procedures for vacating property. Notwithstanding the foregoing, if construction of the bridge for the Crystal Valley Interchange has not commenced or the emergency gate on Clarke's Circle has not been approved to be installed by the County as of December 31, 2030, the District will be dissolved in accordance with Section XVI of this Service Plan (in which case the District will dismantle the Traffic Control Gate and convey roadway property then owned by the District to the County prior to the District's dissolution).

Neither the County nor the Town of Castle Rock will have any maintenance responsibilities related to the Traffic Control Gate or the vacated portion of the County roads unless either enters into an Intergovernmental Agreement with the District.

XI. FINANCIAL INFORMATION

A. General

This section describes the nature, basis, and method of funding and mill levy limitations associated with the District's public improvements. An example operating budget (the "Operating Budget") and statement of assumptions is contained in **Exhibit F**.

B. Assumptions

The revenue estimate contained herein is based on the assumption that each of the 120 residential properties in the District has an average assessed valuation of approximately eighty three thousand dollars ($83,000.00). The Operating Budget demonstrates that the District has the ability to pay for the operations and maintenance of the public improvements identified herein and will operate on a sound fiscal basis.

C. Identification of District Revenue

The District will impose a mill levy on taxable property within its boundaries as a primary source of revenue for repayment of developer advances and operations and maintenance. The District may also rely upon various other revenue sources authorized by law. At the District's discretion, additional revenue sources may include fees, rates, penalties, or other charges in accordance with C.R.S. § 32-1-1001(1), as amended. If non-resident use of the Traffic Control Gate is required or permitted, the District may impose a fee for such use as described in Section IX.A(2) for the purpose of traffic control. It is not anticipated that the revenue from such fees, if any, would have a material impact on the District's budgeted revenue.

A Maximum Total Mill Levy of 10.00 mills is authorized to support operations and maintenance of the District. The District estimates that during the first five years of operation a total combined mill levy of approximately 7.500 mills will produce revenue sufficient to support the operations and maintenance needs of the District as well as the District's repayment of developer advances (see **Exhibit F**, Operating Budget). After the fifth year, it is anticipated that the mill levy will be reduced to 4.750 mills.

If there are changes in the method of calculating assessed valuation or any legislative or constitutionally mandated tax credit, cut, or abatement, the Maximum Total Mill Levy may be increased or decreased to reflect such changes, such increases or decreases to be determined by the Board in good faith so that to the extent possible, the actual tax revenue generated by such mill levy are neither diminished nor enhanced as a result of such changes. For purposes of the foregoing, a change in the ratio of actual valuation to assessed valuation shall be deemed to be a change in the method of calculating assessed valuation.

D. Debt Service Mill Levy

The District shall not impose a mill levy for the purpose of servicing Debt.

E. Operations and Maintenance Mill Levy

A maximum mill levy of 10.000 mills is authorized to support the operations and maintenance of District services and public improvements. It is anticipated that an initial operations and maintenance mill levy of 7.500 mills will produce revenue sufficient to support the operations and maintenance of District service and public improvements (see **Exhibit F**, Operating Budget).

F. District Expenditures

The estimated cost of public improvements for the District is $80,000.00. **Exhibit D** includes, in current dollars, the estimate cost to install the Traffic Control Gate.

The District will require operating funds to plan and cause the public improvements contemplated herein to be constructed, operated, and maintained as permitted herein. Such costs are expected to include reimbursement of organizational costs, legal, engineering, accounting, and compliance with State budgeting, audit, and reporting, and other administrative and legal requirements. The organizational costs for the District for legal, engineering, surveying, and accounting services are estimated to be forty thousand dollars ($40,000.00). The first year's operating budget is estimated to be approximately one hundred seventy-seven thousand dollars ($177,000.00). However, the following fiscal year is estimated to be approximately seventy-eight thousand dollars ($78,000.00). See **Exhibit F**.

G. Debt

The District is not authorized to issue Debt.

XII. ADVANCES AND REIMBURSEMENTS

The District anticipates receiving initial funding for both capital and ongoing administrative requirements from advances. Such advances may be made to the District subject to the District's obligation to reimburse the same, with or without interest, as may be evidenced by short-term reimbursement agreements or other acceptable agreements or resolutions. The interest rate, if any, on reimbursements shall not exceed the current Bond Buyer 20-Bond GO Index plus four percent (4%) and interest shall not compound. The repayment of any such advances shall be subject to annual appropriation by the Board and may be repaid by the District only from legally available sources of revenue. Any amount of outstanding principal and accrued interest on such advances that remains unpaid after five years of such advance shall be deemed to be forever discharged and satisfied in full. The total advances are anticipated to be one hundred thousand dollars ($100,000.00).

XIII. ANNUAL REPORT

The District shall be responsible for submitting an annual report to the County in accordance with the procedures set forth in C.R.S. § 32-1-207(3)(c)(I), as amended. The annual report must conform to the format and include the content set forth in C.R.S. § 32-1-207(3)(c)(II).

XIV. MODIFICATION OF SERVICE PLAN

Pursuant to C.R.S. § 32-1-207, as amended, the District shall obtain prior written approval of the County before making any material modification to this Service Plan. Material modifications require a Service Plan amendment and include modifications of a basic or essential nature, including, but not limited to, the following: any addition to the types of services provided by the District; a decrease in the level of services; a decrease in the financial ability of the District to discharge the existing or proposed indebtedness; or a decrease in the existing or projected need for

organized service in the area. Inclusion of property that is located in a county or municipality with no other territory within the District may constitute a material modification of the Service Plan.

In the event the District plans to undertake an action which may not be permitted by this Service Plan, it shall be the District's responsibility to contact County staff to seek an administrative determination as to whether the action in question is permitted by the Service Plan. If County staff determines that the action may constitute a material modification, the District shall submit a proposal for action to the Board of County Commissioners. Thereafter, the Board of County Commissioners will determine whether the proposed action constitutes a material modification. If the Board of County Commissioners determines that the proposed action constitutes a material modification, then the action shall be prohibited and constitute a material modification of this Service Plan requiring an amendment, pursuant to C.R.S. § 32-1-207(2).

Any material modification of this Service Plan approved by the County is not effective until it is ratified by a vote of the registered electors of the District by way of a special election. If such modification is not so approved, then the modification is void.

XV. DISCLOSURE STATEMENT

The District will provide notice to all purchasers of property in the District regarding the District's authority to levy and collect *ad valorem* taxes and to impose and collect rates, fees, and other charges, by recording a disclosure statement against the property within the District with the Office of the Douglas County Clerk and Recorder. Such disclosure statement must also provide information concerning the structure of the Board and summarize how purchasers may participate in the affairs of the Board. The disclosure statement must be recorded within thirty (30) days following the recordation of the court decree organizing the District and such recording shall be deemed adequate notice to purchasers of property as described herein.

XVI. DISSOLUTION

It is mandatory for the District to initiate dissolution proceedings when the District has neither any financial obligations nor operations and maintenance obligations, or if the District is required to remove the Traffic Control Gate. In such case, the District may file a petition in the district court for dissolution when there are no financial obligations, or any such financial obligations are adequately secured by escrow funds or securities meeting the investment requirements in C.R.S. §§ 24-75-601, *et seq.,* as amended. The District's dissolution is subject to approval of a plan of dissolution in the district court of the County, pursuant to C.R.S. § 32-1-704, as amended. Upon dissolution, all District roads and/or emergency access gate will be vacated to the County.

XVII. DEFINITIONS

In this Service Plan, the following terms shall have the meanings indicated below, unless the context hereof clearly requires otherwise:

Board: the board of directors of the District.

Board of County Commissioners: the Board of County Commissioners of Douglas County, Colorado.

Control Act: Part 2 of Title 32 (Special Districts) of the Colorado Revised Statutes (C.R.S.), which outlines review procedures for service plans for a special district.

County: Douglas County, Colorado.

Debt: any bond, note debenture, contract, or other multiple-year financial obligation of a District.

District: the Twin Mesa Metropolitan District.

District Boundaries: the boundaries of the area described in the legal description attached hereto as **Exhibit B.**

District Boundary Map: the map attached hereto as **Exhibit C**, showing the District's boundaries.

Operating Budget: the estimated operating budget described in Section XI and attached as **Exhibit F**, which describes: (a) how the public improvements are to be funded; (b) is the operating expenses expected to be incurred; and (c) the estimated operating revenue derived from property taxes for the first budget year.

Petitioners: the group of property owners within the boundaries of the District who have signed the petition to create the District.

Maximum Debt Service Mill Levy: the maximum mill levy the District is permitted to impose for payment of debt as set forth in Section XI.D.

Maximum Operations and Maintenance Mill Levy: the maximum mill levy the District is permitted to impose for the payment of operating and maintenance expenses as set forth in Section XI.E.

Maximum Total Mill Levy: the maximum mill levy the District is permitted to impose for the payment of debt as set forth in Section XI.D. and operating and maintenance expenses as set forth in Section XI.E.

Public Improvements: the improvements authorized to be planned, designed, acquired, constructed, installed, relocated, redeveloped, and financed as generally described in the Special District Act to serve the future taxpayers and inhabitants of the District as determined by the Board of the District.

Service Plan: the service plan for the District approved by the Board of County Commissioners.

Special District Act: C.R.S. § 32-1-101, *et seq.*, as amended.

State: the State of Colorado.

Traffic Control Gate: the motorized gate to be erected across the portion of Twin Oaks Road vacated by the County.

XVIII. RESOLUTION OF APPROVAL

The District incorporates the Board of County Commissioner's resolution approving this Service Plan into this Service Plan to be presented to the district court attached hereto as **Exhibit G**.

XIX. STATUTORY FINDINGS AND CONCLUSIONS

It is submitted that this Service Plan for the District, as required by C.R.S. § 32-1-203, as amended, establishes that:

1. There is sufficient existing and projected need for organized service in the area to be served by the District;

   There is an existing, present need to erect safety controls on the local roadways within the District to create traffic patterns that can be sustained by the County as the population and vehicular traffic in the vicinity increase as projected. The safety controls will be comprised primarily of a motorized gate to limit non-District resident traffic beyond a County-designated location, and signage to direct non-District residents to designated collector and arterial roads. The District is being created to construct and maintain the safety controls and devices that will assist the County in limiting traffic flow to sustainable levels, while also preserving the existing rural character for the local residents residing within the District Boundaries.

2. The existing service in the area to be served by the District is inadequate for present and projected needs;

   The existing unpaved roads within the District Boundaries were designed and are maintained as residential gravel roads, not collector streets suitable for the high density residential and commercial property currently being developed adjacent to the District Boundaries. The traffic safety controls proposed by the District will reduce traffic congestion and safety concerns by diverting traffic flows to County and Town of Castle Rock collector and arterial roads that are designed and maintained to safely carry higher volumes of traffic.

3. The District is capable of providing economical and sufficient service to the area within its boundaries;

The Example Operating Budget in the Service Plan demonstrates that the District is capable of economically and sufficiently providing the proposed services.

4. The area to be included in the District has, or will have, the financial ability to discharge the indebtedness on a reasonable basis;

   The District will not issue Debt to pay for any of the public improvements.

5. Adequate service is not, or will not be, available to the area through the County or other existing municipal or quasi-municipal corporations, including existing special districts, within a reasonable time and on a comparable basis;

   The County does not anticipate being able to provide any additional traffic safety and controls within the boundaries of the District, and existing controls are not adequate in light of current development in the vicinity and the anticipated increase in traffic.

6. The facility and service standards of the District are compatible with the facility and service standards of each county within which the District is to be located and each municipality which is an interested party under C.R.S. § 32-1-204(1), as amended;

   The traffic safety controls will be maintained by the District to County standards.

7. The proposal is in substantial compliance with the Douglas County Comprehensive Master Plan, as amended, adopted pursuant to C.R.S. § 30-28-106, as amended;

   Because the property within the District is essentially fully built-out, the proposed District has no impact on the Douglas County Comprehensive Master Plan.

8. The proposal is in compliance with the regional Clean Water Plan, as amended; and

   The District has no impact on the Clean Water Plan.

9. The creation of the District will be in the best interests of the area to be served.

   The creation of the District is in the best interests of the property owners and tax payers within the District Boundaries and will result in improved traffic and safety controls not otherwise provided by the County .

Exhibit A
Vicinity Map

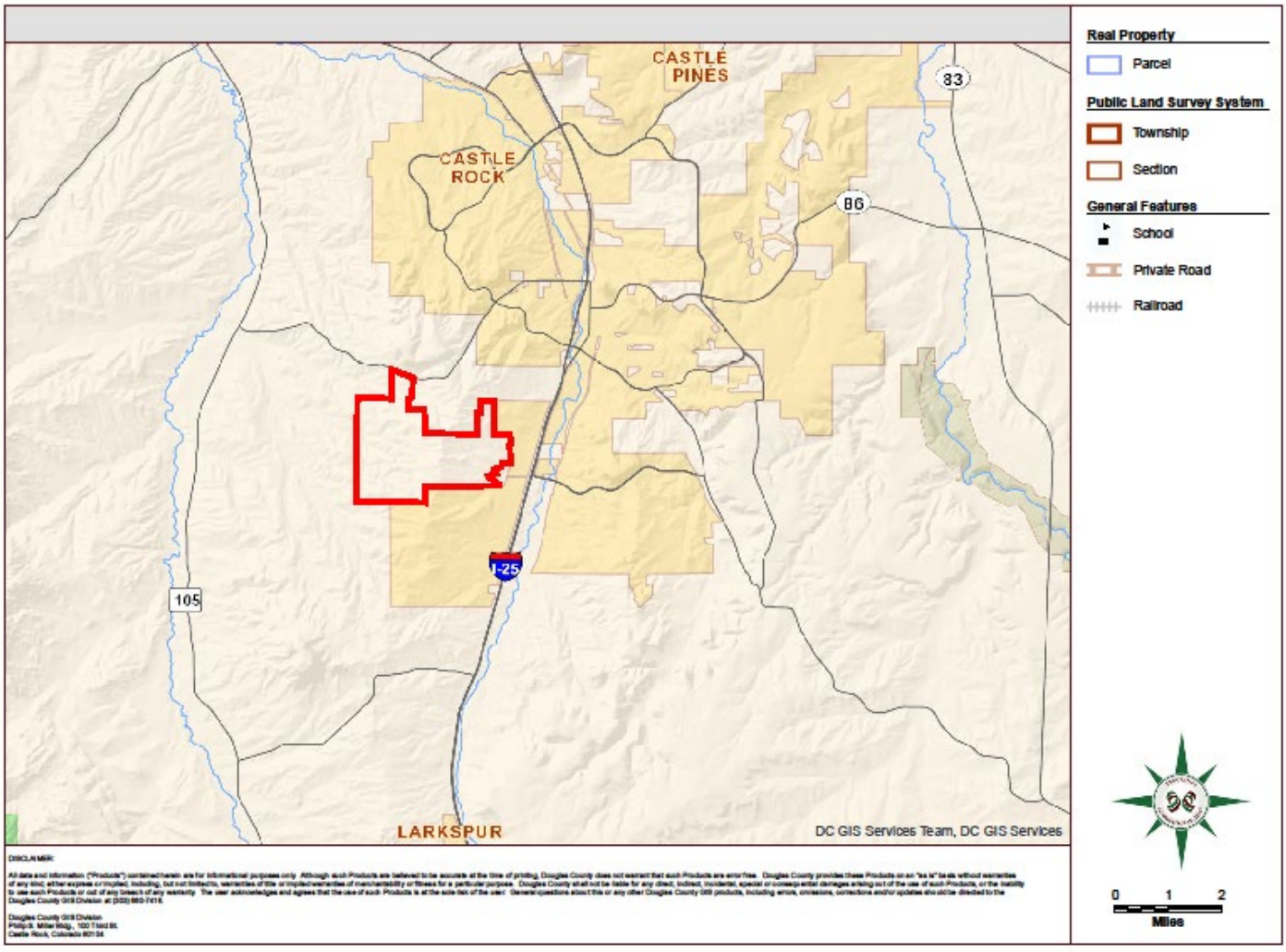


Exhibit B
Legal Description

The District consists of the following legally described parcels:

1. TWIN OAKS SUBDIVISION – As shown on the Castle Mesa South Subdivision Plat recorded June 21, 1973 at reception #161972:

Part of sections 21 and 22, township 8 south, range 67 west of the sixth principal meridian, county of Douglas, state of Colorado being more particularly described as follows:

commencing at the northwest corner of said section 21 being the true point of beginning; thence north 89°54'23" east along the north line of the northwest one-quarter of said section 21 a distance of 2628.85 feet to the north one-quarter corner of said section 21; thence south 89°27'04" east along the north line of the northeast one-quarter of said section 21 a distance of 2628.34 feet to the northeast corner of said section 21; thence south 89°09'11" east along the north line of the northwest one-quarter of said section 22 a distance of 2635.82 feet to the north one-quarter corner of said section 22;thence south 00°03'00" west along the north – south centerline of said section 22 a distance of 1330.11 feet to the southeast corner of the north one-half of the northwest one-quarter of said section 22; thence north 89°07'05" west along the south line of the north one-half of the northwest one-quarter a distance of 1316.36 feet to the northeast corner of the southwest one-quarter of the northwest one-quarter of said section 22; thence south 00°01'04" east along the east line of the southwest one-quarter of the northwest one-quarter a distance of 1329.32 feet to the southeast corner of the southwest one-quarter of the northwest one-quarter of said section 22; thence north 89°04'58" west along the south line of the southwest one-quarter of said section 22 a distance 65.07 feet to a point on the centerline of territorial road which is recorded in Book 1 at page 5 of the Douglas County records; thence south 17°39'12" west along the centerline of said road a distance of 1390.06 feet to a point on the south line of the northwest one-quarter of the southwest one-quarter of said section 22; thence north 89°05'55" west along said south line a distance of 826.17 feet to the southwest corner of the northwest one-quarter of the southwest one-quarter of section 22; thence north 89°33'14" west along the south line of the north one-half of the southeast one-quarter a distance of 2643.14 feet to a point on the north-south centerline of said section 21; thence continuing north 89°33'14" west along the south line of the north one-half of the southwest one-quarter of said section 21 a distance of 2643.27 feet to the southwest corner of the north one-half of the southwest one-quarter of said section 21; thence north 00°20'09" east along the west line of the southwest one-quarter of said section 21 a distance of 1322.83 feet to the west of one-quarter corner of said section 21; thence north 00°20'09" east along the west line of the northwest one-quarter of said section 21 a distance of 2645.65 feet to the true point of beginning.

Excluding:

a) Lot 3, Twin Oaks Plat recorded June 21, 1973 at reception #161972, County of Douglas, State of Colorado

b) Lot 4, Twin Oaks Plat recorded June 21, 1973 at reception #161972, County of Douglas, State of Colorado

c) Lot 59, Twin Oaks Amended Replat recorded January 28th, 1980 at reception #2489215, County of Douglas, State of Colorado

d) Lot 58, Twin Oaks Amended Replat recorded January 28th, 1980 at reception #2489215, County of Douglas, State of Colorado

e) Lot 60, Twin Oaks Amended Replat recorded January 28th, 1980 at reception #2489215, County of Douglas, State of Colorado

f) Tract C, Twin Oaks Plat recorded June 21, 1973 at reception #161972, County of Douglas, State of Colorado

g) That portion of Briscoe Lane vacated under Ordinance 86-24 at book 680, page 920 at reception #198625694

h) All of Clarkes Circle adjacent to the east side of Lot 58

i) All of Territorial Road

2. (SCHULL PARCELS) East ½ of the Southeast ¼ of Section 16, Township 8 South, Range 67 West of the 6th P.M., County of Douglas, State of Colorado.
Including:

a) Parcel 3, Quiet Oaks Rural Site Plan recorded November 18, 1998 at reception #9892467, County of Douglas, State of Colorado.

Excluding:

a) Parcel 1, Quiet Oaks Rural Site Plan recorded November 18, 1998 at reception #9892467, County of Douglas, State of Colorado.

3. CASTLE MESA SOUTH SUBDIVISION – As shown on the Castle Mesa South Subdivision Plat recorded September 24, 1997 at reception #145078:

Being the East one half of Section 20, Township 8 South, Range 67 West of the 6th Principal Meridian, including:

a) All of the Laton Exemption recorded at reception #2014076603
b) All of the Castle Mesa South 1st Amendment recorded at reception #9516208

4. CASTLE MESA WEST SUBDIVISION – As shown on the Castle Mesa West Subdivision Plat recorded November 15, 1972 at reception #155776:

Being the west one half of section 20, township 8 south, range 67 west of the 6th principal meridian, including: Castle Mesa West Replat of Lot 16 recorded at reception #1980250347

5. CASTLE MESA SUBDIVISION – As shown on the Castle Mesa Subdivision Plat recorded February 19, 1969 at reception #132468:

Part of Section 17, Township 8S, Range 67W of the 6th P.M., Douglas County, State of Colorado, more particularly described as follows:
Beginning at the SE corner of said Sec. 17, thence S88°07'E along the south boundary of said Sec. 17, 5392.32 ft to the S W corner of said Sec. 17, thence N 01°31'E along the west boundary of said Sec. 17, 2636.08 ft to the west ¼ corner of said Sec. 17, thence S 88 21 30 E along the east west centerline of said Sec 17, 4232.38 ft to a point, thence N 00°34'45"W- 1682.00 to a point on the southerly R.O.W. of County Road No. 214, Thence southeasterly along the southerly R.O.W. of County Road No. 214, 324.46 ft to a point on the east boundary of said Sec. 17, thence S 01°49'E along the East Boundary of said Sec. 17, 4202.78 ft, more or less to the point of beginning.
Excluding:

a) Lot 18, Castle Mesa Subdivision,
County of Douglas, State of Colorado

b) Lot 1, Castle Mesa Subdivision,
County of Douglas, State of Colorado

c) Lot 2, Castle Mesa Subdivision
County of Douglas, State of Colorado

6. (OSBORNE PARCEL) A tract of land located in the Northeast ¼ of Section 17, Township 8 South, Range 67 West of the 6th Principal Meridian, more particularly described as follows:

Beginning at a point on the West line of the Northeast ¼ and 1001.8 feet South of the North ¼ corner of Section 17;
Thence South along the West line of the Northeast ¼ 1585.7 feet to the Southwest corner of the Northeast 1/4 of Section 17;
Thence East along the South line of the Northeast 1/4 1605.86 feet to a point;
Thence North 552.9 feet to a point in the center line of South Peakview Drive;
Thence North 89º12' West 421.3 feet to a point;
Thence North 42º37'13" West 1456.16 feet to a point;
Thence North 89º45'30" West 193.4 feet more or less to the True Point of Beginning.

Except that part that lies within South Peakview Drive, and except that part described in the instrument recorded May 18, 1976 in Book 289 at Page 876, and except that part described in the instrument recorded February 2, 1998, in Book 1507 at Page 1188, County of Douglas, State of Colorado.

7. (POMARICO PARCEL) A tract of land located in the Northeast ¼ of Section 17, Township 8 South, Range 67 West of the 6th Principal Meridian, County of Douglas, State of Colorado, more particularly described as follows:

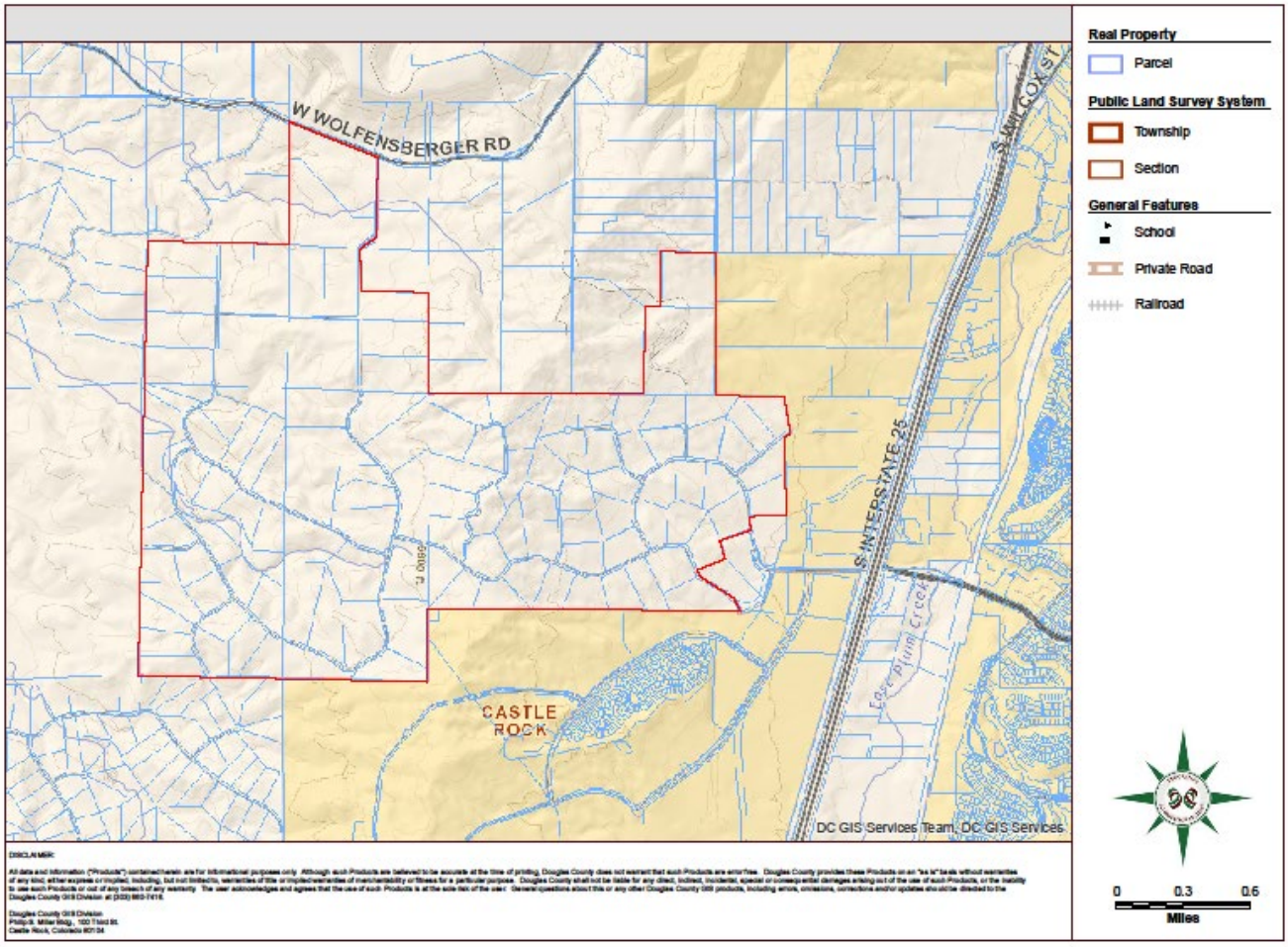
Beginning at a point on the South boundary of Wolfensberger Road, 340.6 feet South of the North ¼ corner of Section 8;
Thence South 69º16' East along Wolfensberger Road 1686.9 feet to a point on the West boundary of South Peakview Drive;

Thence South 0º21’ West along the West boundary of South Peakview Drive, 1140.2 feet to a point;
Thence North 89º12’West 391.3 feet to a point;
Thence North 42º37’13” West 1456.16 feet to a point;
Thence South 89º45’30” West 193.4 feet to a point on the West line of the Northwest ¼ of Section 8;
Thence North along the West line of the Northwest ¼ of Section 8 661.2 feet more or less to the point of beginning.

8) All of Peak View Drive lying within section 17, township 8 south, range 67 west of the 6th principal meridian.

Twin Mesa Metropolitan District
Exhibit B

Exhibit C
District Boundary Map



Twin Mesa Metropolitan District
Exhibit C

Exhibit D
Cost of Improvements

Rocky Mountain Access Controls, Inc.

303-339-6746
FAX: 303-339-6996

PROPOSAL

March 29, 2024 Estimate No: 14650

Ref: Twin Mesa Metro Dist.

We propose to supply and install two (2) ***swing gate operators*** on new swing gate leafs set up as entry/exit as follows:

Qty 2	Furnish and install two (2) 5' tall ornamental iron swing gates powder coated black hung on 6" steel posts that are set in concrete footers hung on heavy duty barrel hinges to fit a 24' opening (2-12'x5' tall leafs)
Qty 2	Furnish and install two (2) LiftMaster HDSW24UL heavy duty swing gate operators this includes a saw cut across the driveway for primary secondary operation
Qty 2	LiftMaster reinforced arm kits
Qty 2	Steel pedestals set in concrete to fit the footprint of the new operators
Qty 1	Photo cell mounted across the opening
Qty 2	Infinity RFID SC-1000W uhf readers to include mounting posts and brackets
Qty 200	Infinity RFID SS-UMT-002 windshield/headlight tags
Qty 1	CellGate Watchman WXL multi-tenant mounted on a gooseneck post that is powder coated black and set in concrete
Qty 3	Preformed trenched safety loops (1 inside safety, 1 outside safety and 1 shadow)
Qty 2	Loop detectors with adjustable sensitivity
Qty 2	Knox key switch
Qty 1	Labor to install the above listed system and end user training

Total Price (supply and install): $42,394.00 total

Description: Entry open activation is by CellGate Watchman and RFID reader. Exit open activation is by RFID reader. Entrapment protection is by photo cell mounted across the opening. Secondary entrapment protection is by safety loops. Emergency open activation is by Knox key switches.

Notes and Exclusions: Permits and performance bonds are excluded. All private locates are excluded. Proposal for installation is good for 30 days. Supply and install of all conduits and cabling between supply, gates and controls for electrical power and communication is excluded. Supply and install of all requisite earth ground components and surge suppression is excluded. Customer must supply power and conduit to the new operators. We are not responsible for anything under the ground when we are digging.

Warranty: Rocky Mountain Access Controls, Inc., and its sub-contractors warranties that the workmanship, techniques, and procedures used in its installations shall be of professional quality, in accordance with factory recommendations, and shall be free from defect for a period of one (1) year from date of substantial completion. This warranty to cover anchors, fasteners and other incidental supplies used to install product. Rocky Mountain Access Controls, Inc. shall administer manufacturer's warranties on products, equipment and associated controls sold by Rocky Mountain Access Controls, Inc. according to respective factory terms and conditions. Warranty excludes service, repair, or replacement of equipment, which is damaged, or operating improperly due to severe weather, other acts of nature, vandalism, abuse, or misuse.

Upon entering into an agreement, either a purchase order must be issued by the Customer, or a contract supplied by Rocky Mountain Access Controls, Inc. is signed and returned authorizing us to proceed with any work.
Rocky Mountain Access Controls, Inc.

Jamie

Jamie Langerman
www.rmacontrols.com
jlangerman@rmacontrols.com
Cell 720-355-6071

Twin Mesa Metropolitan District
Exhibit E

Exhibit E
Map of Improvements

The location of the Traffic Control Gate on Twin Oaks Road will be determined in accordance with the County's road vacation process (refer to Section X).

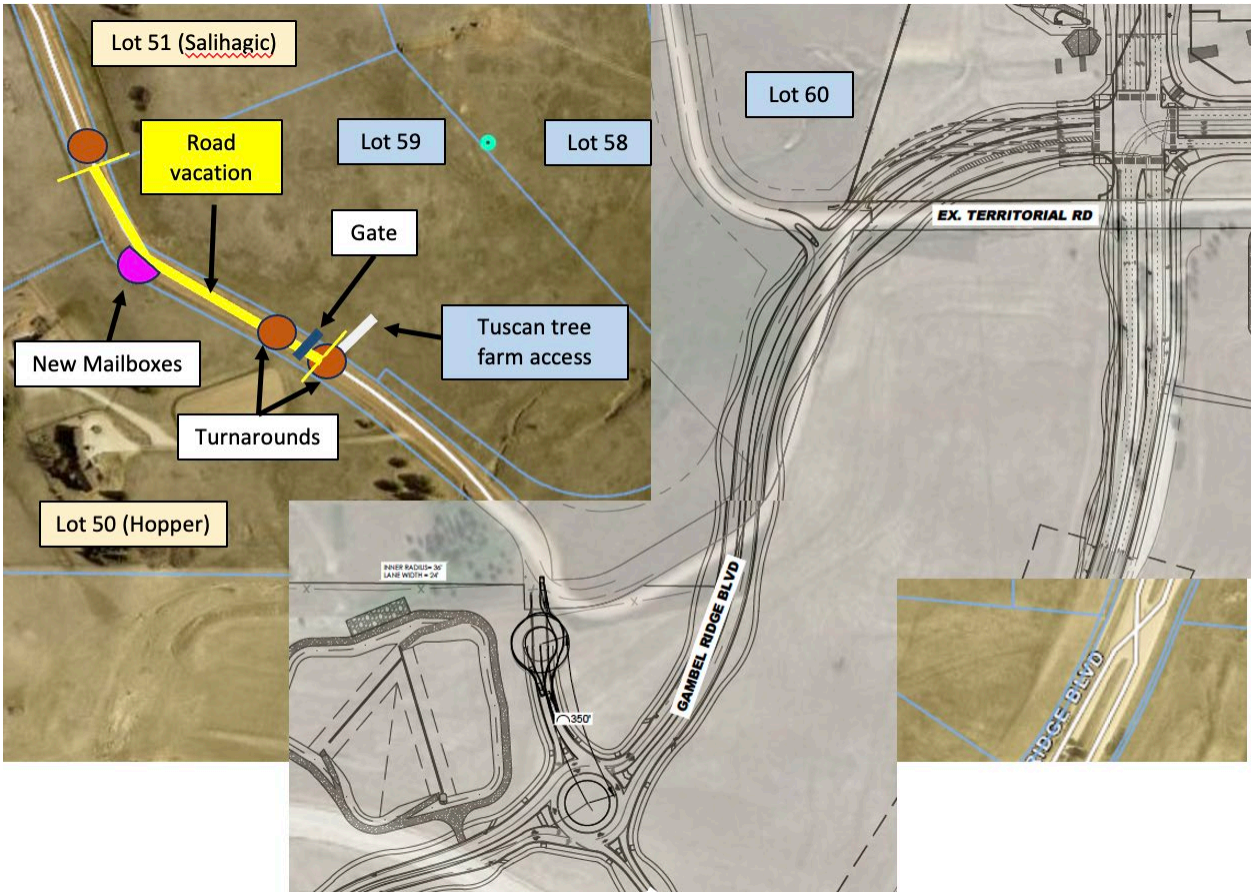
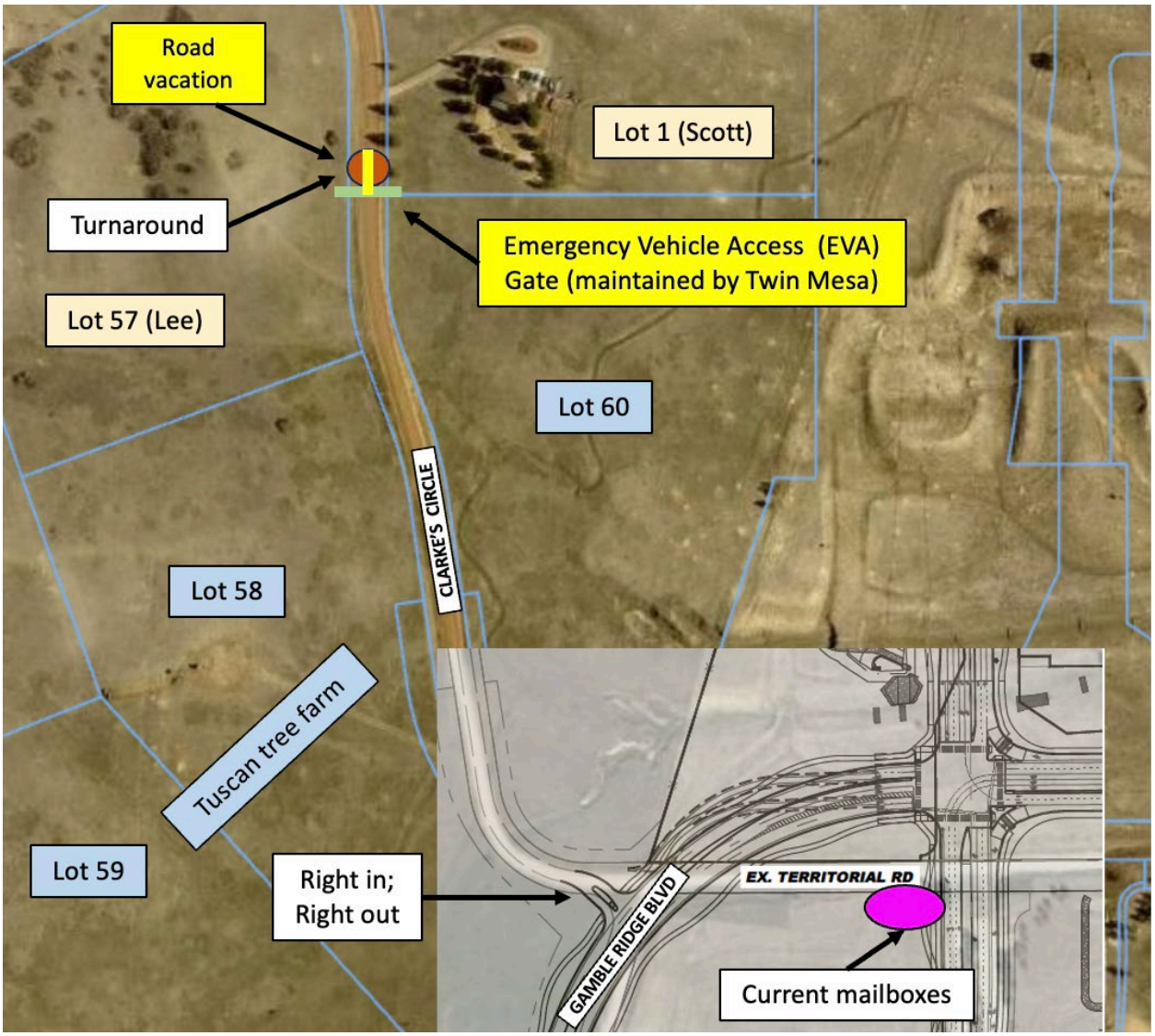


Exhibit E (cont)
Map of Improvements

The emergency vehicle gate will be located somewhere on Clarke's Circle.



WATCHMAN®
Your Virtual Security Guard

WXL model
Can integrate with CellGate external cameras

Advanced Telephone Entry with Live Streaming Video

by cellgate

For Multi-Tenant applications, supports up to 3,000 directory listings.



WXL Surface Mount



WXL Pedestal Mount

Key Features

- Streaming cellular or internet video telephone entry
- Brilliant 11" color touchscreen
- Verizon or AT&T LTE service, ships with both SIM cards
  No VoIP fees required
- Integrates with up to 3 external cameras
- Calls up to 6 app video contacts and 3 voice-only numbers per directory listing
- Voice Mail Intelligence - VMI
  System ignores voice mail and continues call group
- Built-in HID card reader
- Built-in postal lock
- 30,000 local codes and 64,000 non-local codes
- Prop open notification
  if gate is left open more than 3 minutes
- Integrates with any Cellgate product through TrueCloud™

powered by: verizon AT&T ethernet

Part Numbers

WXL Surface Mount

AAIXLSM ATT AAIXLSM VZN AAIXLSM INT	Provides One Wiegand Input
AAIXLSM-IX ATT AAIXLSM-IX VZN AAIXLSM-IX INT	Provides Two Wiegand Inputs
AAIXLSM-2X ATT AAIXLSM-2X VZN AAIXLSM-2X INT	Provides Three Wiegand Inputs

Flush Mount Kit part #s in Specifications section.

WXL Pedestal Mount

AAIXLPE ATT AAIXLPE VZN AAIXLPE-IX INT	Provides One Wiegand Input
AAIXLPE-IX ATT AAIXLPE-IX VZN AAIXLPE-IX INT	Provides Two Wiegand Inputs
AAIXLPE-2X ATT AAIXLPE-2X VZN AAIXLPE-2X INT	Provides Three Wiegand Inputs

WXL Feature Spotlight



QR CODE VISITOR MANAGEMENT

SMART SCREEN CALL MANAGEMENT

Now Available with up to 3 Wiegand ports

QR Code Visitor Management
Visitors can receive QR code invites with restricted date/time access on their smart phones.

Smart Screen Call Management
Customizable touch screen call options, for improved visitor management.



External Camera Options

Up to 3 external cameras

Photos
- Taken on entry transactions and on demand
- Cloud-stored still photos

Recorded Video
- Pixel activated video stored on SD card or accessible via CellGate technical support
- Recording w/6-second pre-record

*See external camera sheet for more details

1.855.694.2837 cellgate cell-gate.com

HDSW24UL HEAVY-DUTY VARIABLE SPEED SWING GATE OPERATOR

SECTION 32 31 00



KEY FEATURES

BATTERY BACKUP	Yes
REMOTE CONTROL ACCESS	Security+ 2.0® 3-channel receiver will handle up to 50 remote controls (unlimited remotes with 811LMX/813LMX)
INTERNET CONNECTIVITY	myQ® connection and myQ capability for secure monitoring and control of gate operator from anywhere*
MONITORED SAFETY INPUTS	6 inputs (main and expansion board)
SOLAR-POWER CAPABILITIES	Yes
DIAGNOSTIC DISPLAY	LED diagnostic display
WIRELESS DUAL-GATE COMMUNICATION	Eliminates expensive conduit costs and unsightly driveway scars
DUAL-GATE CONTROL	Bi-part delay or synchronized close
FIRE DEPARTMENT COMPLIANT	Allows gate to auto open upon loss of AC power or battery depletion: includes manual release
LIMIT SETTING	Electronic
PROGRAMMABLE AUXILIARY RELAYS	4 programmable auxiliary relays accommodate more accessories such as warning lights/alarms
UNAUTHORIZED ACCESS PREVENTION	Can be programmed with anti-tailgate or quick close capabilities
HOMELINK® COMPATIBLE	Version 4 or higher

SPECIFICATIONS

OPERATOR SPEED	90-degree opening in 13-36 seconds
POWER	120/240VAC single phase
ACCESSORY POWER	24VDC 1 A max. output; switched and unswitched power
OPERATOR WEIGHT	249 lbs.
WARRANTY	5 years commercial, 7 years residential
TEMPERATURE SPECIFICATIONS	Without heater: -4°F (-20°C) to 140°F (60°C); with optional heater: -40°F (-40°C) to 140°F (60°C)
UL USAGE CLASSIFICATION	Class I, II, III and IV

CONSTRUCTION

MOTOR	24VDC brushless motor with soft start/stop
OPERATOR DUTY RATING	Continuous-duty
CHASSIS/FRAME	Constructed with 1/4 in. black powder coated steel for rust prevention
GEAR REDUCTION	Direct drive 1,600:1 gear ratio
COVER	High-density, UV-resistant polyethylene 2-piece cover for excellent heat and corrosion resistance
RECOMMENDED CAPACITIES	Rated for gates up to 22 ft. in length or weighing up to 2,800 lbs. Up to 4,500 lbs. with optional long arm at 14 ft. gate length

*When linked with myQ. Cellular data or Wi-Fi® connection required.

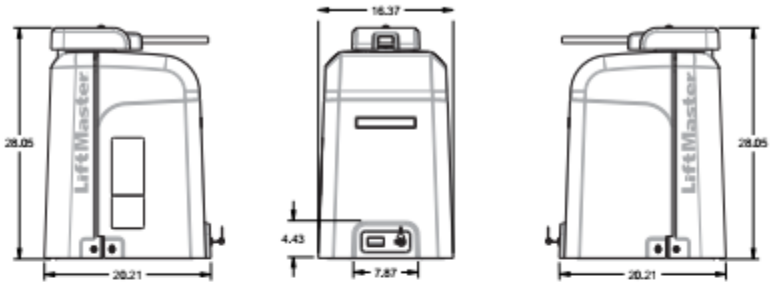
DATA SHEET
SWING GATE OPERATOR

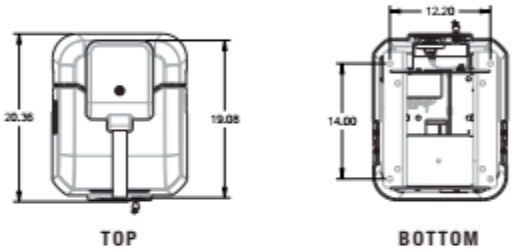
LiftMaster

HDSW24UL HEAVY-DUTY VARIABLE SPEED SWING GATE OPERATOR

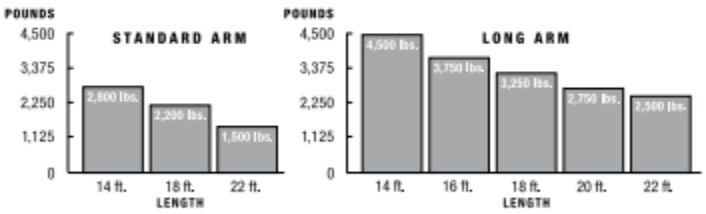
SECTION 32 31 00

DIMENSIONS





CAPACITY



© 2021 The Chamberlain Group LLC. All Rights Reserved.
LiftMaster, the LiftMaster logo, myQ® and the myQ® logo are registered trademarks of the Chamberlain Group LLC
LiftMaster.com

LMPAENDSHDSWMC21 12/21

LiftMaster

Exhibit F
Example Operating Budget

Estimated General Fund Budget

	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Beginning Funds Available	$ -	$ 982	$ 1,694	$ 88	$ 2,773	$ 3,757	$ 8,797	$ 5,031	$ 5,286	$ 2,568
Revenue										
Property Taxes	$ 74,881	$ 75,630	$ 76,386	$ 77,150	$ 77,922	$ 78,701	$ 50,342	$ 50,846	$ 51,354	$ 51,868
Specific Ownership Taxes	$ 3,744	$ 3,782	$ 3,819	$ 3,858	$ 3,896	$ 3,935	$ 2,517	$ 2,542	$ 2,568	$ 2,593
Developer Advances	$ 100,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Fees for Non-Resident Use	$ -	$ -	$ -	$ -	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000
Other Income	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Revenue	$ 178,625	$ 79,412	$ 80,206	$ 81,008	$ 82,818	$ 83,636	$ 53,860	$ 54,388	$ 54,922	$ 55,461
Total Funds Available	$ 178,625	$ 80,394	$ 81,899	$ 81,096	$ 85,591	$ 87,393	$ 62,656	$ 59,419	$ 60,208	$ 58,029
Expenditures										
P&L Insurance	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000
Dues (Special District Assoc)	$ 650	$ 650	$ 650	$ 650	$ 650	$ 650	$ 650	$ 650	$ 650	$ 650
Accounting Fees	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000
Audit/Audit Exemption	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000
Legal Fees	$ 20,000	$ 15,000	$ 15,000	$ 15,000	$ 15,000	$ 15,000	$ 15,000	$ 15,000	$ 15,000	$ 15,000
District Organizing Fees (legal, surveys,etc)	$ 40,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Elections	$ 3,500	$ -	$ 3,500	$ -	$ 3,500	$ -	$ 3,500	$ -	$ 3,500	$ -
Road Maintenance & Snow Removal	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500
Supplies	$ 250	$ 250	$ 250	$ 250	$ 250	$ 500	$ 500	$ 500	$ 500	$ 500
Cellgate	$ 3,120	$ 3,120	$ 3,120	$ 3,120	$ 3,120	$ 3,120	$ 3,120	$ 3,120	$ 3,120	$ 3,120
Gate Maintenance & Deductible	$ -	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000
Gate Insurance	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000
Traffic Signs	$ -	$ 500	$ 100	$ 100	$ 100	$ 100	$ 100	$ 100	$ 100	$ 100
Repayment of Developer Advance (5 years)	$ -	$ 24,046	$ 24,046	$ 24,046	$ 24,046	$ 24,046				
County Treasurer's Fees	$ 1,123	$ 1,134	$ 1,146	$ 1,157	$ 1,169	$ 1,181	$ 755	$ 763	$ 770	$ 778
Transfer to Capital Reserve Fund	$ 89,500	$ 9,500	$ 9,500	$ 9,500	$ 9,500	$ 9,500	$ 9,500	$ 9,500	$ 9,500	$ 9,500
Total Expenditures	$ 177,643	$ 78,700	$ 81,811	$ 78,323	$ 81,834	$ 78,596	$ 57,625	$ 54,133	$ 57,640	$ 54,148
Ending Fund Balance	$ 982	$ 1,694	$ 88	$ 2,773	$ 3,757	$ 8,797	$ 5,031	$ 5,286	$ 2,568	$ 3,881
Net Change in Fund Balance	$ 982	$ 712	$ (1,606)	$ 2,685	$ 983	$ 5,040	$ (3,766)	$ 255	$ (2,718)	$ 1,313
Emergency Reserve	$ 5,329	$ 2,361	$ 2,454	$ 2,350	$ 2,455	$ 2,358	$ 1,729	$ 1,624	$ 1,729	$ 1,624
Ending Available Funds	$ 982	$ 1,694	$ 88	$ 2,773	$ 3,757	$ 8,797	$ 5,031	$ 5,286	$ 2,568	$ 3,881
Assessed Valuation	$ 9,984,170	$ 10,084,012	$ 10,184,852	$ 10,286,700	$ 10,389,567	$ 10,493,463	$ 10,598,398	$ 10,704,382	$ 10,811,425	$ 10,919,540
Mill Levy-General O&M	7.500	7.500	7.500	7.500	7.500	7.500	4.750	4.750	4.750	4.750
Capital Reserve Fund										
Beginning Fund Balance	0	$ 9,500	$ 19,000	$ 28,500	$ 38,000	$ 47,500	$ 57,000	$ 66,500	$ 76,000	$ 85,500
Transfers from Operating Fund	$ 89,500	$ 9,500	$ 9,500	$ 9,500	$ 9,500	$ 9,500	$ 9,500	$ 9,500	$ 9,500	$ 9,500
Capital Improvements (Gate)	$ 60,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 50,000
Road Improvements (turn arounds)	$ 20,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Ending Fund Balance	$ 9,500	$ 19,000	$ 28,500	$ 38,000	$ 47,500	$ 57,000	$ 66,500	$ 76,000	$ 85,500	$ 45,000

Exhibit G
Resolution of Approval

RESOLUTION NO. R-013- _____

THE BOARD OF COUNTY COMMISSIONERS

OF THE COUNTY OF DOUGLAS, COLORADO

A RESOLUTION APPROVING THE SERVICE PLAN OF

TWIN MESA METROPOLITAN DISTRICT

WHEREAS, on **[INSERT DATE]**, a service plan for the proposed **TWIN MESA METROPOLITAN DISTRICT** ("Service Plan") was filed with the Douglas County Clerk and Recorder ("Clerk"), and the Clerk, on behalf of the Board of County Commissioners ("Board"), mailed a Notice of Filing of Special District Service Plan to the Division of Local Government in the Department of Local Affairs on **[INSERT DATE]**; and

WHEREAS, on **[INSERT DATE]**, the Douglas County Planning Commission recommended approval of the Service Plan to the Board; and

WHEREAS, on **[INSERT DATE]**, the Board set a public hearing on the Service Plan for **[INSERT DATE]** ("Public Hearing"), and (1) ratified publication of the notice of the date, time, location and purpose of such Public Hearing, which was published in *The Douglas County News-Press* on **[INSERT DATE]**; and (2) caused notice of the date, time and location of the Public Hearing to be mailed on **[INSERT DATE]**, to the governing body of the existing municipalities and special districts which have levied an *ad valorem* tax within the next preceding tax year and which have boundaries within a radius of three miles of the proposed boundaries of **[INSERT NAME OF DISTRICT]** ("District") and, on **[INSERT DATE]**, to the petitioners and to the property owners, pursuant to the provisions of § 32-1-204(l.5), C.R.S.; and

WHEREAS, on **[INSERT DATE]**, a Public Hearing on the Service Plan was opened at which time all interested parties, as defined in § 32-1-204, C.R.S., were afforded an opportunity to be heard, and all testimony and evidence relevant to the Service Plan and the organization of the proposed District was heard, received and considered.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF THE COUNTY OF DOUGLAS, STATE OF COLORADO, THAT:

Section 1. The Board does hereby determine that all procedural requirements of §§ 32-1-201, *et seq.*, C.R.S., relating to the Service Plan have been fulfilled and that the Board has jurisdiction in the matter.

Section 2. The Board does hereby find:

(a) that there is sufficient existing and projected need for organized service in the area to be serviced by the proposed District; and

(b) that the existing service in the area to be served by the proposed District is inadequate for present and projected needs; and

(c) that the proposed District is capable of providing economical and sufficient service to the area within the proposed boundaries; and

(d) that the area to be included in the proposed District has, or will have, the financial ability to discharge the proposed indebtedness on a reasonable basis; and

(e) that adequate service is not, or will not be, available to the area through Douglas County or other existing municipal or quasi-municipal corporations, including existing special districts, within a reasonable time and on a comparable basis; and

(f) that the facility and service standards of the proposed District are compatible with the facility and service standards of Douglas County and each municipality which is an interested party under § 32-1-204, C.R.S.; and

(g) that the proposal is in substantial compliance with the Douglas County Comprehensive Master Plan; and

(h) that the proposal is in compliance with any duly adopted county, regional, or state long-range water quality management plan for the area; and

(i) that the creation of the proposed District will be in the best interests of the area proposed to be served; and

(j) that the Service Plan, based upon the statements set forth in the Service Plan and upon all evidence presented at the Public Hearing on the Service Plan, meets all conditions and requirements of §§ 32-1-201, *et seq.*, C.R.S.

Section 3. The Board hereby approves the Service Plan without conditions; provided, however, that such action shall not imply the approval of any land development activity within the proposed District or its service area, or of any specific number of buildable units identified in the Service Plan, unless the Board has approved such development activity as part of a separate development review process.

Section 4. The legal description of the District shall be as provided in **Exhibit A**, attached hereto and incorporated herein by reference.

Section 5. A certified copy of this resolution shall be filed in the records of Douglas County.

PASSED AND ADOPTED this ___ day of _____, 202__, in Castle Rock,

Douglas County, Colorado.

THE BOARD OF COUNTY COMMISSIONERS OF THE COUNTY OF DOUGLAS, COLORADO

BY: _____

, Chair

ATTEST:

_____
Deputy Clerk

EXHIBIT A TO RESOLUTION NO. R-013- _____

(Legal Description)

Twin Mesa Metropolitan District
Exhibit H

Exhibit H
Compliance with Section 18A, Water Supply

The District does not require water service from any water provider nor is any water supply plan required for the District, pursuant to Section 18A, Water Supply – Overlay District, of the Douglas County Zoning Resolution, as amended. The District will not provide any water services and neither owns nor controls any water rights. The existence, operation and maintenance of the District will have no demand for water, and the District does not require any commitment from any person to provide water.

(1) No Will-Serve letter is required.

(2) No Water Supply Plan is required.

Exhibit I
Compliance with Colorado Department of Public Health and Environment Requirements

NOT APPLICABLE

The Regional Clean Water Plan is not applicable to Twin Mesa Metropolitan District and therefore neither Colorado Department of Public Health and Environment requirements nor any other wastewater treatment provider is required to issue a compliance letter in connection therewith.

Exhibit J
Advance and Reimbursement Agreement

The form of proposed reimbursement agreement between the District and the Petitioners and/or others who will provide funding for capital expenditures, operational expenses, and organizational costs in lieu of the District issuing debt or receiving sufficient ad valorem property taxes for operations and maintenance is included below.

ADVANCE AND REIMBURSEMENT AGREEMENT
BY AND BETWEEN
TWIN MESA METROPOLITAN DISTRICT
AND

This **ADVANCE AND REIMBURSEMENT AGREEMENT** (the "Agreement") is entered into as of _____, 20__ (the "Effective Date") by and between Twin Mesa Metropolitan District, a quasi-municipal corporation and political subdivision of the State of Colorado (the "District") and _____, (the "Lender"), individually referred to herein as the "Party" and collectively referred to herein as the "Parties".

RECITALS

WHEREAS, the District was organized pursuant to the Special District Act, § 32-1-101, *et seq.*, C.R.S., as amended, for the purpose of providing certain public improvements, facilities and services to and for the use and benefit of the District, its residents, users, property owners and the public; and

WHEREAS, pursuant to § 32-1-1001(1)(d)(I), C.R.S., as amended, the Board of Directors of the District (the "Board") is empowered to enter into contracts and agreements affecting the affairs of the District; and

WHEREAS, the District and Lender agree that the advance of funds to the District, or on behalf of the District, for operation and maintenance costs of the District, including, but not limited to, legal, accounting, design, engineering and management costs, and for capital costs associated with certain public improvements, facilities and equipment (the "Advance(s)") is consistent with the public objects and purpose of the District; and

WHEREAS, the Board has determined that the best interests of the District, its residents, users, property owners and the public will be served by the District's receipt of and benefit from the Advances; and

WHEREAS, the Board has determined that the best interests of the District, its residents, users, property owners and the public will be served by the District's acknowledgement of the Advances; and

WHEREAS, the District and Lender desire to enter into this Agreement setting forth their understanding with respect to the Advances and the reimbursement therefor.

NOW, THEREFORE, in consideration of the mutual covenants set forth herein, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties hereto agree as follows:

TERMS AND CONDITIONS

1. PURPOSE. The purpose of this Agreement is to establish the terms and conditions pursuant to which Lender makes the Advances to the District and the District makes reimbursement to Lender for the Advances.

2. ADVANCES. Upon application therefor by the Board, Lender may provide Advances to the District, on terms as may be mutually agreed upon by the Parties, for use by the District for operations and maintenance purposes and for capital projects for public improvements. Upon the request of Lender, the District shall provide substantiation of the need for such Advances. Upon the request of the District, Lender shall provide documentation to the District evidencing the total amount of any Advances claimed owed to Lender, which may include, without limitation, invoices, check registries, cancelled checks, and bank statements.

3. REIMBURSEMENT. The District shall reimburse Lender for the Advances, together with non-compounding per annum interest on such sums advanced at an interest rate not exceed the Bond Buyer 20-Bond GO Index plus four percent (4%). Interest shall accrue as of the date each Advance is made to the District; provided, however, that no interest shall begin to accrue on any Advance made to the District prior to the date on which the District was officially formed. The District shall make payment for the Advances, subject to annual appropriation and budget approval, from funds available within any fiscal year and not otherwise required for operations, and capital improvements. Lender understands and acknowledges that the District's obligation to reimburse Lender under this Agreement is not a multiple fiscal year obligation. Payments by the District shall be applied first to interest on, then to principal of the Advances in chronological order to their effective date. Notwithstanding the foregoing, Lender acknowledges and agrees that any Advance amount, together with interest thereon, not reimbursed within five (5) years following the date on which Lender made such Advance shall be deemed to be paid in full and forever discharged on the fifth anniversary of such Advance, notwithstanding any unpaid amounts remaining on any subsequent Advances made by Lender.

4. ACCOUNTING OF FUNDING. Whenever Lender makes an Advance to the District, the Parties shall record the same on the Outstanding Advance & Reimbursement Payment Obligations agreement (the "Outstanding Obligations Agreement"), a form of which is attached hereto as **Exhibit A** and incorporated herein by this reference. The Parties will make reasonable efforts to execute the Outstanding Obligations Agreement between January 1st and January 31st of each year throughout the term of this Agreement; notwithstanding the foregoing, the failure of the Parties to mutually execute the Outstanding Obligations Agreement in any year or years shall not nullify or waive any accrued Advances. Further, the District shall direct its accountant to account for any Advances in such fashion that the amounts thereof shall be readily ascertainable as to principal of and total amounts outstanding, and Lender may request an inspection of the accounting of such funds.

5. TERM OF AGREEMENT. This Agreement shall commence on the date of the first Advance made from Lender to the District, and shall terminate five (5) years after the last Advance made by Lender hereunder.

6. NOTICES. Any notices, demands or other communications required or permitted to be given, shall be given in writing, delivered personally or sent by U.S. Mail, addressed to the Parties at the addresses set forth below or at such other address as either Party may hereafter or from time to time designate by written notice to the other Party given in accordance herewith.

To the District:

Twin Mesa Metropolitan District
c/o Law Office of Michael E. Davis, LLC
1151 Eagle Drive, Suite 366
Loveland, Colorado 80537
Attn: Michael E. Davis

With a copy to:

Law Office of Michael E. Davis, LLC
c/o Law Office of Michael E. Davis, LLC
1151 Eagle Drive, Suite 366
Loveland, Colorado 80537

To Lender:

_____
_____
_____

7. ASSIGNMENT AND DELEGATION. The rights, or any parts thereof, granted to the Parties herein may be assigned only with the prior written consent of the non-assigning Party, which consent shall not be unreasonably withheld. The obligations, or any parts thereof, of the Parties may not be delegated to any third party without the prior written consent of the non-delegating Party, which consent shall not be unreasonably withheld.

8. NO THIRD-PARTY BENEFICIARIES. It is expressly understood and agreed that enforcement of the terms and conditions of this Agreement, and all rights of action relating to such enforcement, shall be strictly reserved to the Parties and nothing contained in this Agreement shall give or allow any such claim or right of action by any other third party on such Agreement. It is the express intention of the Parties that any person other than Parties receiving services or benefits under this Agreement shall be deemed to be an incidental beneficiary only.

9. AMENDMENT AND MODIFICATION. This Agreement may be amended or modified only in writing signed by both Parties.

10. BINDING EFFECT. This Agreement shall inure to and be binding on the heirs, executors, administrators, successors and assigns of the Parties hereto.

11. ENTIRE AGREEMENT. This Agreement constitutes the entire agreement between the Parties relating to the Advances and reimbursement therefor and sets forth the rights, duties and obligations of each Party to the other as of this date. Any prior agreements, promises, negotiations or representations not expressly set forth in this Agreement are of no force and effect. This Agreement may not be modified except by a writing executed by the Parties.

12. SEVERABILITY. If any provision of this Agreement is determined to be unenforceable or invalid, the unenforceable or invalid part shall be deemed severed from this Agreement, and the remaining portions of this Agreement shall be carried out with the same force as if the severed portions had not been part of this Agreement, provided that the Parties both agree that the severed provision does not alter the intent and/or purpose of the Agreement.

13. CONTROLLING LAW. This Agreement shall be governed by and construed in accordance with the laws of the State of Colorado and exclusive jurisdiction and venue shall lie in the District Court within which the boundaries of the District are located.

14. NO WAIVER. No waiver of any of the provisions of this Agreement shall be deemed to constitute a waiver of any other provisions of this Agreement, nor shall such waiver constitute a continuing waiver unless otherwise expressly provided herein, nor shall the waiver of any default hereunder be deemed a waiver of any subsequent default hereunder.

15. GOVERNMENTAL IMMUNITY. Nothing herein shall be construed as a waiver of the rights and privileges of the District pursuant to the Colorado Governmental Immunity Act, §§ 24-10-101, *et seq*., C.R.S., as amended from time to time.

16. CONDITION SUBSEQUENT. It shall be a condition subsequent to this Agreement that, to the extent necessary, it be submitted to the Securities Commissioners pursuant to the requirements of the Colorado Municipal Bond Supervision Act, §11-59-101, C.R.S., as amended, (the "Act"), and that it receive an exemption or other clearance from the registration requirements of the Act pursuant to §11-59-110, C.R.S., as amended.

17. COUNTERPART EXECUTION. This Agreement may be executed in several counterparts, each of which shall be deemed an original, and all of which together shall constitute one and the same instrument.

[Remainder of page intentionally left blank]

IN WITNESS WHEREOF, the Parties have caused this Agreement to be duly executed and delivered by their respective officers thereunto duly authorized as of the date first above written.

TWIN MESA METROPOLITAN DISTRICT

_____

_____, President

ATTEST:

_____

_____, Secretary/Treasurer

LENDER

_____

Printed Name: _____

EXHIBIT A
Outstanding Advance & Reimbursement Obligation Form

OUTSTANDING ADVANCE & REIMBURSABLE PAYMENT OBLIGATIONS

In accordance with Paragraph 4 of the *Advance and Reimbursement Agreement*, dated _____, 20__, the Parties agree that the information set forth below represents the outstanding Advance obligations between the Parties as of the date indicated.

DATE: _____ _____, 20___

ADVANCE:

Advance made by Lender as of the above date: $_____

Bond Buyer 20-Bond GO Index, Plus 4.0%
at time of the Advance: _____ + 4.0% = _____ %

Total current outstanding Advance balance: $_____

TWIN MESA METROPOLITAN DISTRICT

_____
By: _____
Its: President

ATTEST:

_____
By: _____
Its: Secretary/Treasurer

LENDER

_____
Printed Name: _____

Twin Mesa Metropolitan District
Exhibit J

Exhibit K
District Court Decree

DIRECTIONS:

This exhibit shall include a copy of the recorded district court decree certifying the election and organizing the District.

SERVICE PLAN

FOR

TWIN MESA METROPOLITAN DISTRICT

DOUGLAS COUNTY, COLORADO

Prepared

By

Law Office of Michael E. Davis, LLC
1151 Eagle Drive, Suite 366
Loveland, Colorado 80537

Submission Date: April 11, 2024

APPROVAL DATE: _____

Twin Mesa Metropolitan District

APPROVAL SUMMARY

This Service Plan for Twin Mesa Metropolitan District (the "District") was approved by the Douglas County Board of County Commissioners on (date). Resolution No. _____, approving this Service Plan, has been recorded at Reception No. _____ on (date). The organizational and TABOR elections took place on (date). The court decree organizing the District was recorded with the Douglas County Clerk and Recorder on (date) at Reception No. _____.

Twin Mesa Metropolitan District

PETITIONERS AND CONSULTANTS

This Service Plan has been prepared by the representatives of the Petitioners and the following participating consultants:

Petitioners Representative Name: Damian Cox Address: 1288 S. Peak View Drive City, State Zip: Castle Rock, CO 80109 Phone: (720) 933-3648 Fax: (303) 688-1386 Email: damian@coxrelaw.com	District Counsel Company: Law Office of Michael E. Davis, LLC Attn: Michael Davis Address: 1151 Eagle Drive, Ste. 366 Loveland, CO 80537 Phone: (720) 324-3130 Email: michael@mdavislawoffice.com
Petitioners Representative Name: Dan Clemens Address: 1066 Clarke Ct. City, State Zip: Castle Rock, CO 80109 Phone: (303) 378-0642 Email: dan@quietpath.com	Petitioners Representative Name: Denny Ingram Address: 1268 Clarkes Circle City, State Zip: Castle Rock, CO 80109 Phone: (303) 570-7061 Email: dennying58@gmail.com
Petitioners Representative Name: Rick Stucy Address: 1426 Castle Mesa Drive City, State Zip: Castle Rock, CO 80109 Phone: (303) 378-1592 Email: rick@trailstardev.com	Petitioners Representative Name: Matt Thomson Address: 1446 O'Brien Way City, State Zip: Castle Rock, CO 80109 Phone: (303) 578-6260 Email: thomsonhomes@gmail.com

[ADDITIONAL CONSULTANTS MAY BE ADDED AT THE DISCRETION OF THE PETITIONERS.]

EXECUTIVE SUMMARY

This service plan is for Twin Mesa Metropolitan District (the "District"), which will serve certain public roadway improvement and traffic safety needs for most of the Twin Oaks subdivision, the Castle Mesa South, Castle Mesa West subdivisions, most of the Castle Mesa subdivision along with four other properties. This District is generally located at Wolfensberger Rd. and S. Peak View Drive to Twin Oaks Rd and Territorial Rd and contains approximately 1,632.26 acres. The District is anticipated to include 120 residential units and no commercial space.

The District will have a single district structure. This structure will allow the District to control services.

The District shall be authorized to provide the following services pursuant to C.R.S. § 32-1-103(10): street improvements and traffic safety protection and other services as described in C.R.S. §§ 32-1-1001 and 1004, as amended, as more fully described in Section IX below. The District shall not have the authority to issue general obligation debt.

The primary purpose of the District is to provide safety protection services by erecting, operating and maintaining traffic and safety controls and devices on roadways within the District pursuant to C.R.S. § 32-1-1004(1)(b). The District does not intend to finance the construction of the public improvements. The total authorized debt limit for the District shall be Zero Dollars ($0.00), and the Maximum Debt Service Mill Levy shall be zero (0.000) mills. The Maximum Operations and Maintenance Mill Levy shall be ten (10.000) mills, subject to adjustment to account for legislative or constitutional changes as described herein.

The Petitioners will submit an application and request that the County vacate approximately 600 feet of Twin Oaks Road and appurtenant rights of way to and for the benefit of the District for the purpose of locating the Traffic Control Gate, along with a portion of Clarke's Circle for the purpose of maintaining an emergency access gate. It is anticipated that the County will consider that application and request in accordance with the County's standard procedures for vacating property. The District will then fund the design and construction of the Traffic Control Gate, and the operation and maintenance of both the Traffic Control Gate and the emergency gate. Notwithstanding the foregoing, if construction of the bridge for the Crystal Valley Interchange has not commenced or the emergency gate on Clarke's Circle has not been approved to be installed by the County as of December 31, 2030, the District will be dissolved in accordance with Section XVI of this Service Plan (in which case the District will dismantle the Traffic Control Gate and convey roadway property then owned by the District to the County prior to the District's dissolution).

In the absence of Intergovernmental Agreements to the contrary, neither the County nor the Town of Castle Rock will have any maintenance responsibilities related to the Traffic Control Gate or the vacated portion of the County roads.

Twin Mesa Metropolitan District

Table of Contents

I. EXHIBITS 1
II. INTRODUCTION 2
III. PURPOSE OF THE DISTRICT 3
IV. DISTRICT FRAMEWORK 3
V. NEED FOR DISTRICT 3
VI. LOCATION AND BOUNDARIES 4
VII. ASSESSED VALUATION/PROJECTIONS/LAND USE/POPULATION 4
VIII. POWERS AND RESPONSIBILITIES 5
A. General Powers 5
B. Miscellaneous Powers 5
IX. DISTRICT SERVICES, FACILITIES, AND IMPROVEMENTS 5
A. Services and Facilities 5
1. Street Improvements 5
2. Traffic Safety Protection 5
B. Estimated Costs and Phasing of Improvements 6
C. Compliance with Section 18A, Water Supply – Overlay District, of the Douglas County Zoning Resolution, as amended 7
D. Compliance with DRCOG Clean Water Plan 7
X. EXISTING AND PROPOSED AGREEMENTS 7
XI. FINANCIAL INFORMATION 8
A. General 8
B. Assumptions 8
C. Identification of District Revenue 8
D. Debt Service Mill Levy 8
E. Operations and Maintenance Mill Levy 8
F. District Expenditures 9
G. Debt 9
XII. ADVANCES AND REIMBURSEMENTS 9
XIII. ANNUAL REPORT 9
XIV. MODIFICATION OF SERVICE PLAN 9
XV. DISCLOSURE STATEMENT 10

XVI. DISSOLUTION 10
XVII. DEFINITIONS 11
XVIII. RESOLUTION OF APPROVAL 12
XIX. STATUTORY FINDINGS AND CONCLUSIONS 12

Twin Mesa Metropolitan District

I. EXHIBITS

Exhibits A through **L**, attached hereto are incorporated into this Service Plan

Exhibit A	Vicinity Map
Exhibit B	Legal Description
Exhibit C	District Boundary Map
Exhibit D	Cost of Improvements
Exhibit E	Map of Improvements
Exhibit F	Example Operating Budget
Exhibit G	Resolution of Approval
Exhibit H	Compliance with Section 18A, Water Supply
Exhibit I	Compliance with Colorado Department of Public Health and Environment Requirements
Exhibit J	Advance and Reimbursement Agreement
Exhibit K	District Court Decree

II. INTRODUCTION

This service plan (the "Service Plan") for the Twin Mesa Metropolitan District (the "District") is for a special district organized under Title 32 of the Colorado Revised Statutes to serve certain public improvement needs, as described herein, of most of the Twin Oaks subdivision, the Castle Mesa South and Castle Mesa West subdivisions, most of the Castle Mesa subdivision along with four other properties. This District is generally located at Wolfensberger Rd. and S. Peak View Drive to Twin Oaks Rd and Territorial Rd (see **Exhibit A**, Vicinity Map) and contains approximately 1,632.26 acres (see **Exhibits B & C**, Legal Description and District Boundary Map).

Pursuant to the requirements of the Special District Control Act, C.R.S. §32-1-201, *et seq.*, as amended, and the Special District Service Plan Review Procedures for Douglas County (the "County"), the following items are included in this Service Plan:

1. A description of the powers granted to and services to be provided by the District;
2. A general description of the facilities to be constructed and the standards of such construction, including a statement of how the facility and service standards of the District are compatible with facility and service standards of the County and of any municipalities and special districts which are interested parties;
3. A general written description of the estimated cost of acquiring land, engineering services, legal services, administrative services, initial indebtedness and estimated maximum interest rates and discounts, and other major expenses related to the organization and initial operation of the District;
4. A summary of general conditions regarding oversight of the District by the County;
5. A legal description and map of the District's boundaries and an estimate of the population and valuation for assessment of the District;
6. A summary of estimated costs for improvements to be financed and constructed by the District;
7. A preliminary engineering and architectural survey showing how the improvements and services are to be provided;
8. An Example Operating Budget showing how District improvements and services are to be financed, including the operating revenue for the first three budget years of the District;
9. The resolution of approval adopted by the Board of County Commissioners;
10. Information demonstrating compliance with Section 18A, Water Supply – Overlay District, of the Douglas County Zoning Resolution, as amended, and compliance with the Denver Regional Council of Governments' Clean Water Plan;
11. A description of any advance and reimbursement agreements;
12. A description of any arrangement or agreement with any political subdivision for the performance of any services between the District and such other political subdivision; and
13. The recorded court decree organizing the District.

III. PURPOSE OF THE DISTRICT

The purpose of the District is to operate and maintain certain public roadway and traffic safety improvements and services for the benefit of all current and anticipated inhabitants and taxpayers of the District. The District will also oversee and pay for, but not finance, the installation of certain traffic safety controls and devices from time to time, and provide for ongoing operations and maintenance services for such public improvements.

IV. DISTRICT FRAMEWORK

The District will be organized under a single district structure and will be responsible for all aspects of services authorized under this Service Plan.

V. NEED FOR DISTRICT

The District is a rural neighborhood consisting of approximately four subdivisions and four other properties of acreage/agricultural properties that were approved in the late 1960s to early 1970s. The four subdivisions are currently serviced by dedicated County roads. The Town of Castle Rock, the Colorado Department of Transportation and the County have approved an interchange at I-25 and Crystal Valley Parkway which includes construction of a bridge over I-25, north and southbound on- and off-ramps, a bridge over the BNSF railroad tracks, and connection to the east I-25 frontage road and the relocated west I-25 frontage road ("Crystal Valley Interchange"). Additionally, the Town of Castle Rock has approved the Dawson Trails project; approximately 2,064 acres of high-density, mixed-use development located near the Crystal Valley Interchange consisting of approximately 5,850 dwellings and 3.2 million square feet of commercial space. The Crystal Valley Interchange and Dawson Trails will create a substantial amount of traffic and population growth directly adjacent to the District Boundaries. This increased volume of traffic has a high probability of materially changing the current rural residential local roads within the District Boundaries into heavily travelled urban collector roads used to feed traffic to and from the Dawson Trails development and the arterial roads adjacent to I-25.

It is generally believed by the Dawson Trails developer, the Town of Castle Rock and the County, that Clarke's Circle will need to be blocked with an emergency gate in order to prevent direct local road access so close to the proposed Crystal Valley Interchange. Upon vacation of the portion of Clarke's Circle with the emergency access only gate by the Board of County Commissioners to the District, the District will maintain the emergency access gate and that portion of Clarke's Circle.

It is also generally believed that the Dawson Trails development and Crystal Valley Interchange will cause additional cut-through traffic on the roads in Twin Oaks and Castle Mesa. Therefore, there is an existing need for the District to erect traffic and safety controls on the local roadways within the District to create traffic patterns that can be sustained by the County as the population and vehicular traffic in the vicinity increase as projected. The traffic and safety controls will be comprised primarily of a motorized gate to limit non-resident traffic beyond a designated location, an emergency gate installed by the County on Clarke's Circle, and signage to direct non-residents to designated collector and arterial roads. The District is being created to construct and maintain the safety controls and devices that will ~~assist the County in~~ limit~~ing~~ traffic flow to sustainable levels

according to ~~County~~ applicable standards, while also preserving the existing rural character for the local residents residing within the District Boundaries.

VI. LOCATION AND BOUNDARIES

This District is generally located at Wolfensberger Rd. and S. Peak View Drive to Twin Oaks Rd and Territorial Rd. A vicinity map is attached hereto as **Exhibit A**. The area of the initial District's boundary encompasses approximately 1,632.26 acres. A legal description of the District's boundaries is attached hereto as **Exhibit B**. A map of the District's boundaries is attached hereto as **Exhibit C**.

It is anticipated that the District will include 100% of the property described in **Exhibit B** and **Exhibit C** within its' boundaries at the time of its formation. Prior to any inclusion or exclusion of any property pursuant to C.R.S. §§ 32-1-401, et seq., and C.R.S. §§ 32-1-501, et seq., as amended that is not identified in **Exhibits B** and **C**, the District shall provide forty-five (45) days published notice and written notice to the Board of County Commissioners pursuant to C.R.S. § 32-1-207(3)(b). If, within such forty-five (45) day period, the Board of County Commissioners objects to the inclusion or exclusion, then the inclusion or exclusion shall be prohibited and constitute a material modification of this Service Plan requiring an amendment, pursuant to Section XIV of the Service Plan and C.R.S. § 32-1-207(2).

VII. ASSESSED VALUATION/PROJECTIONS/LAND USE/POPULATION

As of January 4, 2024, the property within the District is zoned Agricultural One, Rural Residential, Estate Residential and Large Rural Residential. The current assessed value of property within the boundaries of the District as of January 4, 2024 is nine million nine hundred eighty-four thousand one hundred seventy dollars ($9,984,170.00). The property within the District Boundaries is approximately 92.5% built-out so the assessed valuation is not expected to change materially except as a result of normal market conditions. The assessed valuation is expected to be sufficient for the District to operate and maintain the planned traffic controls and appurtenant property and improvements, and pay for necessary capital improvements without the need to issue Debt. The District currently includes one hundred twenty (120) residential lots and Zero square feet of commercial space. Based upon an estimated four (4.00) persons per residence, the maximum population of the District is estimated to be four hundred eighty (480) residents.

Approval of this Service Plan by the County does not constitute nor imply approval of the development of a specific area within the District, nor does it constitute or imply approval of the number of residential units or the total site/floor area of commercial or industrial buildings identified in this Service Plan or any of the exhibits attached hereto, unless such land use plans have been approved by the Board of County Commissioners as part of a separate development review process.

VIII. POWERS AND RESPONSIBILITIES

The District has the power and authority to provide the public improvements and related operation and maintenance services within the boundaries of the District as such power and authority is permitted by this Service Plan and described in the Special District Act, C.R.S. Title 32, and other applicable statutes, common law, and the Colorado Constitution, subject to the limitations set forth herein.

A. General Powers

The District shall have the authority to construct, operate, and maintain the services and facilities as described in Section IX.A of this Service Plan.

B. Miscellaneous Powers

In addition to the powers enumerated above, the District's Board shall have the power and authority:

1. To amend this Service Plan as provided for in Section XIV, Modification of Service Plan;

2. To have and exercise all rights and powers necessary or incidental to, or implied from, the specific powers granted to the District in this Service Plan.

Without limiting the foregoing, the District shall not have the authority to exercise the power of eminent domain.

IX. DISTRICT SERVICES, FACILITIES, AND IMPROVEMENTS

A. Services and Facilities

The District shall have the authority pursuant to C.R.S. §§ 32-1-1001 and 32-1-1004, as amended, to provide the following services and public improvements described in this section.

1. Street Improvements

The District has the power and authority to maintain certain streets and roadway improvements and right of ways within the District which have been vacated by the County, including, but not limited to, culverts and drainage facilities, retaining walls and appurtenances, lighting, grading, landscaping, streetscaping, placement of underground utilities, snow removal, and other street improvements, and architectural enhancements to any or all of the above, with all necessary and incidental and appurtenant facilities, land and easements, together with extensions and improvements thereto.

2. Traffic Safety Protection

The District has the power and authority to fund, design, construct, acquire, install, maintain, and provide for safety protection through traffic control devices and safety controls on streets, as well as such other facilities and improvements as are necessary or prudent, including, but not limited to, a motorized gate to be erected across a portion of roadway vacated by the County (the "Traffic Control Gate"), an emergency vehicle gate planned for installation by the County on Clarke's Circle, traffic signs, area identification signs, directional assistance and driver information signs, and turnarounds, with all necessary and incidental and appurtenant facilities, and land and

easements, together with extensions and improvements thereto. All traffic and safety control devices will be consistent with and in compliance with County rules and regulations and any other appropriate local jurisdiction regarding public right of ways.

The procedures and methods for operating and maintaining the Traffic Control Gate and the emergency vehicle gate will be determined by the District's board of directors after formation of the District. Pursuant to this Service Plan, however, the District's board of directors will ensure that the Traffic Control Gate is Opticom controlled with Knox key backup, and that passcodes, QR codes, RFI readers or other access credentials provide 24/7 access through the Traffic Control Gate for all authorized users, including without limitation the residents of the District, utility providers (including without limitation CORE Electric Cooperative and Public Service Company of Colorado), school districts, emergency service providers (including without limitation Castle Rock Fire & Rescue), law enforcement (including without limitation the County Sheriff's Office), all County services and County service providers, and other service providers such as trash collection and deliveries (collectively, "Authorized Users"). ~~It is anticipated that the District's board of directors may impose an annual toll fee on persons who are not Authorized Users but choose to pass through the Traffic Control Gate on a regular basis (e.g., commuters who are not residents of the District).~~ For the purpose of maintaining traffic control, the District does not intend to allow non-resident use of or access through the Traffic Control Gate. However, if non-resident use is required, or if the Board of Directors of the District determines that traffic can be controlled to manageable levels while permitting a limited number of non-resident users to use the Traffic Control Gate, the District shall charge such non-resident users an annual fee that is no less than the highest ad valorem property taxes paid to the District by any resident on an annual basis. In no event shall t~~T~~he District ~~shall not~~ charge any ~~tolls~~ fees to any Authorized User for use of the Traffic Control Gate.

Formatted: Font color: Auto

B. Estimated Costs and Phasing of Improvements

An estimate of the costs of Traffic Control Gate , which may be planned for, designed, acquired, constructed, installed and maintained by the District was prepared based upon a preliminary proposal by Rocky Mountain Access Controls, Inc. and is approximately $42,394 as shown in **Exhibit D** (proposal for the installation of the Traffic Control Gate with two motorized swing gate operators). All descriptions of the Traffic Control Gate to be constructed, and its related costs, are estimates only and are subject to modification as engineering, development plans, economics, the County's requirements, and construction scheduling may require. The District will continue to develop and refine cost estimates contained herein. The District will not issue debt to finance the construction and installation of the Traffic Control Gate. All construction cost estimates assume construction to applicable local, State, or Federal requirements.

The specific location of the Traffic Control Gate is contingent upon the County's approval of the District's road vacation application. **Exhibit E** shows the proposed Traffic Control Gate. Phasing of construction shall be determined by the District to meet the needs of taxpayers within its boundaries. The District shall own, maintain, and replace public improvements constructed, installed, or acquired by the District. Without limiting the foregoing, the District will operate and maintain the Traffic Control Gate, and such operations and maintenance will include but not be limited to roadway, curb, gutter, signage, monumentation and other appurtenances that have been

conveyed to the District, as necessary, based on the final design and construction of such improvements. Neither the County nor the Town of Castle Rock shall be responsible for any construction, operation or maintenance costs of the Traffic Control Gate or any improvements appurtenant to the Traffic Control Gate that have been conveyed to the District.

In all instances, the District shall ensure that the public improvements are designed and constructed in accordance with the standards and specifications of the County or other such entity that may have authority over such design and construction. The District will obtain all necessary permits and approvals for the installation of the Traffic Control Gate, including without limitation any permits required by Douglas County's Building Division.

C. Compliance with Section 18A, Water Supply – Overlay District, of the Douglas County Zoning Resolution, as amended

The District does not require water service from any water provider nor is any water supply plan required for the District, pursuant to Section 18A, Water Supply – Overlay District, of the Douglas County Zoning Resolution, as amended. (Refer to Exhibit H.) The District will not provide any water services and neither owns nor controls any water rights. The existence, operation and maintenance of the District will have no demand for water, and the District does not require any commitment from any person to provide water.

D. Compliance with DRCOG Clean Water Plan

The Regional Clean Water Plan is not applicable to Twin Mesa Metropolitan District and therefore neither DRCOG nor any other wastewater treatment provider is required to issue a compliance letter in connection therewith. (Refer to Exhibit I.)

X. EXISTING AND PROPOSED AGREEMENTS

After approval of this Service Plan by the County, the applicants will move forward with their application requesting the County to vacate portions of the County road(s) within the District to and for the benefit of the District for the purpose of locating the Traffic Control Gate and an emergency vehicle gate to be constructed by the County on Clarke's Circle. It is anticipated that the County will consider such application(s) and request in accordance with the County's standard procedures for vacating property. Notwithstanding the foregoing, if construction of the bridge for the Crystal Valley Interchange has not commenced or the emergency gate on Clarke's Circle has not been approved to be installed by the County as of December 31, 2030, the District will be dissolved in accordance with Section XVI of this Service Plan (in which case the District will dismantle the Traffic Control Gate and convey roadway property then owned by the District to the County prior to the District's dissolution).

Neither the County nor the Town of Castle Rock will have any maintenance responsibilities related to the Traffic Control Gate or the vacated portion of the County roads unless either enters into an Intergovernmental Agreement with the District.

XI. FINANCIAL INFORMATION

A. General

This section describes the nature, basis, and method of funding and mill levy limitations associated with the District's public improvements. An example operating budget (the "Operating Budget") and statement of assumptions is contained in **Exhibit F**.

B. Assumptions

The revenue estimate contained herein is based on the assumption that each of the 120 residential properties in the District has an average assessed valuation of approximately eighty three thousand dollars ($83,000.00). The Operating Budget demonstrates that the District has the ability to pay for the operations and maintenance of the public improvements identified herein and will operate on a sound fiscal basis.

C. Identification of District Revenue

The District will impose a mill levy on taxable property within its boundaries as a primary source of revenue for repayment of developer advances and operations and maintenance. The District may also rely upon various other revenue sources authorized by law. At the District's discretion, additional revenue sources may include fees, rates, ~~tolls,~~ penalties, or other charges in accordance with C.R.S. § 32-1-1001(1), as amended. If non-resident use of the Traffic Control Gate is required or permitted, the District may impose a fee for such use as described in Section IX.A(2) for the purpose of traffic control. It is not anticipated that the revenue from such fees, if any, would have a material impact on the District's budgeted revenue. ~~The District anticipates that it may impose a toll for non-District resident use of the roads and Traffic Control Gate within the District for the purpose of partially covering the cost of erecting, operating and maintaining the District road, Traffic Control Gate and other safety controls and devices.~~

A Maximum Total Mill Levy of 10.00 mills is authorized to support operations and maintenance of the District. The District estimates that during the first five years of operation a total combined mill levy of approximately 7.500 mills will produce revenue sufficient to support the operations and maintenance needs of the District as well as the District's repayment of developer advances (see **Exhibit F**, Operating Budget). After the fifth year, it is anticipated that the mill levy will be reduced to 4.750 mills.

If there are changes in the method of calculating assessed valuation or any legislative or constitutionally mandated tax credit, cut, or abatement, the Maximum Total Mill Levy may be increased or decreased to reflect such changes, such increases or decreases to be determined by the Board in good faith so that to the extent possible, the actual tax revenue generated by such mill levy are neither diminished nor enhanced as a result of such changes. For purposes of the foregoing, a change in the ratio of actual valuation to assessed valuation shall be deemed to be a change in the method of calculating assessed valuation.

D. Debt Service Mill Levy

The District shall not impose a mill levy for the purpose of servicing Debt.

E. Operations and Maintenance Mill Levy

A maximum mill levy of 10.000 mills is authorized to support the operations and maintenance of District services and public improvements. It is anticipated that an initial

operations and maintenance mill levy of 7.500 mills will produce revenue sufficient to support the operations and maintenance of District service and public improvements (see **Exhibit F**, Operating Budget).

F. District Expenditures

The estimated cost of public improvements for the District is $80,000.00. **Exhibit D** includes, in current dollars, the estimate cost to install the Traffic Control Gate.

The District will require operating funds to plan and cause the public improvements contemplated herein to be constructed, operated, and maintained as permitted herein. Such costs are expected to include reimbursement of organizational costs, legal, engineering, accounting, and compliance with State budgeting, audit, and reporting, and other administrative and legal requirements. The organizational costs for the District for legal, engineering, surveying, and accounting services are estimated to be forty thousand dollars ($40,000.00). The first year's operating budget is estimated to be approximately one hundred seventy-seven thousand dollars ($177,000.00). However, the following fiscal year is estimated to be approximately seventy-eight thousand dollars ($78,000.00). See **Exhibit F**.

G. Debt

The District is not authorized to issue Debt.

XII. ADVANCES AND REIMBURSEMENTS

The District anticipates receiving initial funding for both capital and ongoing administrative requirements from advances. Such advances may be made to the District subject to the District's obligation to reimburse the same, with or without interest, as may be evidenced by short-term reimbursement agreements or other acceptable agreements or resolutions. The interest rate, if any, on reimbursements shall not exceed the current Bond Buyer 20-Bond GO Index plus four percent (4%) and interest shall not compound. The repayment of any such advances shall be subject to annual appropriation by the Board and may be repaid by the District only from legally available sources of revenue. Any amount of outstanding principal and accrued interest on such advances that remains unpaid after five years of such advance shall be deemed to be forever discharged and satisfied in full. The total advances are anticipated to be one hundred thousand dollars ($100,000.00).

XIII. ANNUAL REPORT

The District shall be responsible for submitting an annual report to the County in accordance with the procedures set forth in C.R.S. § 32-1-207(3)(c)(I), as amended. The annual report must conform to the format and include the content set forth in C.R.S. § 32-1-207(3)(c)(II).

XIV. MODIFICATION OF SERVICE PLAN

Pursuant to C.R.S. § 32-1-207, as amended, the District shall obtain prior written approval of the County before making any material modification to this Service Plan. Material modifications require a Service Plan amendment and include modifications of a basic or essential nature, including, but not limited to, the following: any addition to the types of services provided by the

District; a decrease in the level of services; a decrease in the financial ability of the District to discharge the existing or proposed indebtedness; or a decrease in the existing or projected need for organized service in the area. Inclusion of property that is located in a county or municipality with no other territory within the District may constitute a material modification of the Service Plan.

In the event the District plans to undertake an action which may not be permitted by this Service Plan, it shall be the District's responsibility to contact County staff to seek an administrative determination as to whether the action in question is permitted by the Service Plan. If County staff determines that the action may constitute a material modification, the District shall submit a proposal for action to the Board of County Commissioners. Thereafter, the Board of County Commissioners will determine whether the proposed action constitutes a material modification. If the Board of County Commissioners determines that the proposed action constitutes a material modification, then the action shall be prohibited and constitute a material modification of this Service Plan requiring an amendment, pursuant to C.R.S. § 32-1-207(2).

Any material modification of this Service Plan approved by the County is not effective until it is ratified by a vote of the registered electors of the District by way of a special election. If such modification is not so approved, then the modification is void.

XV. DISCLOSURE STATEMENT

The District will provide notice to all purchasers of property in the District regarding the District's authority to levy and collect *ad valorem* taxes and to impose and collect rates, fees, ~~tolls,~~ and other charges, by recording a disclosure statement against the property within the District with the Office of the Douglas County Clerk and Recorder. Such disclosure statement must also provide information concerning the structure of the Board and summarize how purchasers may participate in the affairs of the Board. The disclosure statement must be recorded within thirty (30) days following the recordation of the court decree organizing the District and such recording shall be deemed adequate notice to purchasers of property as described herein.

XVI. DISSOLUTION

It is mandatory for the District to initiate dissolution proceedings when the District has neither any financial obligations nor operations and maintenance obligations, or if the District is required to remove the Traffic Control Gate. In such case, the District may file a petition in the district court for dissolution when there are no financial obligations, or any such financial obligations are adequately secured by escrow funds or securities meeting the investment requirements in C.R.S. §§ 24-75-601, *et seq.,* as amended. The District's dissolution is subject to approval of a plan of dissolution in the district court of the County, pursuant to C.R.S. § 32-1-704, as amended. Upon dissolution, all District roads and/or emergency access gate will be vacated to the County.

XVII. DEFINITIONS

In this Service Plan, the following terms shall have the meanings indicated below, unless the context hereof clearly requires otherwise:

Board: the board of directors of the District.

Board of County Commissioners: the Board of County Commissioners of Douglas County, Colorado.

Control Act: Part 2 of Title 32 (Special Districts) of the Colorado Revised Statutes (C.R.S.), which outlines review procedures for service plans for a special district.

County: Douglas County, Colorado.

Debt: any bond, note debenture, contract, or other multiple-year financial obligation of a District.

District: the Twin Mesa Metropolitan District.

District Boundaries: the boundaries of the area described in the legal description attached hereto as **Exhibit B.**

District Boundary Map: the map attached hereto as **Exhibit C**, showing the District's boundaries.

Operating Budget: the estimated operating budget described in Section XI and attached as **Exhibit F**, which describes: (a) how the public improvements are to be funded; (b) is the operating expenses expected to be incurred; and (c) the estimated operating revenue derived from property taxes for the first budget year.

Petitioners: the group of property owners within the boundaries of the District who have signed the petition to create the District.

Maximum Debt Service Mill Levy: the maximum mill levy the District is permitted to impose for payment of debt as set forth in Section XI.D.

Maximum Operations and Maintenance Mill Levy: the maximum mill levy the District is permitted to impose for the payment of operating and maintenance expenses as set forth in Section XI.E.

Maximum Total Mill Levy: the maximum mill levy the District is permitted to impose for the payment of debt as set forth in Section XI.D. and operating and maintenance expenses as set forth in Section XI.E.

Public Improvements: the improvements authorized to be planned, designed, acquired, constructed, installed, relocated, redeveloped, and financed as generally described in the Special

District Act to serve the future taxpayers and inhabitants of the District as determined by the Board of the District.

Service Plan: the service plan for the District approved by the Board of County Commissioners.

Special District Act: C.R.S. § 32-1-101, *et seq.*, as amended.

State: the State of Colorado.

Traffic Control Gate: the motorized gate to be erected across the portion of Twin Oaks Road vacated by the County.

XVIII. RESOLUTION OF APPROVAL

The District incorporates the Board of County Commissioner's resolution approving this Service Plan into this Service Plan to be presented to the district court attached hereto as **Exhibit G**.

XIX. STATUTORY FINDINGS AND CONCLUSIONS

It is submitted that this Service Plan for the District, as required by C.R.S. § 32-1-203, as amended, establishes that:

1. There is sufficient existing and projected need for organized service in the area to be served by the District;

   There is an existing, present need to erect safety controls on the local roadways within the District to create traffic patterns that can be sustained by the County as the population and vehicular traffic in the vicinity increase as projected. The safety controls will be comprised primarily of a motorized gate to limit non-District resident traffic beyond a County-designated location, and signage to direct non-District residents to designated collector and arterial roads. The District is being created to construct and maintain the safety controls and devices that will assist the County in limiting traffic flow to sustainable levels, while also preserving the existing rural character for the local residents residing within the District Boundaries.

2. The existing service in the area to be served by the District is inadequate for present and projected needs;

   The existing unpaved roads within the District Boundaries were designed and are maintained as residential gravel roads, not collector streets suitable for the high density residential and commercial property currently being developed adjacent to the District Boundaries. The traffic safety controls proposed by the District will reduce traffic congestion and safety concerns by diverting traffic flows to County and Town of Castle

Rock collector and arterial roads that are designed and maintained to safely carry higher volumes of traffic.

3. The District is capable of providing economical and sufficient service to the area within its boundaries;

   The Example Operating Budget in the Service Plan demonstrates that the District is capable of economically and sufficiently providing the proposed services.

4. The area to be included in the District has, or will have, the financial ability to discharge the indebtedness on a reasonable basis;

   The District will not issue Debt to pay for any of the public improvements.

5. Adequate service is not, or will not be, available to the area through the County or other existing municipal or quasi-municipal corporations, including existing special districts, within a reasonable time and on a comparable basis;

   The County does not anticipate being able to provide any additional traffic safety and controls within the boundaries of the District, and existing controls are not adequate in light of current development in the vicinity and the anticipated increase in traffic.

6. The facility and service standards of the District are compatible with the facility and service standards of each county within which the District is to be located and each municipality which is an interested party under C.R.S. § 32-1-204(1), as amended;

   The traffic safety controls will be maintained by the District to County standards.

7. The proposal is in substantial compliance with the Douglas County Comprehensive Master Plan, as amended, adopted pursuant to C.R.S. § 30-28-106, as amended;

   Because the property within the District is essentially fully built-out, the proposed District has no impact on the Douglas County Comprehensive Master Plan.

8. The proposal is in compliance with the regional Clean Water Plan, as amended; and

   The District has no impact on the Clean Water Plan.

9. The creation of the District will be in the best interests of the area to be served.

   The creation of the District is in the best interests of the property owners and tax payers within the District Boundaries and will result in improved traffic and safety controls not otherwise provided by the County .

Exhibit A
Vicinity Map

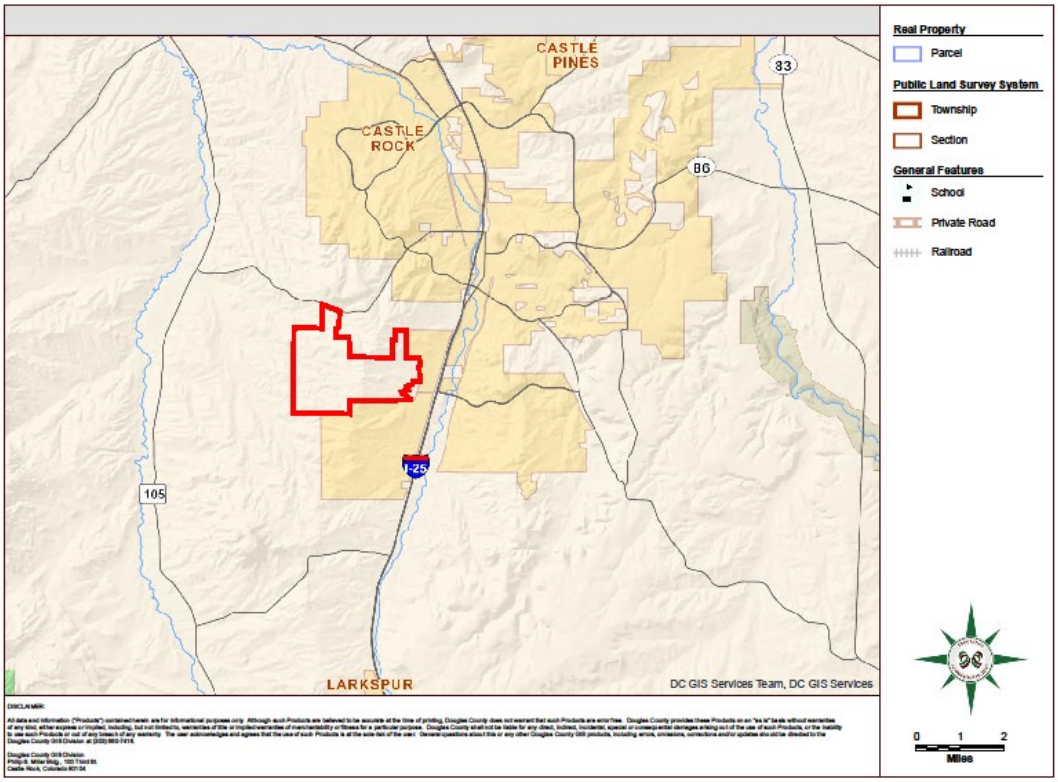


Exhibit B
Legal Description

The District consists of the following legally described parcels:

1. TWIN OAKS SUBDIVISION – As shown on the Castle Mesa South Subdivision Plat recorded June 21, 1973 at reception #161972:

Part of sections 21 and 22, township 8 south, range 67 west of the sixth principal meridian, county of Douglas, state of Colorado being more particularly described as follows:

commencing at the northwest corner of said section 21 being the true point of beginning; thence north 89°54'23" east along the north line of the northwest one-quarter of said section 21 a distance of 2628.85 feet to the north one-quarter corner of said section 21; thence south 89°27'04" east along the north line of the northeast one-quarter of said section 21 a distance of 2628.34 feet to the northeast corner of said section 21; thence south 89°09'11" east along the north line of the northwest one-quarter of said section 22 a distance of 2635.82 feet to the north one-quarter corner of said section 22;thence south 00°03'00" west along the north – south centerline of said section 22 a distance of 1330.11 feet to the southeast corner of the north one-half of the northwest one-quarter of said section 22; thence north 89°07'05" west along the south line of the north one-half of the northwest one-quarter a distance of 1316.36 feet to the northeast corner of the southwest one-quarter of the northwest one-quarter of said section 22; thence south 00°01'04" east along the east line of the southwest one-quarter of the northwest one-quarter a distance of 1329.32 feet to the southeast corner of the southwest one-quarter of the northwest one-quarter of said section 22; thence north 89°04'58" west along the south line of the southwest one-quarter of said section 22 a distance 65.07 feet to a point on the centerline of territorial road which is recorded in Book 1 at page 5 of the Douglas County records; thence south 17°39'12" west along the centerline of said road a distance of 1390.06 feet to a point on the south line of the northwest one-quarter of the southwest one-quarter of said section 22; thence north 89°05'55" west along said south line a distance of 826.17 feet to the southwest corner of the northwest one-quarter of the southwest one-quarter of section 22; thence north 89°33'14" west along the south line of the north one-half of the southeast one-quarter a distance of 2643.14 feet to a point on the north-south centerline of said section 21; thence continuing north 89°33'14" west along the south line of the north one-half of the southwest one-quarter of said section 21 a distance of 2643.27 feet to the southwest corner of the north one-half of the southwest one-quarter of said section 21; thence north 00°20'09" east along the west line of the southwest one-quarter of said section 21 a distance of 1322.83 feet to the west of one-quarter corner of said section 21; thence north 00°20'09" east along the west line of the northwest one-quarter of said section 21 a distance of 2645.65 feet to the true point of beginning.

Excluding:

a) Lot 3, Twin Oaks Plat recorded June 21, 1973 at reception #161972, County of Douglas, State of Colorado

b) Lot 4, Twin Oaks Plat recorded June 21, 1973 at reception #161972, County of Douglas, State of Colorado

Twin Mesa Metropolitan District
Exhibit B

c) Lot 59, Twin Oaks Amended Replat recorded January 28th, 1980 at reception #2489215, County of Douglas, State of Colorado

d) Lot 58, Twin Oaks Amended Replat recorded January 28th, 1980 at reception #2489215, County of Douglas, State of Colorado

e) Lot 60, Twin Oaks Amended Replat recorded January 28th, 1980 at reception #2489215, County of Douglas, State of Colorado

f) Tract C, Twin Oaks Plat recorded June 21, 1973 at reception #161972, County of Douglas, State of Colorado

g) That portion of Briscoe Lane vacated under Ordinance 86-24 at book 680, page 920 at reception #198625694

h) All of Clarkes Circle adjacent to the east side of Lot 58

i) All of Territorial Road

2. (SCHULL PARCELS) East ½ of the Southeast ¼ of Section 16, Township 8 South, Range 67 West of the 6th P.M., County of Douglas, State of Colorado.
Including:

a) Parcel 3, Quiet Oaks Rural Site Plan recorded November 18, 1998 at reception #9892467, County of Douglas, State of Colorado.

Excluding:

a) Parcel 1, Quiet Oaks Rural Site Plan recorded November 18, 1998 at reception #9892467, County of Douglas, State of Colorado.

3. CASTLE MESA SOUTH SUBDIVISION – As shown on the Castle Mesa South Subdivision Plat recorded September 24, 1997 at reception #145078:

Being the East one half of Section 20, Township 8 South, Range 67 West of the 6th Principal Meridian, including:

a) All of the Laton Exemption recorded at reception #2014076603
b) All of the Castle Mesa South 1st Amendment recorded at reception #9516208

4. CASTLE MESA WEST SUBDIVISION – As shown on the Castle Mesa West Subdivision Plat recorded November 15, 1972 at reception #155776:

Being the west one half of section 20, township 8 south, range 67 west of the 6th principal meridian, including: Castle Mesa West Replat of Lot 16 recorded at reception #1980250347

5. CASTLE MESA SUBDIVISION – As shown on the Castle Mesa Subdivision Plat recorded February 19, 1969 at reception #132468:

Twin Mesa Metropolitan District
Exhibit B

Part of Section 17, Township 8S, Range 67W of the 6th P.M., Douglas County, State of Colorado, more particularly described as follows:
Beginning at the SE corner of said Sec. 17, thence S88°07'E along the south boundary of said Sec. 17, 5392.32 ft to the S W corner of said Sec. 17, thence N 01°31'E along the west boundary of said Sec. 17, 2636.08 ft to the west ¼ corner of said Sec. 17, thence S 88 21 30 E along the east west centerline of said Sec 17, 4232.38 ft to a point, thence N 00°34'45"W- 1682.00 to a point on the southerly R.O.W. of County Road No. 214, Thence southeasterly along the southerly R.O.W. of County Road No. 214, 324.46 ft to a point on the east boundary of said Sec. 17, thence S 01°49'E along the East Boundary of said Sec. 17, 4202.78 ft, more or less to the point of beginning.
Excluding:

a) Lot 18, Castle Mesa Subdivision,
County of Douglas, State of Colorado

b) Lot 1, Castle Mesa Subdivision,
County of Douglas, State of Colorado

c) Lot 2, Castle Mesa Subdivision
County of Douglas, State of Colorado

6. (OSBORNE PARCEL) A tract of land located in the Northeast ¼ of Section 17, Township 8 South, Range 67 West of the 6th Principal Meridian, more particularly described as follows:

Beginning at a point on the West line of the Northeast ¼ and 1001.8 feet South of the North ¼ corner of Section 17;
Thence South along the West line of the Northeast ¼ 1585.7 feet to the Southwest corner of the Northeast 1/4 of Section 17;
Thence East along the South line of the Northeast 1/4 1605.86 feet to a point;
Thence North 552.9 feet to a point in the center line of South Peakview Drive;
Thence North 89º12' West 421.3 feet to a point;
Thence North 42º37'13" West 1456.16 feet to a point;
Thence North 89º45'30" West 193.4 feet more or less to the True Point of Beginning.

Except that part that lies within South Peakview Drive, and except that part described in the instrument recorded May 18, 1976 in Book 289 at Page 876, and except that part described in the instrument recorded February 2, 1998, in Book 1507 at Page 1188, County of Douglas, State of Colorado.

7. (POMARICO PARCEL) A tract of land located in the Northeast ¼ of Section 17, Township 8 South, Range 67 West of the 6th Principal Meridian, County of Douglas, State of Colorado, more particularly described as follows:

Beginning at a point on the South boundary of Wolfensberger Road, 340.6 feet South of the North ¼ corner of Section 8;
Thence South 69º16' East along Wolfensberger Road 1686.9 feet to a point on the West boundary of South Peakview Drive;

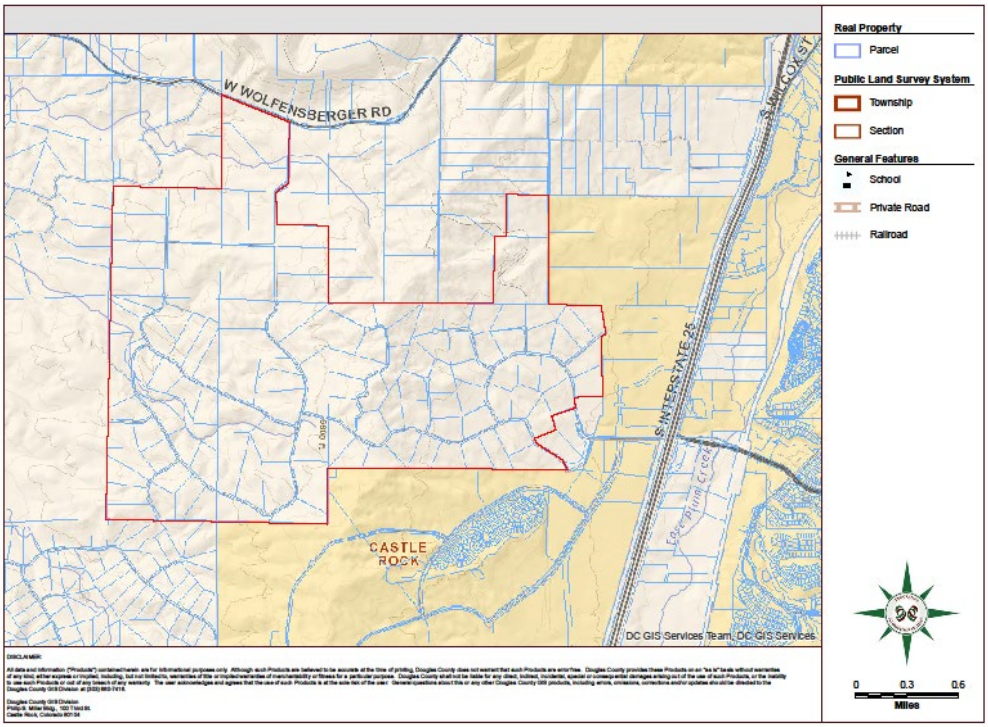
Twin Mesa Metropolitan District
Exhibit B

Thence South 0º21’ West along the West boundary of South Peakview Drive, 1140.2 feet to a point;
Thence North 89º12’West 391.3 feet to a point;
Thence North 42º37’13” West 1456.16 feet to a point;
Thence South 89º45’30” West 193.4 feet to a point on the West line of the Northwest ¼ of Section 8;
Thence North along the West line of the Northwest ¼ of Section 8 661.2 feet more or less to the point of beginning.

8) All of Peak View Drive lying within section 17, township 8 south, range 67 west of the 6th principal meridian.

Twin Mesa Metropolitan District
Exhibit B

Exhibit C
District Boundary Map



Twin Mesa Metropolitan District
Exhibit C

Exhibit D
Cost of Improvements

Rocky Mountain Access Controls, Inc.

303-339-6746
FAX: 303-339-6996

PROPOSAL

March 29, 2024 Estimate No: 14650

Ref: Twin Mesa Metro Dist.

We propose to supply and install two (2) ***swing gate operators*** on new swing gate leafs set up as entry/exit as follows:

Qty 2	Furnish and install two (2) 5' tall ornamental iron swing gates powder coated black hung on 6" steel posts that are set in concrete footers hung on heavy duty barrel hinges to fit a 24' opening (2-12'x5' tall leafs)
Qty 2	Furnish and install two (2) LiftMaster HDSW24UL heavy duty swing gate operators this includes a saw cut across the driveway for primary secondary operation
Qty 2	LiftMaster reinforced arm kits
Qty 2	Steel pedestals set in concrete to fit the footprint of the new operators
Qty 1	Photo cell mounted across the opening
Qty 2	Infinity RFID SC-1000W uhf readers to include mounting posts and brackets
Qty 200	Infinity RFID SS-UMT-002 windshield/headlight tags
Qty 1	CellGate Watchman WXL multi-tenant mounted on a gooseneck post that is powder coated black and set in concrete
Qty 3	Preformed trenched safety loops (1 inside safety, 1 outside safety and 1 shadow)
Qty 2	Loop detectors with adjustable sensitivity
Qty 2	Knox key switch
Qty 1	Labor to install the above listed system and end user training

Total Price (supply and install): $42,394.00 total

Description: Entry open activation is by CellGate Watchman and RFID reader. Exit open activation is by RFID reader. Entrapment protection is by photo cell mounted across the opening. Secondary entrapment protection is by safety loops. Emergency open activation is by Knox key switches.

Notes and Exclusions: Permits and performance bonds are excluded. All private locates are excluded. Proposal for installation is good for 30 days. Supply and install of all conduits and cabling between supply, gates and controls for electrical power and communication is excluded. Supply and install of all requisite earth ground components and surge suppression is excluded. Customer must supply power and conduit to the new operators. We are not responsible for anything under the ground when we are digging.

Warranty: Rocky Mountain Access Controls, Inc., and its sub-contractors warranties that the workmanship, techniques, and procedures used in its installations shall be of professional quality, in accordance with factory recommendations, and shall be free from defect for a period of one (1) year from date of substantial completion. This warranty to cover anchors, fasteners and other incidental supplies used to install product. Rocky Mountain Access Controls, Inc. shall administer manufacturer's warranties on products, equipment and associated controls sold by Rocky Mountain Access Controls, Inc. according to respective factory terms and conditions. Warranty excludes service, repair, or replacement of equipment, which is damaged, or operating improperly due to severe weather, other acts of nature, vandalism, abuse, or misuse.

Upon entering into an agreement, either a purchase order must be issued by the Customer, or a contract supplied by Rocky Mountain Access Controls, Inc. is signed and returned authorizing us to proceed with any work.
Rocky Mountain Access Controls, Inc.

Jamie

Jamie Langerman
www.rmacontrols.com
jlangerman@rmacontrols.com
Cell 720-355-6071

Twin Mesa Metropolitan District
Exhibit E

Exhibit E
Map of Improvements

The location of the Traffic Control Gate on Twin Oaks Road will be determined in accordance with the County's road vacation process (refer to Section X).

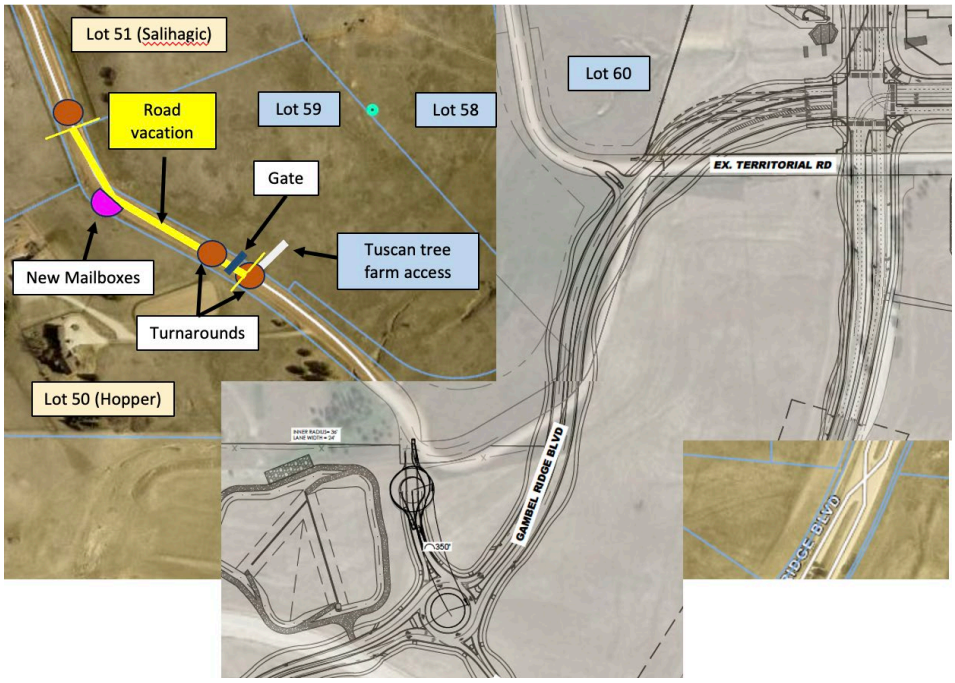
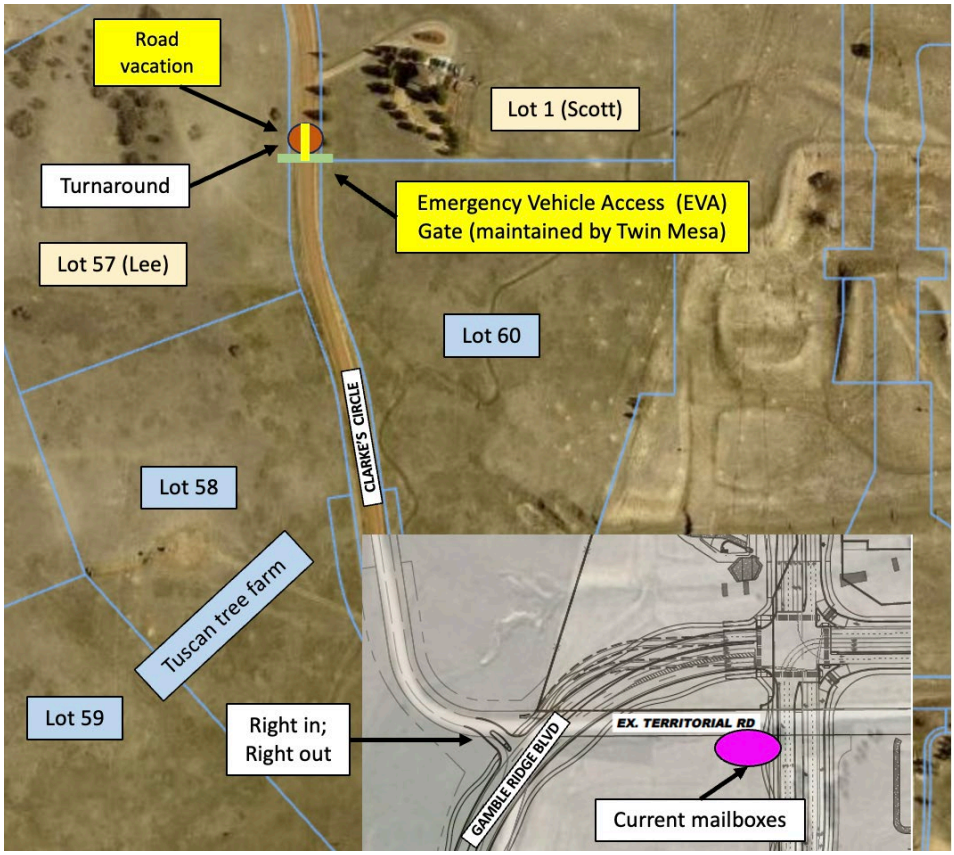


Exhibit E (cont)
Map of Improvements

The emergency vehicle gate will be located somewhere on Clarke's Circle.



Twin Mesa Metropolitan District
Exhibit E



Twin Mesa Metropolitan District
Exhibit E

HDSW24UL HEAVY-DUTY VARIABLE SPEED SWING GATE OPERATOR

SECTION 32 31 00



KEY FEATURES

BATTERY BACKUP	Yes
REMOTE CONTROL ACCESS	Security+ 2.0® 3-channel receiver will handle up to 50 remote controls (unlimited remotes with 811LMX/813LMX)
INTERNET CONNECTIVITY	myQ® connection and myQ capability for secure monitoring and control of gate operator from anywhere*
MONITORED SAFETY INPUTS	6 inputs (main and expansion board)
SOLAR-POWER CAPABILITIES	Yes
DIAGNOSTIC DISPLAY	LED diagnostic display
WIRELESS DUAL-GATE COMMUNICATION	Eliminates expensive conduit costs and unsightly driveway scars
DUAL-GATE CONTROL	Bi-part delay or synchronized close
FIRE DEPARTMENT COMPLIANT	Allows gate to auto open upon loss of AC power or battery depletion: includes manual release
LIMIT SETTING	Electronic
PROGRAMMABLE AUXILIARY RELAYS	4 programmable auxiliary relays accommodate more accessories such as warning lights/alarms
UNAUTHORIZED ACCESS PREVENTION	Can be programmed with anti-tailgate or quick close capabilities
HOMELINK® COMPATIBLE	Version 4 or higher

SPECIFICATIONS

OPERATOR SPEED	90-degree opening in 13-36 seconds
POWER	120/240VAC single phase
ACCESSORY POWER	24VDC 1 A max. output; switched and unswitched power
OPERATOR WEIGHT	249 lbs.
WARRANTY	5 years commercial, 7 years residential
TEMPERATURE SPECIFICATIONS	Without heater: -4°F (-20°C) to 140°F (60°C); with optional heater: -40°F (-40°C) to 140°F (60°C)
UL USAGE CLASSIFICATION	Class I, II, III and IV

CONSTRUCTION

MOTOR	24VDC brushless motor with soft start/stop
OPERATOR DUTY RATING	Continuous-duty
CHASSIS/FRAME	Constructed with 1/4 in. black powder coated steel for rust prevention
GEAR REDUCTION	Direct drive 1,600:1 gear ratio
COVER	High-density, UV-resistant polyethylene 2-piece cover for excellent heat and corrosion resistance
RECOMMENDED CAPACITIES	Rated for gates up to 22 ft. in length or weighing up to 2,800 lbs. Up to 4,500 lbs. with optional long arm at 14 ft. gate length

*When linked with myQ. Cellular data or Wi-Fi® connection required.

DATA SHEET
SWING GATE OPERATOR

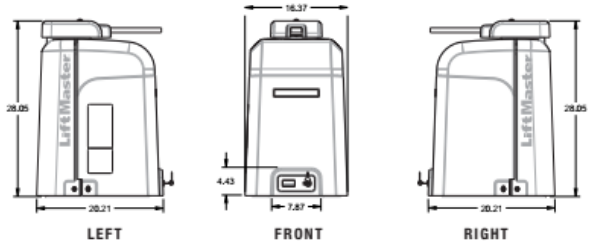
LiftMaster

Twin Mesa Metropolitan District
Exhibit E

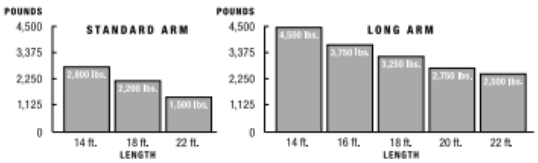
HDSW24UL HEAVY-DUTY VARIABLE SPEED SWING GATE OPERATOR

SECTION 32 31 00

DIMENSIONS



CAPACITY



© 2021 The Chamberlain Group LLC. All Rights Reserved.
LiftMaster, the LiftMaster logo, myQ® and the myQ® logo are registered trademarks of the Chamberlain Group LLC
LiftMaster.com
LMPAENDSHDSWMC21 12/21

LiftMaster

Twin Mesa Metropolitan District
Exhibit E

Exhibit F
Example Operating Budget

Estimated General Fund Budget

	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Beginning Funds Available	$ -	$ 982	$ 1,694	$ 88	$ 2,773	$ 3,757	$ 8,797	$ 5,031	$ 5,286	$ 2,568
Revenue										
Property Taxes	$ 74,881	$ 75,630	$ 76,386	$ 77,150	$ 77,922	$ 78,701	$ 50,342	$ 50,846	$ 51,354	$ 51,868
Specific Ownership Taxes	$ 3,744	$ 3,782	$ 3,819	$ 3,858	$ 3,896	$ 3,935	$ 2,517	$ 2,542	$ 2,568	$ 2,593
Developer Advances	$ 100,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Fees for Non-Resident Use	$ -	$ -	$ -	$ -	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000
Other Income	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Revenue	$ 178,625	$ 79,412	$ 80,206	$ 81,008	$ 82,818	$ 83,636	$ 53,860	$ 54,388	$ 54,922	$ 55,461
Total Funds Available	$ 178,625	$ 80,394	$ 81,899	$ 81,096	$ 85,591	$ 87,393	$ 62,656	$ 59,419	$ 60,208	$ 58,029
Expenditures										
P&L Insurance	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000
Dues (Special District Assoc)	$ 650	$ 650	$ 650	$ 650	$ 650	$ 650	$ 650	$ 650	$ 650	$ 650
Accounting Fees	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000	$ 12,000
Audit/Audit Exemption	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000
Legal Fees	$ 20,000	$ 15,000	$ 15,000	$ 15,000	$ 15,000	$ 15,000	$ 15,000	$ 15,000	$ 15,000	$ 15,000
District Organizing Fees (legal, surveys,etc)	$ 40,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Elections	$ 3,500	$ -	$ 3,500	$ -	$ 3,500	$ -	$ 3,500	$ -	$ 3,500	$ -
Road Maintenance & Snow Removal	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500
Supplies	$ 250	$ 250	$ 250	$ 250	$ 250	$ 500	$ 500	$ 500	$ 500	$ 500
Cellgate	$ 3,120	$ 3,120	$ 3,120	$ 3,120	$ 3,120	$ 3,120	$ 3,120	$ 3,120	$ 3,120	$ 3,120
Gate Maintenance & Deductible	$ -	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000
Gate Insurance	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000
Traffic Signs	$ -	$ 500	$ 100	$ 100	$ 100	$ 100	$ 100	$ 100	$ 100	$ 100
Repayment of Developer Advance (5 years)	$ -	$ 24,046	$ 24,046	$ 24,046	$ 24,046	$ 24,046				
County Treasurer's Fees	$ 1,123	$ 1,134	$ 1,146	$ 1,157	$ 1,169	$ 1,181	$ 755	$ 763	$ 770	$ 778
Transfer to Capital Reserve Fund	$ 89,500	$ 9,500	$ 9,500	$ 9,500	$ 9,500	$ 9,500	$ 9,500	$ 9,500	$ 9,500	$ 9,500
Total Expenditures	$ 177,643	$ 78,700	$ 81,811	$ 78,323	$ 81,834	$ 78,596	$ 57,625	$ 54,133	$ 57,640	$ 54,148
Ending Fund Balance	$ 982	$ 1,694	$ 88	$ 2,773	$ 3,757	$ 8,797	$ 5,031	$ 5,286	$ 2,568	$ 3,881
Net Change in Fund Balance	$ 982	$ 712	$ (1,606)	$ 2,685	$ 983	$ 5,040	$ (3,766)	$ 255	$ (2,718)	$ 1,313
Emergency Reserve	$ 5,329	$ 2,361	$ 2,454	$ 2,350	$ 2,455	$ 2,358	$ 1,729	$ 1,624	$ 1,729	$ 1,624
Ending Available Funds	$ 982	$ 1,694	$ 88	$ 2,773	$ 3,757	$ 8,797	$ 5,031	$ 5,286	$ 2,568	$ 3,881
Assessed Valuation	$ 9,984,170	$ 10,084,012	$ 10,184,852	$ 10,286,700	$ 10,389,567	$ 10,493,463	$ 10,598,398	$ 10,704,382	$ 10,811,425	$ 10,919,540
Mill Levy-General O&M	7.500	7.500	7.500	7.500	7.500	7.500	4.750	4.750	4.750	4.750
Capital Reserve Fund										
Beginning Fund Balance	0	$ 9,500	$ 19,000	$ 28,500	$ 38,000	$ 47,500	$ 57,000	$ 66,500	$ 76,000	$ 85,500
Transfers from Operating Fund	$ 89,500	$ 9,500	$ 9,500	$ 9,500	$ 9,500	$ 9,500	$ 9,500	$ 9,500	$ 9,500	$ 9,500
Capital Improvements (Gate)	$ 60,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 50,000
Road Improvements (turn arounds)	$ 20,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Ending Fund Balance	$ 9,500	$ 19,000	$ 28,500	$ 38,000	$ 47,500	$ 57,000	$ 66,500	$ 76,000	$ 85,500	$ 45,000

Twin Mesa Metropolitan District
Exhibit F

Exhibit G
Resolution of Approval

RESOLUTION NO. R-013- _____

THE BOARD OF COUNTY COMMISSIONERS

OF THE COUNTY OF DOUGLAS, COLORADO

A RESOLUTION APPROVING THE SERVICE PLAN OF

TWIN MESA METROPOLITAN DISTRICT

WHEREAS, on **[INSERT DATE]**, a service plan for the proposed **TWIN MESA METROPOLITAN DISTRICT** ("Service Plan") was filed with the Douglas County Clerk and Recorder ("Clerk"), and the Clerk, on behalf of the Board of County Commissioners ("Board"), mailed a Notice of Filing of Special District Service Plan to the Division of Local Government in the Department of Local Affairs on **[INSERT DATE]**; and

WHEREAS, on **[INSERT DATE]**, the Douglas County Planning Commission recommended approval of the Service Plan to the Board; and

WHEREAS, on **[INSERT DATE]**, the Board set a public hearing on the Service Plan for **[INSERT DATE]** ("Public Hearing"), and (1) ratified publication of the notice of the date, time, location and purpose of such Public Hearing, which was published in *The Douglas County News-Press* on **[INSERT DATE]**; and (2) caused notice of the date, time and location of the Public Hearing to be mailed on **[INSERT DATE]**, to the governing body of the existing municipalities and special districts which have levied an *ad valorem* tax within the next preceding tax year and which have boundaries within a radius of three miles of the proposed boundaries of **[INSERT NAME OF DISTRICT]** ("District") and, on **[INSERT DATE]**, to the petitioners and to the property owners, pursuant to the provisions of § 32-1-204(l.5), C.R.S.; and

WHEREAS, on **[INSERT DATE]**, a Public Hearing on the Service Plan was opened at which time all interested parties, as defined in § 32-1-204, C.R.S., were afforded an opportunity to be heard, and all testimony and evidence relevant to the Service Plan and the organization of the proposed District was heard, received and considered.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF THE COUNTY OF DOUGLAS, STATE OF COLORADO, THAT:

Section 1. The Board does hereby determine that all procedural requirements of §§ 32-1-201, *et seq.*, C.R.S., relating to the Service Plan have been fulfilled and that the Board has jurisdiction in the matter.

Section 2. The Board does hereby find:

(a) that there is sufficient existing and projected need for organized service in the area to be serviced by the proposed District; and

(b) that the existing service in the area to be served by the proposed District is inadequate for present and projected needs; and

(c) that the proposed District is capable of providing economical and sufficient service to the area within the proposed boundaries; and

(d) that the area to be included in the proposed District has, or will have, the financial ability to discharge the proposed indebtedness on a reasonable basis; and

(e) that adequate service is not, or will not be, available to the area through Douglas County or other existing municipal or quasi-municipal corporations, including existing special districts, within a reasonable time and on a comparable basis; and

(f) that the facility and service standards of the proposed District are compatible with the facility and service standards of Douglas County and each municipality which is an interested party under § 32-1-204, C.R.S.; and

(g) that the proposal is in substantial compliance with the Douglas County Comprehensive Master Plan; and

(h) that the proposal is in compliance with any duly adopted county, regional, or state long-range water quality management plan for the area; and

(i) that the creation of the proposed District will be in the best interests of the area proposed to be served; and

(j) that the Service Plan, based upon the statements set forth in the Service Plan and upon all evidence presented at the Public Hearing on the Service Plan, meets all conditions and requirements of §§ 32-1-201, *et seq.*, C.R.S.

Section 3. The Board hereby approves the Service Plan without conditions; provided, however, that such action shall not imply the approval of any land development activity within the proposed District or its service area, or of any specific number of buildable units identified in the Service Plan, unless the Board has approved such development activity as part of a separate development review process.

Section 4. The legal description of the District shall be as provided in **Exhibit A**, attached hereto and incorporated herein by reference.

Section 5. A certified copy of this resolution shall be filed in the records of Douglas County.

PASSED AND ADOPTED this ___ day of _____, 202__, in Castle Rock,

Douglas County, Colorado.

Twin Mesa Metropolitan District
Exhibit G

THE BOARD OF COUNTY COMMISSIONERS OF THE COUNTY OF DOUGLAS, COLORADO

BY: _____

, Chair

ATTEST:

_____
Deputy Clerk

Twin Mesa Metropolitan District
Exhibit G

EXHIBIT A TO RESOLUTION NO. R-013- _____

(Legal Description)

Twin Mesa Metropolitan District
Exhibit H

Exhibit H
Compliance with Section 18A, Water Supply

The District does not require water service from any water provider nor is any water supply plan required for the District, pursuant to Section 18A, Water Supply – Overlay District, of the Douglas County Zoning Resolution, as amended. The District will not provide any water services and neither owns nor controls any water rights. The existence, operation and maintenance of the District will have no demand for water, and the District does not require any commitment from any person to provide water.

(1) No Will-Serve letter is required.

(2) No Water Supply Plan is required.

Exhibit I
Compliance with Colorado Department of Public Health and Environment Requirements

NOT APPLICABLE

The Regional Clean Water Plan is not applicable to Twin Mesa Metropolitan District and therefore neither Colorado Department of Public Health and Environment requirements nor any other wastewater treatment provider is required to issue a compliance letter in connection therewith.

Exhibit J
Advance and Reimbursement Agreement

The form of proposed reimbursement agreement between the District and the Petitioners and/or others who will provide funding for capital expenditures, operational expenses, and organizational costs in lieu of the District issuing debt or receiving sufficient ad valorem property taxes for operations and maintenance is included below.

ADVANCE AND REIMBURSEMENT AGREEMENT
BY AND BETWEEN
TWIN MESA METROPOLITAN DISTRICT
AND
_____

This **ADVANCE AND REIMBURSEMENT AGREEMENT** (the "Agreement") is entered into as of _____, 20__ (the "Effective Date") by and between Twin Mesa Metropolitan District, a quasi-municipal corporation and political subdivision of the State of Colorado (the "District") and _____, (the "Lender"), individually referred to herein as the "Party" and collectively referred to herein as the "Parties".

RECITALS

WHEREAS, the District was organized pursuant to the Special District Act, § 32-1-101, *et seq*., C.R.S., as amended, for the purpose of providing certain public improvements, facilities and services to and for the use and benefit of the District, its residents, users, property owners and the public; and

WHEREAS, pursuant to § 32-1-1001(1)(d)(I), C.R.S., as amended, the Board of Directors of the District (the "Board") is empowered to enter into contracts and agreements affecting the affairs of the District; and

WHEREAS, the District and Lender agree that the advance of funds to the District, or on behalf of the District, for operation and maintenance costs of the District, including, but not limited to, legal, accounting, design, engineering and management costs, and for capital costs associated with certain public improvements, facilities and equipment (the "Advance(s)") is consistent with the public objects and purpose of the District; and

WHEREAS, the Board has determined that the best interests of the District, its residents, users, property owners and the public will be served by the District's receipt of and benefit from the Advances; and

WHEREAS, the Board has determined that the best interests of the District, its residents, users, property owners and the public will be served by the District's acknowledgement of the Advances; and

WHEREAS, the District and Lender desire to enter into this Agreement setting forth their understanding with respect to the Advances and the reimbursement therefor.

NOW, THEREFORE, in consideration of the mutual covenants set forth herein, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties hereto agree as follows:

TERMS AND CONDITIONS

1. PURPOSE. The purpose of this Agreement is to establish the terms and conditions pursuant to which Lender makes the Advances to the District and the District makes reimbursement to Lender for the Advances.

2. ADVANCES. Upon application therefor by the Board, Lender may provide Advances to the District, on terms as may be mutually agreed upon by the Parties, for use by the District for operations and maintenance purposes and for capital projects for public improvements. Upon the request of Lender, the District shall provide substantiation of the need for such Advances. Upon the request of the District, Lender shall provide documentation to the District evidencing the total amount of any Advances claimed owed to Lender, which may include, without limitation, invoices, check registries, cancelled checks, and bank statements.

3. REIMBURSEMENT. The District shall reimburse Lender for the Advances, together with non-compounding per annum interest on such sums advanced at an interest rate not exceed the Bond Buyer 20-Bond GO Index plus four percent (4%). Interest shall accrue as of the date each Advance is made to the District; provided, however, that no interest shall begin to accrue on any Advance made to the District prior to the date on which the District was officially formed. The District shall make payment for the Advances, subject to annual appropriation and budget approval, from funds available within any fiscal year and not otherwise required for operations, and capital improvements. Lender understands and acknowledges that the District's obligation to reimburse Lender under this Agreement is not a multiple fiscal year obligation. Payments by the District shall be applied first to interest on, then to principal of the Advances in chronological order to their effective date. Notwithstanding the foregoing, Lender acknowledges and agrees that any Advance amount, together with interest thereon, not reimbursed within five (5) years following the date on which Lender made such Advance shall be deemed to be paid in full and forever discharged on the fifth anniversary of such Advance, notwithstanding any unpaid amounts remaining on any subsequent Advances made by Lender.

4. ACCOUNTING OF FUNDING. Whenever Lender makes an Advance to the District, the Parties shall record the same on the Outstanding Advance & Reimbursement Payment Obligations agreement (the "Outstanding Obligations Agreement"), a form of which is attached hereto as **Exhibit A** and incorporated herein by this reference. The Parties will make reasonable efforts to execute the Outstanding Obligations Agreement between January 1st and January 31st of each year throughout the term of this Agreement; notwithstanding the foregoing, the failure of the Parties to mutually execute the Outstanding Obligations Agreement in any year or years shall not nullify or waive any accrued Advances. Further, the District shall direct its accountant to account for any Advances in such fashion that the amounts thereof shall be readily ascertainable as to principal of and total amounts outstanding, and Lender may request an inspection of the accounting of such funds.

5. TERM OF AGREEMENT. This Agreement shall commence on the date of the first Advance made from Lender to the District, and shall terminate five (5) years after the last Advance made by Lender hereunder.

6. NOTICES. Any notices, demands or other communications required or permitted to be given, shall be given in writing, delivered personally or sent by U.S. Mail, addressed to the Parties at the addresses set forth below or at such other address as either Party may hereafter or from time to time designate by written notice to the other Party given in accordance herewith.

To the District:

Twin Mesa Metropolitan District
c/o Law Office of Michael E. Davis, LLC
1151 Eagle Drive, Suite 366
Loveland, Colorado 80537
Attn: Michael E. Davis

With a copy to:

Law Office of Michael E. Davis, LLC
c/o Law Office of Michael E. Davis, LLC
1151 Eagle Drive, Suite 366
Loveland, Colorado 80537

To Lender:

_____
_____
_____

7. ASSIGNMENT AND DELEGATION. The rights, or any parts thereof, granted to the Parties herein may be assigned only with the prior written consent of the non-assigning Party, which consent shall not be unreasonably withheld. The obligations, or any parts thereof, of the Parties may not be delegated to any third party without the prior written consent of the non-delegating Party, which consent shall not be unreasonably withheld.

8. NO THIRD-PARTY BENEFICIARIES. It is expressly understood and agreed that enforcement of the terms and conditions of this Agreement, and all rights of action relating to such enforcement, shall be strictly reserved to the Parties and nothing contained in this Agreement shall give or allow any such claim or right of action by any other third party on such Agreement. It is the express intention of the Parties that any person other than Parties receiving services or benefits under this Agreement shall be deemed to be an incidental beneficiary only.

9. AMENDMENT AND MODIFICATION. This Agreement may be amended or modified only in writing signed by both Parties.

10. BINDING EFFECT. This Agreement shall inure to and be binding on the heirs, executors, administrators, successors and assigns of the Parties hereto.

11. ENTIRE AGREEMENT. This Agreement constitutes the entire agreement between the Parties relating to the Advances and reimbursement therefor and sets forth the rights, duties and obligations of each Party to the other as of this date. Any prior agreements, promises, negotiations or representations not expressly set forth in this Agreement are of no force and effect. This Agreement may not be modified except by a writing executed by the Parties.

12. SEVERABILITY. If any provision of this Agreement is determined to be unenforceable or invalid, the unenforceable or invalid part shall be deemed severed from this Agreement, and the remaining portions of this Agreement shall be carried out with the same force as if the severed portions had not been part of this Agreement, provided that the Parties both agree that the severed provision does not alter the intent and/or purpose of the Agreement.

13. CONTROLLING LAW. This Agreement shall be governed by and construed in accordance with the laws of the State of Colorado and exclusive jurisdiction and venue shall lie in the District Court within which the boundaries of the District are located.

14. NO WAIVER. No waiver of any of the provisions of this Agreement shall be deemed to constitute a waiver of any other provisions of this Agreement, nor shall such waiver constitute a continuing waiver unless otherwise expressly provided herein, nor shall the waiver of any default hereunder be deemed a waiver of any subsequent default hereunder.

15. GOVERNMENTAL IMMUNITY. Nothing herein shall be construed as a waiver of the rights and privileges of the District pursuant to the Colorado Governmental Immunity Act, §§ 24-10-101, *et seq*., C.R.S., as amended from time to time.

Twin Mesa Metropolitan District
Exhibit J

16. CONDITION SUBSEQUENT. It shall be a condition subsequent to this Agreement that, to the extent necessary, it be submitted to the Securities Commissioners pursuant to the requirements of the Colorado Municipal Bond Supervision Act, §11-59-101, C.R.S., as amended, (the "Act"), and that it receive an exemption or other clearance from the registration requirements of the Act pursuant to §11-59-110, C.R.S., as amended.

17. COUNTERPART EXECUTION. This Agreement may be executed in several counterparts, each of which shall be deemed an original, and all of which together shall constitute one and the same instrument.

[Remainder of page intentionally left blank]

Twin Mesa Metropolitan District
Exhibit J

IN WITNESS WHEREOF, the Parties have caused this Agreement to be duly executed and delivered by their respective officers thereunto duly authorized as of the date first above written.

TWIN MESA METROPOLITAN DISTRICT

_____

_____, President

ATTEST:

_____

_____, Secretary/Treasurer

LENDER

_____

Printed Name: _____

Twin Mesa Metropolitan District
Exhibit J

EXHIBIT A
Outstanding Advance & Reimbursement Obligation Form

OUTSTANDING ADVANCE & REIMBURSABLE PAYMENT OBLIGATIONS

In accordance with Paragraph 4 of the *Advance and Reimbursement Agreement*, dated _____, 20__, the Parties agree that the information set forth below represents the outstanding Advance obligations between the Parties as of the date indicated.

DATE: _____ _____, 20___

ADVANCE:

Advance made by Lender as of the above date: $_____

Bond Buyer 20-Bond GO Index, Plus 4.0%
at time of the Advance: _____ + 4.0% = _____ %

Total current outstanding Advance balance: $_____

TWIN MESA METROPOLITAN DISTRICT

_____
By: _____
Its: President

ATTEST:

_____
By: _____
Its: Secretary/Treasurer

LENDER

_____
Printed Name: _____

Twin Mesa Metropolitan District
Exhibit J

Exhibit K
District Court Decree

DIRECTIONS:

This exhibit shall include a copy of the recorded district court decree certifying the election and organizing the District.

Twin Mesa Metropolitan District
Exhibit K

From: Matt Williams
To: Lauren Pulver
Subject: FW: Twin Mesa: Proposed language Re Tolls
Date: Thursday, April 11, 2024 3:37:43 PM
Attachments: 240411 Twin Mesa Metro District Service Plan (Rev 6 clean).docx
240411 Twin Mesa Metro District Service Plan (Rev5 to Rev 6 redline).docx
240411 Twin Mesa Metro District Service Plan (Model to Rev6 redline).docx

---

Lauren,
The changes made to the service plan address any outstanding comments I had.

Thanks,
Matt

From: Michael Davis <michael@mdavislawoffice.com>
Sent: Thursday, April 11, 2024 3:33 PM
To: Lauren Pulver <lpulver@douglas.co.us>
Cc: Matt Williams <MWillia1@douglas.co.us>; Damian Cox <damian@coxrelaw.com>; Christopher Pratt <cpratt@douglas.co.us>; Kati Carter <KCarter@douglas.co.us>; Michael Davis <michael@mdavislawoffice.com>
Subject: RE: Twin Mesa: Proposed language Re Tolls

Hi Lauren,

Attached is the revised service plan in clean form, as well as redlined to the prior revision and redlined to the County's model service plan. You'll see in the redline to the prior revision that the only changes we made are:

- Date on the cover page
- Eliminated the references to the County in the last sentence of the third paragraph in Section V.
- In the 2nd paragraph of Section IX.A(2), we added the requested "guardrails" for fees (not tolls), if any
- In Section XI.C we revised the "fee" language to be consistent with Section IX.A(2)
- Struck the word "tolls" throughout.

Thank you (and thanks to your team) for working through these issues with us. This is new territory for all of us, so the dialog and collaboration was very helpful.

Let us know if you need anything else, or if you have any questions.



LAW OFFICE OF MICHAEL E. DAVIS, LLC

From: Damian Cox
To: Lauren Pulver
Cc: Michael Davis - Law office (michael@mdavislawoffice.com)
Subject: RE: Dawson Trails Traffic Study
Date: Wednesday, April 10, 2024 3:18:00 PM

Hi Lauren.

Last year, the opposition made a lot of comments about how the traffic study showed no impact on our neighborhoods. When we pointed out their statements were untrue, the Planning Commission, rightfully, properly pointed out that we had not provided the traffic studies. That is why both full studies were provided this time. That said, the relevant information in the Dawson Trails Master Transportation Study is as follows:

1. Page 6 (as well as others) – states that the Dawson Trails development is expected to generate 87,025 trips per day.
2. Page 10 speaks to the project description and is relevant regarding the massive scope of this project.
3. Page 14 confirms that the traffic on Territorial (which is the road that currently accesses Twin Oaks Road from the frontage road) currently only averages 370 trips per day.
4. Page 66 is a diagram detailing the traffic to/from west neighborhoods. This states "<1%" which is referring to the 87,025 trips per day, but is unclear as to the actual amount of trips per day increase.
5. I also provided an email from Larry Jacobson dated 6-19-23 to clarify that the traffic impact from the Dawson Trails development alone will be an increase of 175 cars per day through Twin Oaks Road and Peak View Drive.

Also, page 4 of the Traffic Forecast Report by Jacobs states that the impact caused by the completion of the Crystal Vally Interchange alone will be another 200 trips a day on Twin Oaks Road and Peak View Drive.

Please let me know if you need any further clarification.

Thank you.

Damian Cox, Esq.
Cox Law Firm, LLC
718 Wilcox Street
Castle Rock, CO 80104
damian@coxrelaw.com
w) (303) 688-1550

NOTICE:
The information contained in this electronic mail message may be attorney privileged or attorney work product, and may be confidential information intended only for the use of the individual or entity named above. If you are not the intended

Dawson Trails
Master Transportation Study



PREVIOUS SUBMITTAL DATES: July 7 & December 6, 2021;
April 14 & May 25, 2022

UPDATED DATE: June 7, 2022

PREPARED FOR:
Dawson Trails I LLC
Dawson Trails II LLC
Westside Property Investment Company, Inc.
4100 East Mississippi Avenue - Suite 500
Denver, CO 80246

PREPARED BY:
Fox Tuttle Transportation Group, LLC
1624 Market Street, Suite 202
Denver, CO 80202

Dawson Trails Traffic Impact Study
Updates from Previous Submittal – Change Log:

Preface: This report represents version #5 of the Dawson Trails Master Traffic Study. The following is a log of updates that were incorporated into this report based on the comments received from the Town of Castle Rock:

1. Updated Crystal Valley Boulevard at Dawson Trails Boulevard/Prairie Hawk Drive (Intersection #7) with a signal in the 2025 background and 2030 background scenarios.
2. Fixed typos within the level of service tables for the NB ramp intersection on Plum Creek Parkway (Intersection #9).
3. Based on the listed changes, the volumes were volumes throughout the study intersections and the analysis, tables, figures, and report was updated accordingly.

TABLE OF CONTENTS

Executive Summary ..... v - vii

1.0 Introduction 1

2.0 Project Description 2

3.0 Study Considerations 3

3.1 Data Collection 3

3.2 Evaluation Methodology 3

3.3 Level of Service Capacity Analysis 3

4.0 Existing Conditions 4

4.1 Roadways 4

4.2 Intersections 6

4.3 Pedestrian and Bicycle 7

4.4 Transit 7

4.5 Year 2021 Existing Intersection Capacity Analysis 7

5.0 Future Conditions 9

5.1 Annual Growth Factor and Future Volume Methodology 9

5.2 Year 2025 Anticipated Transportation Network 11

5.3 Year 2025 Background Intersection Capacity Analysis 13

5.4 Year 2030 Planned Transportation Network 14

5.5 Year 2030 Background Intersection Capacity Analysis 15

5.6 Year 2040 Planned Transportation Network 17

5.7 Year 2040 Background Intersection Capacity Analysis 17

6.0 Future Conditions with the Dawson Trails Development 18

6.1 Trip Generation 19

6.2 Trip Distribution and Assignment 23

6.3 Proposed Roadway Network and Access 24

6.4 Proposed Pedestrian and Bicyclist Facilities 28

6.5 Proposed Mobility Hub 28

6.6 Year 2025 Background + Project (Phase 1) Intersection Capacity Analysis 28

6.7 Year 2030 Background + Project (Phase 1 & 2) Intersection Capacity Analysis 30

Twin Mesa Metropolitan District New Service Plan
SV2023-003
Planning Commission Supplemental Memo Page 99 of 1222

6.8 Year 2040 Background + Project (Phases 1 & 2 & 3) Intersection Capacity Analysis31

7.0 Queuing Analysis 33

8.0 Dawson Trails Boulevard Access Plan 34

9.0 Conclusions 35

LIST OF TABLES

Table 1 – Existing Overall Level of Service Summary 8
Table 2 – Peak Hour Intersection LOS Summary for Existing Intersections 37-39
Table 3 – Year 2025 Background Overall Level of Service Summary 13
Table 4 – Year 2030 Background Overall Level of Service Summary 16
Table 5 – Year 2040 Background Overall Level of Service Summary 18
Table 6A – Trip Generation (External) 40-41
Table 6B – Trip Generation (Internal) 42
Table 7 – Land Use Assumptions per Phase 22
Table 8 – Trip Distribution Summary 23
Table 9 – Year 2025 Background + Project (Phase 1) Overall Level of Service Summary 29
Table 10 – Peak Hour Intersection LOS Summary for Proposed Accesses 43
Table 11 – Year 2030 Background + Project (Phase 1 & 2) Overall Level of Service Summary 30-31
Table 12 – Year 2040 Background + Project (Full Buildout) Overall Level of Service Summary 32
Table 13 – Peak Hour Estimated Queue Lengths 44-47

LIST OF FIGURES

Figure 1 – Vicinity Map 48
Figure 2 – Proposed Site Access and Phasing 49
Figure 3A – Year 2021 Existing Traffic Volumes 50
Figure 3B – Year 2021 Existing Traffic Volumes (continued) 51
Figure 4A – Year 2025 Background Traffic Volumes 52
Figure 4B – Year 2025 Background Traffic Volumes (continued) 53
Figure 5A – Year 2030 Background Traffic Volumes 54
Figure 5B – Year 2030 Background Traffic Volumes (continued) 55
Figure 6A – Year 2040 Background Traffic Volumes 56

Figure 6B – Year 2040 Background Traffic Volumes (continued) 57
Figure 7 – Site Trip Distribution 58
Figure 8A – Phase 1 Site-Generated Traffic Volumes [Existing Intersections] 59
Figure 8B – Phase 1 Site-Generated Traffic Volumes [Existing Int. continued] 60
Figure 8C – Phase 1 Site-Generated Traffic Volumes [Access and Internal Intersections] 61
Figure 9A – Phase 1 & 2 Site-Generated Traffic Volumes [Existing Intersections] 62
Figure 9B – Phase 1 & 2 Site-Generated Traffic Volumes [Existing Int. continued] 63
Figure 9C – Phase 1 & 2 Site-Generated Traffic Volumes [Access and Internal Intersections] 64
Figure 10A – Full Buildout Site-Generated Traffic Volumes [Existing Intersections] 65
Figure 10B – Full Buildout Site-Generated Traffic Volumes [Existing Int. continued] 66
Figure 10C – Full Buildout Site-Generated Traffic Volumes [Access and Internal Intersections] 67
Figure 11A – Year 2025 Background + Phase 1 Traffic Volumes [Existing Intersections] 68
Figure 11B – Year 2025 Background + Phase 1 Traffic Volumes [Existing Int. continued] 69
Figure 11C – Year 2025 Background + Phase 1 Traffic Volumes [Access and Internal Accesses] 70
Figure 12A – Year 2030 Background + Phase 1 & 2 Traffic Volumes [Existing Intersections] 71
Figure 12B – Year 2030 Background + Phase 1 & 2 Traffic Volumes [Existing Int. continued] 72
Figure 12C – Year 2030 Background + Phase 1 & 2 Traffic Volumes [Access and Internal Accesses] 73
Figure 13A – Year 2040 Background + Full Buildout Traffic Volumes [Existing Intersections] 74
Figure 13B – Year 2040 Background + Full Buildout Traffic Volumes [Existing Int. continued] 75
Figure 13C – Year 2040 Background + Full Buildout Traffic Volumes [Access and Internal Accesses] 76
Figure 14A – Intersection Geometry and Traffic Control (per Year and Phase) 77
Figure 14B – Phasing of Roadway Improvements 78
Figure 15 – Full Buildout Roadway Classification and Phasing 79
Figure 16 – Proposed Full Movement Intersection Spacing 80

APPENDIX

Level of Service Definitions
Existing Traffic Data
Intersection Capacity Worksheets
Signal Warrant Analysis
Internal Trips Calculations

Executive Summary

The purpose of this traffic study is to evaluate potential traffic impacts and mobility connectivity within and around the proposed Dawson Trails development in Castle Rock, CO. The project site is generally bounded by Interstate 25 (I-25) to the east, Yucca Hills Road to the north, Twin Oaks neighborhood to the west, and approximately Colt Circle to the south.

It is anticipated that Dawson Trails will be developed over time and for the purpose of this traffic study, three phases were assumed to understand the roadway infrastructure needs and approximate timeline of need.

The first phase of the proposed development is anticipated to be completed in Year 2025 and includes approximately 500 residential dwelling units and 180,000 square feet of general commercial/retail space. The second phase of Dawson Trails is anticipated to be completed by Year 2030 and includes 3,100 residential dwelling units, 1,600,000 square feet of general commercial/retail/light industrial/flex space, and an elementary school with up to 450 students. The full build out is anticipated to be completed by Year 2040 and includes 2,250 residential dwelling units, 1,420,000 square feet of general commercial/retail/light industrial/flex space, an elementary school with up to 450 students, a high school with up to 2,000 students, a community facility (such as a recreation center or ice skating arena), and regional park. This totals to 5,850 dwelling units and approximately 3.2 million square feet of commercial space (mix of retail, flex, office, or light industrial).

Accounting for anticipated non-single occupancy vehicle (non-SOV) trips and internal capture trip reduction, and home-based trips internal to the property, the full build out of the project site is estimated to generate approximately 87,025 daily, 6,700 AM peak hour trips, 8,760 PM peak hour trips, and 8,385 Saturday midday peak hour trips. It was estimated that the external trips (those that begin or end outside of Dawson Trails) would be approximately 61,455 daily trips with about 4,250 trips occurring in the AM peak hour, 6,220 trips occurring in the PM peak hour, and 5,900 trips in the Saturday midday peak hour at full build-out (new and pass-by trips). The internal trips (those that remain within Dawson Trails, do not utilize the interchange or external roadways) were estimated to be approximately 25,570 daily trips, 2,450 trips in the AM peak hour, 2,540 trips in the PM peak hour, and 2,480 trips in the Saturday peak hour.

Current Study Area Traffic Conditions

All of the study intersections currently operate overall at LOS D or better in the AM, PM, and Saturday midday peak hours, with two intersections on Plum Creek Parkway having one turning movement operating at LOS E/F in a peak period that could be improved with signal timing adjustments.

Twin Mesa Metropolitan District New Service Plan
SV2023-003
Planning Commission Supplemental Memo Page 102 of 1222

Short-Term Improvements (Year 2025)

To address the expected issues at the study intersections, the improvements listed below are recommended to accommodate the background traffic growth and project development trips anticipated to be completed by Year 2025.

- **Crystal Valley Interchange** – Extend Crystal Valley Parkway west over I-25 and the railroad tracks. Provide a full-movement interchange with I-25. **
- **West Frontage Road** – Remove through Dawson Trails boundaries to accommodate the Crystal Valley interchange and tie back into existing alignment where appropriate.
- **Prairie Hawk Drive Extension (named Dawson Trails Boulevard south of Plum Creek Parkway) –** Construct through Dawson Trails and up to Plum Creek Parkway (one lane per direction in interim).
- **East Frontage Road** – Realign to accommodate the Crystal Valley interchange and tie back into existing alignment where appropriate. **
- **West Frontage Road and Territorial Road (future Dawson Trails Boulevard at Crystal Valley Parkway)** – With the Crystal Valley Interchange, relocate this intersection to the ultimate location to the west.**
    - Provide westbound, northbound, and southbound approaches with one left-turn lane, one through lane, and one right-turn lane; and the eastbound approach with one left-turn lane and one through/right-turn lane. The westbound and northbound right-turns are proposed to be channelized and free. **
    - With Phase 1 of the development signalize this intersection.
    - It is understood that this intersection will be constructed to the ultimate width on all approaches. This study assumes that the unnecessary lanes will we striped out and not utilized until volumes warrant the need for use.
- **East Frontage Road and Crystal Valley Parkway** – With the Crystal Valley Interchange, relocate this intersection to the ultimate location and roundabout design with the I-25 northbound off-ramp.**
- **Crystal Valley Parkway at Plum Creek Boulevard** – Roundabout being constructed by the Town of Castle Rock in Year 2023.
- **Territorial Road at Twin Oaks Road / Clarkes Circle** – Relocate intersections with the construction of the new internal Collector A. At Twin Oaks Road and Collector A, it is proposed that the northbound left-turn be restricted to reduce traffic through the rural community.

- **New Roadway Infrastructure** – Construct segments of the internal collector roadway network to serve the Phase 1 traffic.
    - **Collector Intersections along Dawson Trails Boulevard –** Proposed as multi-lane roundabouts. The proposed access north of Crystal Valley Parkway will be a ¾ movement intersection with side-street stop-control.

*** Indicates an improvement that was also recommended under Year 2025 background conditions (without the project).*

Mid-Term Improvements (Year 2030)

To address the anticipated circulation needs at the study intersections, the improvements listed below are recommended to accommodate the background traffic growth and project development trips projected to be completed by Year 2030.

- **Crystal Valley Parkway at Dawson Trails Boulevard** – Provide the following additional lanes: second eastbound though lane, eastbound right-turn lane, second westbound left-turn lane, second northbound and southbound through lanes, second southbound left-turn lane.
- **Prairie Hawk Drive Extension (named Dawson Trails Boulevard south of Plum Creek Parkway)** – Widen roadway to ultimate cross-section with four-lanes (two per direction).
- **Collector Intersections along Dawson Trails Boulevard –** Proposed as multi-lane roundabouts.

Long-Term Improvements (Year 2040)

The Town of Castle Rock's *Transportation Master Plan* recommends building more roadway capacity and complete streets citywide. The Dawson Trails project team recommends providing enhanced designs with acceptable operations for streets and intersections that provide safe and accessible facilities for all users, regardless of ability, age, or mode.

To accommodate the background growth and trips generated by the full buildout of the Dawson Trails development in Year 2040, the following capacity improvements are expected to be needed:

- **Crystal Valley Parkway at Dawson Trails Boulevard** – Add the third westbound left-turn lane and receiving lane and second westbound through lane.
- **Prairie Hawk Drive Extension (named Dawson Trails Boulevard south of Plum Creek Parkway)** – Widen roadway to six-lanes (three per direction) between Crystal Valley Boulevard and Intersection #105. Roundabouts will remain two circulating lanes with right-turn bypass lanes.
- **Collector Intersections along Dawson Trails Boulevard –** Proposed as multi-lane roundabouts.

A summary of the recommended improvements and estimated year the improvement is shown on **Figure 14A and Figure 14B.**

DAWSON TRAILS

MASTER TRANSPORTATION STUDY

1.0 Introduction

The Fox Tuttle Transportation Group has prepared this traffic impact study for the development of 2,063± acres located on the south end of Castle Rock, Colorado. The Dawson Trails project is located west of I-25 and the West Frontage Road and extends north and south of Territorial Road. The property will be developed over time with the first phase planned to be completed within the next five years and future phases occurring over 15+ years. Dawson Trails is proposed to have a mix of land uses including residential, commercial, office, light industrial, schools, and recreation. **Figure 1** provides a vicinity map for the proposed project.

The purpose of this study is to assist in identifying potential traffic impacts within the study area as a result of this project. The traffic study addresses existing, short-term (Year 2025), mid-term (Year 2030), and long-term (Year 2040) peak hour intersection conditions in the study area with and without the project-generated traffic. The information contained in this study is anticipated to be used by the Town of Castle Rock staff in identifying any intersection or roadway deficiencies and potential improvements for the build-out condition and future scenarios. This study focused on the weekday AM and PM, and Saturday midday peak hours which represents the periods of highest trip generation for the proposed uses and adjacent street traffic. The study is consistent with the requirements of the Town of Castle Rock's *Transportation Design Criteria Manual (2018)*. The following supporting documents were reviewed and incorporated into this analysis as appropriate:

- *Town of Castle Rock Transportation Master Plan*. Felsburg Holt & Ullevig. October 2017.
- Westfield Trade Center Planned Development documentation from 1989 to the present.
- Right-of Way Plans and Conceptual Designs for the planned Crystal Valley Parkway Interchange.
- Conceptual alignment and plans for future extension of Prairie Hawk Drive.

Twin Mesa Metropolitan District New Service Plan
SV2023-003
Planning Commission Supplemental Memo Page 105 of 1222

2.0 Project Description

The Dawson Trails site is currently vacant land that is located on the west side of I-25 and adjacent to the Twin Oaks neighborhood. The proposed land use plan includes commercial, residential, and civic land uses. For the purpose of this traffic study it was assumed that the site plan will include up to:

- 5,850 residential dwelling units (DU)
- 900,000 sq. ft. of retail
- 800,000 sq. ft. of general office building
- 1,125,000 square feet (sq. ft.) of flex space (a mix of light industrial and office)
- 375,000 sq. ft. of light industrial
- Two Elementary Schools (up to 450 students each)
- One High School (up to 2,000 students)
- One Community Facility (such as Ice Arena or Recreation Center)
- One Regional Park and Several Neighborhood Parks

Note that these land uses represent one of many scenarios that could occur based on market dynamics and represent a reasonable baseline assumption for determining traffic impacts of the site at a master plan level. It is anticipated that this report evaluates the highest density of homes, commercial, office, and industrial spaces that could be built within Dawson Trails. In addition, the study assumes a similar development type in the Westfield parcel adjacent to northwest corner of the project property which is excluded from current total project acreage.

For the purpose of this traffic study, the first phase of Dawson Trails is assumed to be completed and occupied by Year 2025, the second phase is assumed to be completed by Year 2030, and the final phase is anticipated to be completed by Year 2040. The project proposes to have access on the future extension of Prairie Hawk Drive (named Dawson Trails Boulevard through the project) and construct several collector roadways for internal circulation and mobility for all road users. Other local streets will be constructed to provide the most beneficial access into and around each of the planning areas. The land uses, phasing, and access plan are provided on **Figure 2**.

Twin Mesa Metropolitan District New Service Plan
SV2023-003
Planning Commission Supplemental Memo Page 106 of 1222

3.0 Study Considerations

3.1 Data Collection

Intersection turning movement volumes were collected in April 2021 at seven (7) existing intersections and along five (5) roadway segments. The intersection turning movement counts were collected during the weekday AM and PM peak hours, as well as the Saturday midday peak hour, including pedestrians and bicyclists. Historic daily volumes were gathered from the Colorado Department of Transportation's (CDOT) Transportation Data Management System (TDMS) and forecasts were gathered from the *Town of Castle Rock Transportation Master Plan (2017)*. The two intersections on Plum Creek Parkway at the I-25 interchange were counted as part of the Miller's Landing project in March 2019 and utilized in this project analysis.

The existing traffic volumes are illustrated on **Figure 3A** and **Figure 3B**. The existing intersection geometry and traffic control are also shown on this figure. Signal-related information for the existing signalized intersections along Plum Creek Parkway were provided by the Town of Castle Rock and utilized within the analysis. Count data sheets are provided in the **Appendix**.

3.2 Evaluation Methodology

The traffic operations analysis addressed the signalized and unsignalized intersection operations using the procedures and methodologies set forth by the *Highway Capacity Manual (HCM)*[1]. Existing Peak Hour Factors (PHF) were applied to the intersections for the existing, while PHFs were increased for future scenarios per *HCM* recommendations. Study intersections were evaluated using Synchro software (v10). The proposed roundabout intersections were evaluated with Sidra software.

3.3 Level of Service Capacity Analysis

A Level of Service analysis was conducted to determine the existing and future performance of the study area intersections and accesses to determine the most appropriate intersection traffic controls and auxiliary lanes for future conditions.

To measure and describe the operational status of the study intersections, transportation engineers and planners commonly use a grading system referred to as "Level of Service" (LOS) that is defined by the *HCM*. LOS characterizes the operational conditions of an intersections traffic flow, ranging from LOS A

[1] *Highway Capacity Manual*, Highway Research Board Special Report 209, Transportation Research Board, National Research Council, 6th Edition (2016).

(indicating very good, free flow operations) and LOS F (indicating congested and sometimes oversaturated conditions). These grades represent the perspective of drivers and are an indication of the comfort and convenience associated with traveling through the intersections. The intersection LOS is represented as a delay in seconds per vehicle for the intersection as a whole and for each turning movement.

Based on the Town's *Transportation Design Criteria Manual (2018)*, the minimum acceptable level of service is LOS D. No through movement shall operate below LOS D and no left-turn movement shall operate below LOS E or have queues blocking the adjacent through lane. If a study intersection currently does not meet this Town's standard, then the project impact cannot degrade the intersection further without appropriate mitigation measures to keep the performance at the intersection similar to existing operations.

Criteria contained in the *HCM* was applied for these analyses in order to determine peak hour LOS for each scenario. A more detailed discussion of LOS methodology is contained in the **Appendix** for reference.

4.0 Existing Conditions

4.1 Roadways

The study area boundaries are based on the amount of traffic to be generated by the project and potential impact to the existing roadway network. The primary public roadways that serve the project are discussed in the following text and illustrated on **Figure 1**.

Interstate 25 (I-25) is a north-south freeway (CDOT classification of F-W) that travels the length of Colorado from Wyoming to New Mexico. I-25 provides regional and local access through the Front Range, including connecting the Town of Castle Rock to Denver to the north and Colorado Springs to the south. CDOT was recently widened I-25 between Castle Rock and Monument to include one managed, express toll lane to supplement the existing two travel lanes per direction and wider shoulders for safety purposes. The posted speed limit is 75 miles per hour (mph). I-25 services approximately 75,000 to 85,000 vehicles per day (vpd) in the project vicinity. Existing access to I-25 from the project site is as follows:

- Plum Creek Parkway (full-movement) interchange located 2.0 miles north of Territorial Road, accessed via the W. Frontage Road.
- Tomah Road (southbound I-25 only) interchange located 3.0 miles south of Territorial Road, accessed via the W. Frontage Road.

- Sky View Lane (full-movement) interchange located 5.1 miles south of Territorial Road, accessed via the W. Frontage Road

West Frontage Road is a north-south, two-lane roadway that parallels I-25 and provides local access to properties and businesses on the west side of the interstate. West Frontage Road extends from Plum Creek Parkway (north) to Sky View Lane (south). Recent counts taken north of Territorial Road indicate that this roadway services approximately 3,200 vpd to 6,300 vpd depending on the day of the week. The posted speed limit is 45 mph within the project vicinity. The West Frontage Road is proposed to be disconnected from the I-25 southbound on-ramp through the Dawson Trails project site. It is anticipated that the West Frontage Road will be utilized until Prairie Hawk Drive is extended south of Plum Creek Parkway (named Dawson Trails Boulevard). The portion of West Frontage Road between Plum Creek Parkway and the I-25 southbound on-ramp is anticipated to become one-way southbound and redesigned as an on-ramp. The extension of Prairie Hawk Drive (proposed to be named Dawson Trails Boulevard south of Crystal Valley Parkway) to the south will provide north-south connectivity and to be classified as a Major Arterial per the Town of Castle Rock's *Transportation Master Plan (TMP)*. The new roadway will connect to West Frontage Road south of the project site. For the purpose of this study, it is anticipated that Dawson Trails Boulevard will be constructed with Phase 1 of the project and create a new intersection on Plum Creek Parkway.

East Frontage Road / Wilcox Street is a north-south, two-lane roadway that parallels I-25 and provides local access to downtown Castle Rock, several neighborhoods, and businesses on the east side of the interstate. Wilcox Street extends from Wolfensberger Road to Perry Street and continues as East Frontage Road to Sky View Lane (south). Historic traffic volumes indicate that East Frontage Road services approximately 7,500 vpd north of Perry Street. The posted speed limit is 45 mph. Per the Town of Castle Rock's *Transportation Master Plan (TMP)*, East Frontage Road will remain a Minor Arterial into the future.

Crystal Valley Parkway is an east-west, major arterial with a four-lane cross section extending from East Frontage Road to Lake Gulch Road. The roadway provides access to several neighborhoods, a few small businesses, the Rhyolite Regional Park, and Fire Station #152. Crystal Valley Parkway services between 3,200 vpd and 8,300 vpd depending on the day of the week. The posted speed limit is 35 mph. The Town of Castle Rock is currently in the process of alternative evaluation and designing the planned Crystal Valley Parkway interchange (full-movement) to I-25. Based on the current information from the Town of Castle Rock, the I-25 interchange design is recommended to be a partial cloverleaf with a signal at the I-25 southbound ramp terminal, a

free-flow ramp for I-25 on-ramp, and a roundabout at the I-25 northbound off-ramp that will include the East Frontage Road[2].

Plum Creek Parkway is a major arterial east-west roadway that provides access through southern Castle Rock, extending from Wolfensberger Road (west) to Ridge Road (east). West of I-25, this arterial is currently two lanes and east of the interchange it widens to four lanes. The counts indicate that Plum Creek Parkway carries approximately 6,600 vpd west of I-25. The posted speed limit is 30 mph near the I-25 interchange and transitions to 45 mph to the west. Plum Creek Parkway provides direct access to I-25 with a full-movement interchange.

Plum Creek Boulevard is a north-south, two-lane Collector roadway that connects Plum Creek Parkway to Crystal Valley Parkway and provides local access to residential communities, the Plum Creek Golf and Country Club, Douglas County Fairgrounds, D.C. Oaks High School, and a few small businesses. South of Plum Creek Parkway this roadway services between 4,400 vpd to 6,500 vpd depending on the day of the week. South of Cherry Plum Way, this roadway services between 1,000 vpd and 1,650 vpd. The posted speed limit is 30 mph.

Territorial Road is gravel two-lane roadway that services primarily residential uses on the west side of I-25 and the future Dawson Trails development. An at-grade railroad crossing exists on Territorial Road just west of the West Frontage Road with stop-control and no gates. Currently, the roadway services an average of 370 vpd and has a posted speed limit of 25 mph. Territorial Road will be reconstructed and realigned as Dawson Trails develops. The future roadway is identified as a Major Arterial to Twin Oaks Road per the Town of Castle Rock's *TMP*.

4.2 Intersections

The study area includes nine (9) existing intersections that are listed below with the current traffic control and were analyzed for existing and future background year traffic operations:

1. Plum Creek Parkway at Wilcox Street [signalized]
2. Plum Creek Parkway at Perry Street [signalized]
3. Plum Creek Parkway at Plum Creek Boulevard [signalized]
4. West Frontage Road at I-25 Southbound On-Ramp [free-flow, no side street approach]

[2] *Crystal Valley Interchange Traffic Analysis Technical Report*. Apex Design, a Consor Company. February 2022.

5. Crystal Valley Parkway at Plum Creek Boulevard [side-street stop controlled]
6. Crystal Valley Parkway at East Frontage Road [side-street stop controlled]
7. West Frontage Road at Territorial Road [side-street stop-controlled]
8. I-25 Southbound Ramps / West Frontage Road at Plum Creek Parkway [signalized]
9. I-25 Northbound Ramps at Plum Creek Parkway [signalized]

The existing lane configuration at each of the study locations is illustrated on **Figure 3A** and **Figure 3B**.

4.3 Pedestrian and Bicycle

Currently, there are sidewalks and/or wide multi-use paths on both sides of Plum Creek Parkway and Crystal Valley Parkway. Plum Creek Boulevard has a wide detached sidewalk along one side of the roadway that switches as appropriate. There are no sidewalks or trails along the Frontage Roads. Along Plum Creek Parkway, there are small sections that lack sidewalks. The Colorado Front Range Trail travels along the Union Pacific Railroad on the east side of I-25 and provides connections to regional and local multi-modal infrastructure.

There are buffered bike lanes on Plum Creek Boulevard for majority of the length starting at Plum Creek Parkway. The rest of the study roadways do not provide designated bike facilities. Bicyclists are permitted to ride within the travel lanes or on the multi-use paths along the Frontage Roads, Crystal Valley Parkway, and Plum Creek Parkway.

4.4 Transit

Currently, the Town of Castle Rock does not participate in the Regional Transportation District for regional transit services and there is no local service available. The Town provides vouchers and funds for a taxi service and senior center transportation. In the recently published *Castle Rock Transit Feasibility Study (October 2020)* the Town evaluated the need for and implementation of transit to support their multimodal transportation goals. The study highlighted three preferred operating models that would support the different transit demands of the community and would be beneficial to Dawson Trails in the future.

4.5 Year 2021 Existing Intersection Capacity Analysis

The existing volumes, lane configuration, and traffic control are illustrated on **Figure 3A** and **Figure 3B**. The results of the LOS calculations for the intersections are summarized in **Table 1**. The details of LOS and delay for each movement are provided in **Table 2** (refer to **Appendix**). The intersection Level of Service

worksheets are attached in the **Appendix**. All of the intersections operate overall at LOS D or better in the three peak hours.

Table 1: Existing Overall Level of Service Summary

No.	Intersection	Traffic Control	AM Peak Hour	PM Peak Hour	Sat Peak Hour
1	Plum Creek Pkwy at Wilcox St	Signal	C	D	C
2	Plum Creek Pkwy at Perry St	Signal	B	C	B
3	Plum Creek Pkwy at Plum Creek Blvd	Signal	B	A	B
4	West Frontage Road at I-25 SB On-Ramp	N/A	A (A)	A (A)	A (A)
5	Crystal Valley Pkwy at Plum Creek Blvd	Stop	A (C)	A (C)	A (B)
6	Crystal Valley Pkwy at East Frontage Rd	Stop	A (C)	A (D)	A (D)
7	West Frontage Rd at Territorial Rd	Stop	A (B)	A (B)	A (C)
8	Plum Creek Pkwy at I-25 SB Off-Ramp / W. Frontage Rd	Signal	C	C	C
9	Plum Creek Pkwy at I-25 NB Off-Ramp / On-Ramp	Signal	B	B	A

Note: For unsignalized intersections, the worse approach/movement LOS is also listed in parenthesis

All project intersections are shown to be operating overall at LOS D or better in the AM, PM, and Saturday midday peak hours. The following study intersections have movements that operate at LOS E or worse during one or more peak hours:

- ***#1 – Plum Creek Parkway and Wilcox Street:*** This signalized intersection operates overall at LOS C or LOS D in the evaluated peak hours; however, the eastbound left-turn movement currently operates at LOS E in the Saturday midday peak hour. The 95th percentile queue[3] for this movement was calculated to be approximately 146 feet (about 6 vehicles) in the same peak period, which is maintained within the existing 280 feet storage length.

  Recommendations: Consider adding a couple seconds of green time to the eastbound left-turn protected phase during the Saturday midday peak period, as appropriate. It is typical for left-turn

[3] It should be noted that the 95th percentile queue length is a theoretical queue that is 1.65 standard deviations above the average queue length. In theory, the 95th percentile queue would be exceeded 5% of the time based on the average queue length, but it is also possible that a queue this long may not occur.

movements to experience delays during peak periods due to limited green time or minimum gaps in opposing traffic during the permitted phase.

- ***#2 – Plum Creek Parkway and Perry Street:*** This signalized intersection operates overall at LOS B or LOS C during the three peak hours; however, the northbound right-turn movement operates at LOS F in the PM peak hour and LOS E in the Saturday midday peak hour. The 95th percentile queues for this movement were estimated at approximately 65 feet or less, which is equal to the existing storage length.

  Recommendations: Consider adding a couple seconds of green time to the northbound through phase during the PM and Saturday midday peak periods, as appropriate.

5.0 Future Conditions

5.1 Annual Growth Factor and Future Volume Methodology

In order to forecast the future peak hour traffic volumes, background traffic growth assumptions were estimated based on various resources: Town of Castle Rock's *Transportation Master Plan*, DRCOG regional model projections, CDOT data, and previous traffic impact studies within the area. Through the literature review, it was determined that the daily volumes forecasted for Year 2040 presented in the *Transportation Master Plan* were the most current predictions for the study area arterials and potential land development. The previous traffic model for the Town included the Dawson Trails and Westfield properties with forecasts of approximately 5,619 households and 5,738 employment jobs. This is similar to the proposed development to be constructed within the vacant properties. The traffic model assumed the majority of through north-south traffic would utilize I-25 and not travel on the Frontage Roads or future extension of Prairie Hawk Drive (named Dawson Trails Boulevard within project).

A comparison of the DRCOG base-year vs. 2040 projections shows annual growth of approximately 1.2% along Plum Creek Parkway on the east side of I-25. The Town TMP projects a full build 2040 volume of 24,900 vpd on Plum Creek Parkway just west of I-25. The Dawson Trails development area is included in these models. The forecasts for Crystal Valley Parkway, Plum Creek Boulevard, and the East and West Frontage Roads showed an annual growth rate of approximately 7% over the next 20 years, which includes development traffic from Dawson Trails, Westfield Trade Center, Crystal Valley Ranch, Lanterns, and Kings Ridge.

To estimate the background volumes, the following methodology was applied:

Year 2025

- 0.5% annual growth on all roadways
- Plus, Miller's Landing Short-Term Trips
- Plus, 20% of Trips from Neighborhoods along Crystal Valley Parkway still under construction[4]

Year 2030

- 1.2% annual growth on Plum Creek Parkway
- 0.5% annual growth on other study roadways
- Plus, Miller's Landing Long-Term Trips
- Plus, 100% of Trips from Neighborhoods along Crystal Valley Parkway

Year 2040

- 1.2% annual growth on Plum Creek Parkway
- 0.5% annual growth on other study roadways
- Plus, Miller's Landing Long-Term Trips
- Plus, 100% of Trips from Neighborhoods along Crystal Valley Parkway
- Plus, Westfield Trade Center[5]

By the Year 2025, it is anticipated that the Crystal Valley interchange will be constructed and provide full-movement access to I-25, as well as provide east-west access over the interstate and along the south end of Town. Volumes were adjusted throughout the study area to account for the redirected traffic that will utilize the new Crystal Valley interchange instead of Plum Creek Parkway.

Using the above listed assumptions, the Year 2025 background traffic is summarized on **Figures 4A and 4B;** the Year 2030 background traffic is summarized on **Figures 5A and 5B;** and the Year 2040 background traffic is summarized on **Figures 6A and 6B**.

[4] There are approximately 1,250 vacant lots within the Kings Ranch, Lanterns, and Crystal Valley Ranch communities. Trip generation was estimated by applying rates for single-family homes and then distributed throughout the study area.

[5] Westfield Trade Center is the land to the west of Dawson Trails and north of Territorial Road. It was estimated that 146 acres of the total 194 acres will be developable. For the purpose of this traffic study, it was assumed that there will be up to 154,200 sq. ft. of retail, 746,440 sq. ft. of "flex space" that will be either light industrial or office, and 500 multi-family units.

5.2 Year 2025 Anticipated Transportation Network

As shown in the *Transportation Master Plan*, it is planned that the following roadway and intersection improvements will be completed by Year 2025 background:

- **Crystal Valley Interchange** – Extend Crystal Valley Parkway west of East Frontage Road, over I-25 and the railroad tracks**.** The Town is currently working on evaluating and determining the most appropriate interchange design; therefore, this traffic study for Dawson Trails does not analyze the interchange intersections.
- **West Frontage Road and Territorial Road** – With the Crystal Valley Interchange, this existing intersection will be removed. A new intersection will be constructed with Crystal Valley Parkway/Territorial Road and the future Dawson Trails Boulevard, which is to the west over the railroad tracks.
    - It is understood that the intersection of Crystal Valley Parkway at Dawson Trails Boulevard will be constructed to the ultimate width on all approaches. This study assumes that the unnecessary lanes will we striped out and not utilized until volumes warrant the need for use.
    - The assumed lane configuration in the short-term scenario was based on the conceptual ultimate design of the intersection with the interchange and the forecasted background volumes. It was assumed that the westbound, northbound, and southbound approaches will provide one left-turn lane, one through lane, and one right-turn lane; and the eastbound approach will provide one left-turn lane and one through/right-turn lane.
    - In the short-term background scenario, this intersection can remain stop-controlled based on volumes.
- **Crystal Valley Parkway at Plum Creek Boulevard** – Town of Castle Rock plans to reconstruct the intersection as a roundabout. It was assumed that the eastbound and westbound approaches will include one left/through lane and one through/right lane, while the northbound approach will include one left-turn lane and one left/through/right lane and the southbound approach will include one shared left/through/right lane.
- **Crystal Valley Parkway at Dawson Trails Boulevard –** It is understood that this intersection will be constructed with the Crystal Valley Interchange as the ultimate configuration. This analysis just provides the timing of when lanes are warranted based on volumes or operations. The Town can decide to stripe out lanes that are not needed or provide all lanes which are anticipated to have improved levels of service than shown in this traffic study.

- In 2025 background, the following lanes are anticipated to be needed: eastbound – one left-turn lane and one through/right-turn lane; and westbound, northbound, and southbound – one left-turn lane, one through lane, one right-turn lane. In the interim this intersection can be side-street stop-control (eastbound/westbound).
- **East Frontage Road and Crystal Valley Parkway** – Based on the *Crystal Valley Interchange Traffic Analysis Technical Report (February 2022)*, this existing intersection will be relocated to the east and be incorporated into the I-25 Northbound Ramp intersection on Crystal Valley Parkway. The Technical Report recommended that this intersection be designed as a five-legged, multi-lane roundabout to accommodate traffic exiting I-25 from the south and traffic on the East Frontage Road. Since this intersection was evaluated and designed as part of the interchange analysis, it is not included in the future scenarios of the Dawson Trails study.
- **Crystal Valley Parkway at Dawson Trails Boulevard** – Signalize. Based on the signal warrant analysis, the signal is not warranted until 2030 background or with portions of Dawson Trails development generating traffic. However, with the interchange project it is likely the signal will be installed proactively; therefore, this analysis assumes the signal will be operations in 2025 background.
- **Prairie Hawk Drive / Dawson Trails Boulevard** – For comparison purposes, it was assumed the planned arterial will be constructed west of the railroad tracks and create a new intersection on Plum Creek Parkway. The ultimate design is to provide four lanes (two per direction). It is understood that this roadway will be constructed with the first phase of Dawson Trails as a two-lane roadway (one lane per direction) and the construction, phasing, and funding of the new roadway will be coordinated with the Town of Castle Rock, Douglas County, CDOT, and Dawson Trails.
    - Note that through volumes on Dawson Trails Boulevard are not anticipated to need the second through lane without development traffic. Therefore, it is assumed the second through lane is a right-turn drop lane or striped out until needed.

These intersection improvements were assumed to be in place in the background condition for the short-term scenario and shown on **Figure 4A and Figure 4B**.

The *MUTCD* states that a traffic signal should not be installed unless one or more of the warrants are met and an engineering study finds that installing a traffic signal will improve the overall safety and operation of the intersection. The listed future signalized intersection should be monitored as development and growth occur within and near the study area to determine if and when other signal warrants are met.

Future signal timing phases and cycle lengths were based on the existing timing parameters along Plum Creek Parkway and optimized, as necessary.

5.3 Year 2025 Background Intersection Capacity Analysis

The study area intersections were evaluated to determine baseline conditions for the Year 2025 background scenario and to identify any capacity constraints associated with short-term background traffic (refer to **Section 5.1** for growth assumptions). It was assumed that the roadway and intersection improvements listed in **Section 5.2** will be implemented by Year 2025 background. The background volumes, lane configuration, and traffic control are illustrated on **Figure 4A and Figure 4B**.

The Level of Service criteria discussed previously was applied to the study area intersections to determine the impacts with the short-term background volumes. This analysis assumes the existing signal timing on Plum Creek Parkway will remain the same.

The results of the LOS calculations for the intersections are summarized in **Table 3**. The details of LOS and delays for each movement are provided in **Table 2** (refer to **Appendix**). The intersection Level of Service worksheets are attached in the **Appendix**.

Table 3: Year 2025 Background Overall Level of Service Summary

No.	Intersection	Traffic Control	AM Peak Hour	PM Peak Hour	Sat Peak Hour
1	Plum Creek Pkwy at Wilcox St	Signal	C	D	D
2	Plum Creek Pkwy at Perry St	Signal	B	C	C
3	Plum Creek Pkwy at Plum Creek Blvd	Signal	B	A	B
4	West Frontage Road at I-25 SB On-Ramp	*Frontage Rd. removed and On-Ramp remains.*			
5	Crystal Valley Pkwy at Plum Creek Blvd	Rdabt	A	A	A
6	Crystal Valley Pkwy at East Frontage Rd	*This intersection will be included in Crystal Valley NB Off-Ramp Intersection (Rdabt)*			
7	Crystal Valley Parkway at Dawson Trails Blvd / Prairie Hawk Dr	Signal	C	C	C
8	Plum Creek Pkwy at I-25 SB Off-Ramp / W. Frontage Rd	Signal	C	C	C
9	Plum Creek Pkwy at I-25 NB Off-Ramp / On-Ramp	Signal	B	B	B
10	Plum Creek Pkwy at Prairie Hawk Dr/Dawson Trails Blvd	Signal	B	B	B

Note: For unsignalized intersections, the worse approach/movement LOS is also listed in parenthesis

In summary, all the of the study intersections are estimated to operate at LOS D or better in the short-term background scenario. Movements that operated at LOS E/F in the existing scenario were estimated to continue to operate at these levels. The following movements were calculated to operate at LOS E/F in one or more of the peak hours in Year 2025 background as described below:

- ***#1 – Plum Creek Parkway and Wilcox Street:*** This signalized intersection operates overall at LOS C or LOS D in the evaluated peak hours; however, the eastbound left-turn movement was estimated to operate at LOS F in the Saturday peak hour. The 95th percentile queue for this movement was calculated to be approximately 186 feet (about 8 vehicles) in the same peak period, which is maintained within the existing 280 feet storage length.

  Recommendations: Consider adding a couple seconds of green time to the eastbound left-turn protected phase during the Saturday peak period, as appropriate. It is typical for left-turn movements to operate below LOS D due to limited green time or minimum gaps in opposing traffic during the permitted phase.

- ***#2 – Plum Creek Parkway and Perry Street:*** This signalized intersection operates overall at LOS C or better during the three peak hours; however, the northbound right-turn movement was estimated to continue to operate at LOS F in the PM peak hour and LOS E in the Saturday midday peak hour. The 95th percentile queues for this movement were estimated at approximately 65 feet or less, which is equal to the existing storage length.

  Recommendations: Consider adding a couple seconds of green time to the northbound through phase during the PM and Saturday midday peak periods, as appropriate.

5.4 Year 2030 Planned Transportation Network

In addition to the listed transportation improvements in Year 2025 background, there are assumed roadway and intersection improvements in Year 2030 background based on the Town's upcoming projects, intersection movement volumes, and signal warrant analysis. It was assumed the following roadway and intersection improvements are constructed prior to Year 2030 background:

- **West Frontage Road –** Remove the portion of roadway between the I-25 Southbound On-Ramp and the south boundary of Dawson Trails. This is assumed to happen in background for analysis purposes of comparing similar scenarios. It is understood this roadway change will be coordinated with the Town of Castle Rock, Douglas County, CDOT, and Dawson Trails.

- It is assumed that the I-25 Southbound On-Ramp south of Plum Creek Parkway will remain but not have through traffic in the northbound or southbound directions unless needed for minimal local travel to existing homes and property.

- **Prairie Hawk Drive / Dawson Trails Boulevard** – Widen to the planned four-lane arterial. It is understood that this roadway will be a part of the Dawson Trails project, but is included in the background for comparison purposes.
    - Note that through volumes on Dawson Trails Boulevard are not anticipated to need the second through lane without development traffic. Therefore, it is assumed the second through lane is a right-turn drop lane or striped out until needed. It is understood that the intersection at Crystal Valley Parkway will be constructed as the ultimate design. This analysis just provides the timing of when lanes are warranted based on volumes or operations. The Town can decide to stripe out lanes that are not needed or provide all lanes which are anticipated to have improved levels of service than shown in this traffic study.

These roadway and intersection improvements were assumed to be in place in the mid-term background condition and are shown on **Figure 5A and Figure 5B**.

The *Manual on Uniform Traffic Control Devices*[6] (MUTCD) guidance states that a traffic signal should not be installed unless one or more of the warrants are met. Though, the satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a signal. The *MUTCD* also states that a traffic signal should not be installed unless an engineering study finds that installing a traffic signal will improve the overall safety and operation of the intersection. The listed future signalized intersections should be monitored as development and growth occur within and near the study area to determine if and when other signal warrants are met. Future signal timing phases and cycle lengths were based on the existing timing parameters along Plum Creek Parkway and optimized, as necessary.

5.5 Year 2030 Background Intersection Capacity Analysis

The study area intersections were evaluated to determine baseline conditions for the Year 2030 background scenario and to identify any capacity constraints associated with background traffic in the mid-term scenario (refer to **Section 5.1** for growth assumptions). The mid-term background volumes, lane configuration, and traffic control are illustrated on **Figure 5A and Figure 5B**.

---

6 *Manual on Uniform Traffic Control Devices*. Federal Highway Administration. Washington, D.C. 2009.

The Level of Service criteria discussed previously was applied to the study area intersections to determine the impacts with the mid-term background volumes. The analysis assumed the signal timing at all signalized intersections would be adjusted to accommodate the additional lanes and change in traffic volumes. It should be noted that the peak hour factors were adjusted to the HCM suburban default of 0.92 (if the existing factor is less than 0.92) on the arterials and local streets since it is assumed that the peak periods will become longer with peak hour traffic spread more evenly over the hour as traffic increases than is experienced today.

The results of the LOS calculations for the intersections are summarized in **Table 4**. The details of LOS and delays for each movement are provided in **Table 2** (refer to **Appendix**). The intersection Level of Service worksheets are attached in the **Appendix**.

Table 4: Year 2030 Background Overall Level of Service Summary

No.	Intersection	Traffic Control	AM Peak Hour	PM Peak Hour	Sat Peak Hour
1	Plum Creek Pkwy at Wilcox St	Signal	C	D	C
2	Plum Creek Pkwy at Perry St	Signal	B	C	B
3	Plum Creek Pkwy at Plum Creek Blvd	Signal	B	A	B
4	West Frontage Road at I-25 SB On-Ramp	*Frontage Rd. removed and On-Ramp remains.*			
5	Crystal Valley Pkwy at Plum Creek Blvd	Rdabt	A	A	A
6	Crystal Valley Pkwy at East Frontage Rd	*This intersection will be included in Crystal Valley NB Off-Ramp Intersection (Roundabout)*			
7	Crystal Valley Pkwy at Dawson Trails Blvd / Prairie Hawk Dr	Signal	B	B	C
8	Plum Creek Pkwy at I-25 SB Off-Ramp / W. Frontage Rd	Signal	B	B	B
9	Plum Creek Pkwy at I-25 NB Off-Ramp / On-Ramp	Signal	B	B	B
10	Plum Creek Pkwy at Prairie Hawk Dr / Dawson Trails Blvd	Signal	C	C	C

In summary, all the of the study intersections are estimated to operate at LOS D or better in the mid-term background scenario. Movements that operated at LOS E/F in the existing or Year 2025 background scenarios were estimated to improve as traffic spreads over the hour, cycle lengths are slightly increased, and signal timings are adjusted. The timing worksheets are included in the **Appendix**.

5.6 Year 2040 Planned Transportation Network

In addition to the listed transportation improvements in Year 2025 and Year 2030 background, there are assumed roadway and intersection improvements in Year 2040 background based on the Town's upcoming projects, intersection movement volumes, and signal warrant analysis. It was assumed the following roadway and intersection improvements are completed prior to Year 2040 background:

- **Prairie Hawk Drive / Dawson Trails Boulevard** – Allow all four through lanes to be available for use through and between intersections.
- **Crystal Valley Parkway at Dawson Trails Boulevard** –Provide second northbound and southbound through lanes and provide second southbound left-turn lane.

These roadway and intersection improvements were assumed to be in place in the background condition for the long-term scenario and shown in **Figure 6A and Figure 6B**. The details of the signal warrant analysis are provided in the **Appendix**.

5.7 Year 2040 Background Intersection Capacity Analysis

The study area intersections were evaluated to determine baseline operations for the Year 2040 background scenario and to identify any capacity constraints associated with background traffic in the long-term scenario (refer to **Section 5.1** for growth assumptions). The long-term background volumes, lane configuration, and traffic control are illustrated on **Figure 6A and Figure 6B**.

The Level of Service criteria discussed previously was applied to the study area intersections to determine the impacts with the long-term background volumes. The analysis assumed the signal timing at all signalized intersections would be adjusted to accommodate the additional lanes and change in traffic volumes. As previously discussed, the peak hour factors were adjusted, as necessary.

The results of the LOS calculations for the intersections are summarized in **Table 5**. The details of LOS and delays for each movement are provided in **Table 2** (refer to **Appendix**). The intersection Level of Service worksheets are attached in the **Appendix**.

Table 5: Year 2040 Background Overall Level of Service Summary

No.	Intersection	Traffic Control	AM Peak Hour	PM Peak Hour	Sat Peak Hour
1	Plum Creek Pkwy at Wilcox St	Signal	C	D	C
2	Plum Creek Pkwy at Perry St	Signal	A	B	B
3	Plum Creek Pkwy at Plum Creek Blvd	Signal	B	C	B
4	West Frontage Road at I-25 SB On-Ramp	*Frontage Rd. removed and On-Ramp remains.*			
5	Crystal Valley Pkwy at Plum Creek Blvd	Rdabt	A	A	A
6	Crystal Valley Pkwy at East Frontage Rd	*This intersection will be included in Crystal Valley NB Off-Ramp Intersection (Roundabout)*			
7	Crystal Valley Pkwy at Dawson Trails Blvd / Prairie Hawk Dr	Signal	C	C	C
8	Plum Creek Pkwy at I-25 SB Off-Ramp / W. Frontage Rd	Signal	B	C	C
9	Plum Creek Pkwy at I-25 NB Off-Ramp / On-Ramp	Signal	B	B	B
10	Plum Creek Pkwy at Prairie Hawk Dr / Dawson Trails Blvd	Signal	C	C	C

In summary, all the of the study intersections are estimated to operate at LOS D or better overall in the long-term background scenario.

6.0 Future Conditions with the Dawson Trails Development

Dawson Trails is anticipated to include a mix of commercial, residential, office, flex space, light industrial, schools, and recreational uses. The site is planned to be developed over several phases. For the purpose of this traffic study, three phases were assumed to evaluate the short-term, mid-term, and long-term scenarios. The National Cooperative Highway Research Program (NCHRP)'s *Report 365: Travel Estimation Techniques for Urban Planning*[7] provides trip characteristics for and data to support household-based approaches for trip estimation and modeling.

[7] *NCHRP Report 365 – Travel Estimation Techniques for Urban Planning*. Transportation Research Board. Washington, D.C. 1998. And *NCHRP Report 684 – Enhancing Internal Trip Capture Estimation for Mixed-Use Developments*. Transportation Research Board. Washington, D.C. 2011.

These types of trips are contained within the Dawson Trails property to shop at or work at or recreate at land uses within the site without traveling on the external roadways. Data in NCHRP 365 shows that on average 20% of home-based trips are to/from work, 57% are "home-based other", which would include trips to/from schools, to/from retail, etc., and the remaining 23% being "non-home based", which could be deliveries, mail, and other services.

Assumptions for Dawson Trails trips were made using the NCHRP data as a basis. It was assumed that retail trips were 40% internal home-based trips, flex space trips were 30% internal home-based trips, and light industrial trips were 15% internal home-based trips. All of the internal, home-based trips between planning areas were assigned to the study roadways and through internal intersections and intersections along Dawson Trails Boulevard. The internal trips are accounted for in the trip assignment and analysis.

Since the school is anticipated to primarily serve the residences of Dawson Trails and adjacent neighborhoods, it was assumed that majority of the trips would be internal, diverted, or non-auto. Typically, school traffic does not create new traffic, instead redirects home-to-work and work-to-home trips. It is anticipated that 90% of the elementary school trips and 10% of the high school trips will be from the homes within Dawson Trails and the remaining trips will travel from the nearby neighborhoods. It should be noted that the internal school traffic was redirected from residential trips since those traveling to/from another school will redirect to the new school and then return to their route.

6.1 Trip Generation

A trip generation estimate was performed to determine the traffic characteristics of the proposed maximum density of the Dawson Trails development. The trip rates contained in the ITE *Trip Generation Manual* were applied to estimate the traffic for the proposed land uses as listed below:

- #110 "General Light Industrial"
- #210 "Single-Family Detached Housing"
- #220 "Multi-Family Housing (Low-Rise)"
- #520 "Elementary School"
- #530 "High School"
- #465 Ice Skating Rink
- #488 Soccer Complex (conservative land use assumption for the park)
- #710 "General Office Building"
- #820 "Shopping Center"
- #857 "Discount Club"

Specific uses and tenants for the majority of the commercial spaces are unknown at this time. It is anticipated that a small portion will be retail and the majority will be either office, flex space, or light industrial ("flex" space). For the flex commercial space it was assumed that 50% will be office/flex and

50% will be light industrial. The square footage of the two potential land uses is listed in the trip generation table.

In the Saturday peak hour, the *Trip Generation Manual* provides the trip rates for the land use generator during its peak hour and not the peak hour of the day. The Trip generation Manual provides time of day tables that indicate when the peak hour has typically been documented for residential or commercial land uses. The data indicated that on Saturday the residential peak is 12.5% less during the commercial peak; therefore, the trip rates for the residential units were reduced by the listed percentage to represent the peak hour more accurately on Saturday.

Table 6A (external trips) and **Table 6B** (internal) provide the detailed trip generation estimates for the three phases of the future Dawson Trails community (refer to the **Appendix**). The proposed project is expected to experience new trips, also known as 'primary trips', pass-by trips, multi-use trips, and non-auto trips which are discussed below:

Primary Trips. These trips are made specifically to visit the site and are considered "new" trips. Primary trips would not have been made if the proposed project did not exist. Therefore, this is the only trip type that increases the total number of trips made on a regional basis.

Pass-By Trips. Pass-by trips do not create any increase in the traffic volumes within the primary impact area. In fact, the only impact of the pass-by trips is at the site driveways and adjacent intersections where through movements become turning movements into and out of the site. Therefore, pass-by trips have no additional impact on the road system beyond the site's driveways or immediately adjacent intersections. With or without pass-by trips, the total trips to/from a project will remain the same. Pass-by was only applied to the retail portions of the Dawson Trails site and it was assumed some of the pass-by trips would be from I-25. Per ITE data, the pass-by percentages by land use and peak hour were applied as shown in the trip generation tables.

Multi-Use/ Multi-Purpose Trips. These trips occur from one land use or building to another within the planning area boundaries. Multi-use or multi-purpose trips typically do not affect the site access points, nor add any additional traffic volumes to the adjacent street network. Based on ITE *Trip Generation Manual*, the internal capture for the Dawson Trails project was calculated to be up to 16%. For conservative purposes, a 10% internal capture reduction was applied to the trip generation for commercial land uses and assumed to not travel on arterial or collector roadways.

Non-Auto Trips. These trips are those that are completed by walking, biking, or transit or persons that telework. The future pedestrian and bicycle amenities will encourage residents, employees, customers, and visitors to make non-auto trips to/from and within the Dawson Trails community. The non-auto trips are assumed to be a 5% for commercial and residential land uses and 10% for the recreational land uses.

Table 7 summarizes the land uses that were assumed for the Dawson Trails development for each phase. Phasing is illustrated on **Figure 2**.

Table 7: Land Use Assumptions per Phase

	Land Use Type	Size (rounded)
Phase 1	**(Year 2025)**	
	Single-Family Homes /Townhomes	500 dwelling units
	Commercial (Retail and Service)	180,000 sq. ft.
Phase 2	**(Year 2030)**	
	Single-Family Homes	1,935 dwelling units
	Multi-Family Homes	1,165 dwelling units
	Elementary School	450 Students
	Commercial (Retail and Service)	483,000 sq. ft.
	Office Space	217,000 sq. ft.
	Flex Space (Office)	450,000 sq. ft.
	Flex Space (Light Industrial)	450,000 sq. ft.
Phase 3	**(Year 2040)**	
	Single-Family Homes	1,092 dwelling units
	Multi-Family Homes	1,158 dwelling units
	Elementary School	450 Students
	High School	2,000 Students
	Commercial (Retail and Service)	237,000 sq. ft.
	Office Space	583,000 sq. ft.
	Light Industrial	375,000 sq. ft.
	Flex Space (Office)	112,500 sq. ft.
	Flex Space (Light Industrial)	112,500 sq. ft.
	Recreation Center / Ice Arena	60,000 sq. ft.
	Regional Park	12 fields/courts
Total Dawson Trails Development		
	Residential Homes	5,850 dwelling units
	Commercial (Retail and Service)	900,000 sq. ft.
	Office	800,000 sq. ft.
	Light Industrial	375,000 sq. ft.
	Flex Space (Office or Light Industrial)	1,125,000 sq. ft.
	Elementary School	900 Students
	High School	2,000 Students

Estimated Trips

Dawson Trails was estimated to generate approximately 87,025 daily trips with about 6,700 trips occurring in the AM peak hour, 8,760 trips occurring in the PM peak hour, and 8,385 trips in the Saturday midday peak hour at full build-out (new and pass-by trips). The total trips listed include all external and internal trips. It was estimated that the external trips would be approximately 61,455 daily trips with about 4,250 trips occurring in the AM peak hour, 6,220 trips occurring in the PM peak hour, and 5,900 trips in the Saturday midday peak hour at full build-out (new and pass-by trips). The internal trips were estimated to be approximately 25,570 daily trips, 2,450 trips in the AM peak hour, 2,540 trips in the PM peak hour, and 2,480 trips in the Saturday peak hour. **Table 6A** summarizes the external trips that begin or end outside of Dawson Trails. **Table 6B** summarizes the internal trips that remain within Dawson Trails, do not utilize the interchange or external roadways, and were assigned to the local roadway network within Dawson Trails.

6.2 Trip Distribution and Assignment

The estimated trip volumes were distributed onto the study area street network based on existing traffic characteristics and available capacity, and anticipated destinations, as well as regional growth and future roadway infrastructure. The assumed distributions by land use type are listed below in **Table 8** and presented on **Figure 7**:

Table 8: Trip Distribution Summary

To/From	Percentage
North I-25 via Crystal Valley Interchange	35%
North I-25 via Plum Creek Parkway	5%
North Prairie Hawk Drive / Dawson Trails Blvd.	15%
North Wilcox Street via Frontage Roads	5%
North Perry Street via E. Frontage Road	3%
South I-25 via Crystal Valley Interchange	20%
South W. Frontage Road (Dawson Trails Blvd.)	5%
East Crystal Valley Parkway	4%
East Plum Creek Parkway	2%
West Plum Creek Parkway via. Prairie Hawk Drive / Dawson Trails Blvd.	2%
West via Twin Oaks Neighborhood	<1%
Existing Businesses/Neighborhoods East of I-25	4%

Using these distribution assumptions, the projected site traffic for each planning area was assigned to the study area roadway network for the weekday AM and PM peak hours and the Saturday midday peak hour during each of the three phases based on the most convenient route and available access.

The Phase 1 site-generated volumes for Year 2025 are shown on **Figures 8A and 8B** (existing intersections) and **Figure 8C** (proposed access). The site-generated volumes for the completion of Phases 1 and 2 are shown on **Figures 9A and 9B** (existing intersections) and **Figure 9C** (proposed access). The site-generated volumes for the full buildout of Dawson Trails are shown on **Figures 10A and 10B** (existing intersections) and **Figure 10C** (proposed access).

6.3 Proposed Roadway Network and Access

The future extension of Prairie Hawk Drive and realignment of West Frontage Road will be the primary arterial for the project. It is anticipated that two lanes of the arterial will be constructed with Phase 1 and widened in the future as volumes and operations warrant. South of Plum Creek Parkway, this proposed four-lane roadway will be named Dawson Trails Boulevard. The Dawson Trails project plans to construct several collector roadways internally to the site that will provide access between Dawson Trails Boulevard and the planning areas. Each phase will include segments of the proposed roadways to serve the planned development with anticipated completion with the final phase. In addition to the anticipated background roadway and intersection improvements, the following proposed roadway and intersection improvements are recommended to accommodate the proposed trip volume[8]:

Phase 1 (Year 2025):

- **Prairie Hawk Drive / Dawson Trails Boulevard** – Construct as a two-lane roadway (one lane per direction) between Plum Creek Parkway and the south boundary of the Dawson Trails property.
- **Crystal Valley Parkway at Plum Creek Boulevard** – Roundabout (per Town plans and design).
- **Crystal Valley Parkway at Dawson Trails Boulevard** – Signalize (based on signal warrant analysis).
    - It is understood that this intersection will be constructed to the ultimate width on all approaches. This study assumes that the unnecessary lanes will we striped out and not utilized until volumes warrant the need for use.

[8] The traffic study provides technical information and evaluates the need for transportation mitigation as traffic grows, but it does not address infrastructure commitments or obligations of Dawson Trails. That needs to be discussed and negotiated in the development agreements for the project.

- **Territorial Road at Twin Oaks Road / Clarkes Circle** – Relocate intersections with the construction of the new internal Collector A. It is proposed that Twin Oaks Road be realigned to the south to create an intersection on Collector A. It is anticipated that Clarks Circle connect to Collector A as an emergency access.
    - **Twin Oaks Road at Collector A –** Provide a left-turn lane on Collector A southbound. Do not permit a left-turn movement for the northbound approach. Add stop signs on the side-street approaches.
- **New Roadway Infrastructure** – Construct collector roadways from Dawson Trails Boulevard into and through the Dawson Trails property. Internal roadways and intersections will be aligned, designed, and analyzed at the filing level.
- **Intersections along Dawson Trails Boulevard –** It is proposed that the full movement intersections be constructed as roundabouts, except for Collector Road A that will be signalized since it is the west leg of the Dawson Trails Boulevard at Crystal Valley Parkway intersection. Additional restricted movement accesses along Dawson Trails Boulevard will be identified and evaluated at the filing level of the project, as well as internal intersections along the collector roadways.
    - **#102 Collector H:** Construct roundabout with one approach lane on the northbound and southbound approaches, one left-turn/right-turn lane on the westbound approach, and one westbound right-turn bypass lane.
    - **#104 Access E-2/F-1.3:** Construct roundabout with one approach lane on the northbound and southbound approaches and one left-turn/right-turn lane on the eastbound approach
    - **#105 Collector Road B:** Construct roundabout with one approach lane on the northbound and southbound approaches and one left-turn/right-turn lane on the eastbound approach.
    - **#106 Collector Road C:** Construct roundabout with one approach lane on the northbound and southbound approaches and one left-turn/right-turn lane on the eastbound approach.
    - It is understood that roundabouts will be constructed to the ultimate configuration to reduce reconstruction in the future. Interim roundabout geometry can be incorporated to build the ultimate diameter but only use necessary lanes for each phase. The traffic study lists the lanes needed per the volumes, but the Town can decide to stripe out or provide interim curbing/raised pavement to restrict use of certain lanes.

Phase 2 (Year 2030):

- **Prairie Hawk Drive / Dawson Trails Boulevard** – Widen to a four-lane roadway (two lanes per direction) between Plum Creek Parkway and the south boundary of the Dawson Trails property. The roundabout intersections will be constructed to the ultimate design to accommodate the widening in the future.
- **Crystal Valley Parkway at Dawson Trails Boulevard –** With the Phase 2 development volume, this intersection will need to provide the following additional lanes from the previous scenarios/phases: second eastbound through lane, one eastbound right-turn lane, second westbound left-turn lane, and second northbound and southbound through lanes. Protected only phasing for dual left-turn phase.
- **Twin Oaks Road at Collector A –** Signalize and provide one westbound left-turn lane.
- **New Roadway Infrastructure** – Construct collector roadways from Dawson Trails Boulevard into and through the Dawson Trails property. Internal roadways and intersections will be aligned, designed, and analyzed at the filing level.
- **Intersections along Dawson Trails Boulevard –** It is proposed that the full-movement intersections be constructed as roundabouts. Additional accesses will be identified and evaluated at the filing level of the project.
    - **#101 Access F-1:** Construct roundabout with two approach lanes on the northbound and southbound approaches, and one approach lane on the westbound approach.
    - **#102 Collector:** Construct eastbound approach with one inbound lane and one outbound lane.
    - **#104 Access E-2/F-1.3:** Construct westbound approach with one left-turn lane, one through/right-turn lane, and one right bypass lane. Upgrade the eastbound approach to include one left-turn lane, one left-turn/through/right-turn lane, and one right bypass lane. Add right-turn bypass lanes on the northbound and southbound approaches.
    - **#105 Collector Road B:** Construct westbound approach with one left-turn lane, one through/right-turn lane, and one right bypass lane. Upgrade the eastbound approach to include one left-turn lane, one left-turn/through/right-turn lane, and one right bypass lane. Add right-turn bypass lanes on the northbound and southbound approaches.
    - **#106 Collector Road C:** Construct westbound approach with one left-turn lane, one through/right-turn lane, and one right bypass lane. Upgrade the eastbound approach to include one left-turn lane and one left-turn/through/right-turn lane.

- **#107 Collector Road D:** Construct roundabout with two approach lanes on the northbound and southbound approaches, and one approach lane on the eastbound approach.
- **All roundabout intersections**: change to two-lane circulation to accommodate widening of Dawson Trails Boulevard/Prairie Hawk Drive. It is understood that roundabouts will be constructed to the ultimate configuration to reduce rebuilding in the future. Interim roundabout geometry can be incorporated to build the ultimate diameter but only use necessary lanes for each phase. The traffic study lists the lanes needed per the volumes, but the Town can decide to stripe out or provide interim curbing/raised pavement to restrict use of certain lanes.

Phase 3 – Full Buildout (Year 2040):

- **Prairie Hawk Drive / Dawson Trails Boulevard** – Widen to a six-lane roadway (three lanes per direction) between Crystal Valley Boulevard and Intersection #105. The third lane will be dropped at the appropriate downstream intersection as a right-turn lane and roundabout will not have three circulating lanes.
- **Crystal Valley Parkway at Dawson Trails Boulevard** – Provide the following lanes: third westbound left-turn lane and receiving lane and second westbound through lane.
- **New Roadway Infrastructure** – Construct collector roadways from Dawson Trails Boulevard into and through the Dawson Trails property. Internal roadways and intersections will be aligned, designed, and analyzed at the filing level.
- **Intersections along Dawson Trails Boulevard –** It is proposed that the full-movement intersections be constructed as roundabouts. Additional accesses will be identified and evaluated at the filing level of the project.
  - **#101 Access F-1:** Construct eastbound approach with one inbound lane and one outbound lane.
  - **#108 Access G-2/High School:** Construct roundabout with two approach lanes on the northbound and southbound approaches, and one approach lane on the eastbound and westbound approaches.

Refer to **Figures 8C** and **9C** and **10C** for an illustration of the proposed access locations.

It should be noted that the internal accesses will be identified and vetted in more detail during the design stages of specific parcels and adjustments to access will be made as necessary based on discussions with

Town staff, land use types, and traffic flow. This master traffic study will be updated if changes to access significantly impact the trip generation, traffic flow, or infrastructure needs.

6.4 Proposed Pedestrian and Bicyclist Facilities

Dawson Trails plans to provide sidewalks and trails throughout the project site that will connect the residential areas to the commercial land uses, neighborhood parks, the recreation center, the regional park, the schools and to a wide multi-use path along Dawson Trails Boulevard. Refer to the site plan for details on sidewalks, trails, and bike lanes within the Dawson Trails community. As the design details of the project are developed and specific areas are planned, the pedestrian and bicyclist facilities, connections, and crossings will be determined and included in the design submittals. The internal multi-modal accommodations are anticipated to link to external facilities as proposed in the Town's TMP. It is understood that some of the pedestrian and bicyclist infrastructure may include signal crossing, grade separated crossing, or other enhancements to provide a safe environment for people walking or biking and to encourage non-auto travel.

The Town of Castle Rock's TMP proposes that there will be an on-street bike lane/shoulder along Dawson Trails Boulevard (Prairie Hawk Drive Extension), Plum Creek Parkway, Crystal Valley Parkway, and East Frontage Road.

6.5 Proposed Mobility Hub

Per discussions with the Town of Castle Rock and CDOT, a portion of land will be reserved for a mobility hub for future transit services. Currently, the location is planned to be in Planning Area F-1 (PL 1.08) (north of Crystal Valley Parkway and east of Dawson Trails Boulevard). The potential mobility hub will provide a park-n-ride for future local or regional transit services that are being planned for the area. This will connect to the future pedestrian and bicyclist facilities to complete the "first and final" mile of a transit commute. The exact design and amenities of the mobility hub have not been determined at this time and will continue to be defined as the Dawson Trails project is developed.

Planning Area F-1 (PL 1.08) is planned to be a mix of commercial uses within this traffic study. The trip generation assumed that the entire parcel will be commercial space since this is the highest traffic generator between the two land use types (commercial vs. park-n-ride). If the mobility hub is constructed, then the trip generation is anticipated to be significantly lower than commercial businesses and services.

6.6 Year 2025 Background + Project (Phase 1) Intersection Capacity Analysis

This section discusses impacts associated with the addition of the Phase 1 of Dawson Trails development trips in the short-term scenario. The site-generated volumes for Phase 1 were added to the Year 2025

background volumes and are illustrated on **Figures 11A and 11B** (existing intersections) and **Figure 11C** (proposed intersections). These figures also illustrate the necessary traffic control and lane configurations for all of the study intersections and proposed accesses. The recommended improvements in the Year 2025 background scenario were assumed to be implemented. The analysis assumed the existing signal timing is held at the existing signalized intersections. Future signalized intersections had optimized timing with parameters similar to the existing timing plans for those on Plum Creek Parkway.

The results of the LOS calculations for the intersections are summarized in **Table 9**. The details of the LOS and delays for each movement are listed in **Table 2** (existing intersections) and **Table 10** (proposed intersections). The intersection Level of Service worksheets are attached in the **Appendix**.

Table 9: Year 2025 Background + Project (Phase 1) Overall Level of Service Summary

No.	Intersection	Traffic Control	AM Peak Hour	PM Peak Hour	Sat Peak Hour
1	Plum Creek Pkwy at Wilcox St	Signal	C	D	C
2	Plum Creek Pkwy at Perry St	Signal	B	C	C
3	Plum Creek Pkwy at Plum Creek Blvd	Signal	B	A	B
4	West Frontage Road at I-25 SB On-Ramp	*Frontage Rd. removed and On-Ramp remains.*			
5	Crystal Valley Pkwy at Plum Creek Blvd	Rdabt	A	A	A
6	Crystal Valley Pkwy at East Frontage Rd	*This intersection will be included in Crystal Valley NB Off-Ramp Intersection (Roundabout)*			
7	Crystal Valley Pkwy at Dawson Trails Blvd	Signal	C	C	D
8	Plum Creek Pkwy at I-25 SB Off-Ramp	Signal	B	C	B
9	Plum Creek Pkwy at I-25 NB Off-Ramp / On-Ramp	Signal	B	B	B
10	Plum Creek Pkwy at Prairie Hawk Dr / Dawson Trails Blvd	Signal	C	C	C
102	Dawson Trails Blvd at Collector Road H	Rdabt	A	A	A
103	Dawson Trails Blvd & E-1/F-2 Access	Stop	A (B)	A (B)	A (B)
104	Dawson Trails Blvd & E-2/F-3 Access	Rdabt	A	C	B
105	Dawson Trails Blvd & Collector Road B	Rdabt	A	A	A
106	Dawson Trails Blvd & Collector Road C	Rdabt	A	A	A
109	Collector Road A at Twin Oaks Road	Stop	A (B)	A (B)	A (B)

Note: For unsignalized intersections, the worse approach/movement LOS is also listed in parenthesis

The study intersections will operate acceptably in the short-term scenario with the addition of Phase 1 trips with the recommended mitigation measures (listed in **Section 6.3**). All movements and overall LOS were calculated to be LOS D or better in all peak periods. The proposed accesses intersections for Phase 1 are anticipated to operate overall at LOS A in the three peak hours with all movements at LOS D or better.

6.7 Year 2030 Background + Project (Phase 1 & 2) Intersection Capacity Analysis

This section discusses impacts associated with the completion of the second phase of the Dawson Trails development with the proposed mid-term scenario. The site-generated volumes for the first two phases were added to the Year 2030 background volumes and are illustrated on **Figures 12A and 12B** (existing intersections) and **Figure 12C** (proposed accesses). These figures also illustrate the necessary traffic control and lane configurations for all of the study intersections and proposed intersections. The recommended improvements in the previous scenarios were assumed to be implemented and signal timings were optimized as appropriate.

The results of the LOS calculations for the intersections are summarized in **Table 11**. The details of the LOS and delay for each movement are summarized in **Table 2** (existing intersections) and **Table 13** (proposed intersections). The intersection Level of Service worksheets are attached in the **Appendix**.

Table 11: Year 2030 Background + Project (Phase 1 & 2) Overall Level of Service Summary

No.	Intersection	Traffic Control	AM Peak Hour	PM Peak Hour	Sat Peak Hour
1	Plum Creek Pkwy at Wilcox St	Signal	C	D	D
2	Plum Creek Pkwy at Perry St	Signal	B	B	B
3	Plum Creek Pkwy at Plum Creek Blvd	Signal	B	A	B
5	Crystal Valley Pkwy at Plum Creek Blvd	Rdabt	A	B	A
6	Crystal Valley Pkwy at East Frontage Rd	*This intersection will be included in Crystal Valley NB Off-Ramp Intersection (Roundabout)*			
7	Crystal Valley Pkwy at Dawson Trails Blvd	Signal	D	D	D
8	Plum Creek Pkwy at I-25 SB Off-Ramp	Signal	B	B	B
9	Plum Creek Pkwy at I-25 NB Off-Ramp / On-Ramp	Signal	C	B	B
10	Plum Creek Pkwy at Prairie Hawk Dr / Dawson Trails Blvd	Signal	C	C	C
101	Dawson Trails Blvd at F-1 Access	Rdabt	A	A	A

No.	Intersection	Traffic Control	AM Peak Hour	PM Peak Hour	Sat Peak Hour
102	Dawson Trails Blvd at Collector Road H	Rdabt	A	A	A
103	Dawson Trails Blvd & E-1/F-2 Access	Stop	A (B)	A (B)	A (C)
104	Dawson Trails Blvd & E-2/F-3 Access	Rdabt	A	C	B
105	Dawson Trails Blvd & Collector Road B	Rdabt	A	A	B
106	Dawson Trails Blvd & Collector Road C	Rdabt	A	A	A
107	Dawson Trails Blvd & Collector Road D	Rdabt	A	A	A
109	Collector Road A at Twin Oaks Road	Signal	A	A	A

Note: For unsignalized intersections, the worse approach/movement LOS is also listed in parenthesis

All of the study intersections will operate acceptably in the mid-term scenario with the completion of Phases 1 & 2 of Dawson Trails project with the recommended mitigation measures (listed in **Section 6.3**). The intersection of Collector A and Twin Oaks Road was evaluated with a signal and roundabout. Both traffic control options were calculated to operate at LOS A in the three peak hours. The 95th percentile queues with the signal were estimated to extend to 110 feet or less and with a roundabout the queues were estimated to extend 50 feet or less.

6.8 Year 2040 Background + Project (Phases 1 & 2 & 3) Intersection Capacity Analysis

This section discusses impacts associated with the full buildout of the Dawson Trails development with the proposed long-term scenario. The site-generated volumes for the entire development were added to the Year 2040 background volumes and are illustrated on **Figures 13A and 13B** (existing intersections) and **Figure 13C** (proposed intersections). These figures also illustrate the necessary traffic control and lane configurations for all of the study intersections and proposed accesses. The recommended improvements in the previous scenarios were assumed to be implemented and signal timing was optimized.

The results of the LOS calculations for the intersections are summarized in **Table 12**. The details of the LOS and delays for each movement are summarized in **Table 2** (existing intersections) and **Table 13** (proposed intersections). The intersection Level of Service worksheets are attached in the **Appendix**.

Table 12: Year 2040 Background + Project (Full Buildout) Overall Level of Service Summary

No.	Intersection	Traffic Control	AM Peak Hour	PM Peak Hour	Sat Peak Hour
1	Plum Creek Pkwy at Wilcox St	Signal	C	D	D
2	Plum Creek Pkwy at Perry St	Signal	A	C	B
3	Plum Creek Pkwy at Plum Creek Blvd	Signal	B	C	C
5	Crystal Valley Pkwy at Plum Creek Blvd	Rdabt	B	B	A
6	Crystal Valley Pkwy at East Frontage Rd	*This intersection will be included in Crystal Valley NB Off-Ramp Intersection (Roundabout)*			
7	Crystal Valley Pkwy at Dawson Trails Blvd	Signal	D	**E**	**E**
8	Plum Creek Pkwy at I-25 SB Off-Ramp	Signal	B	C	C
9	Plum Creek Pkwy at I-25 NB Off-Ramp / On-Ramp	Signal	C	C	C
10	Plum Creek Pkwy at Prairie Hawk Dr / Dawson Trails Blvd	Signal	C	C	C
101	Dawson Trails Blvd at F-1 Access	Rdabt	A	B	B
102	Dawson Trails Blvd at Collector Road H	Rdabt	A	B	C
103	Dawson Trails Blvd & E-1/F-2 Access	Stop	A (B)	A (C)	A (C)
104	Dawson Trails Blvd & E-2/F-3 Access	Rdabt	B	C	D
105	Dawson Trails Blvd & Collector Road B	Rdabt	B	B	C
106	Dawson Trails Blvd & Collector Road C	Rdabt	B	B	C
107	Dawson Trails Blvd & Collector Road D	Rdabt	A	A	A
108	Dawson Trails Blvd at PA15/Park Access	Rdabt	A	A	A
109	Collector Road A at Twin Oaks Road	Signal	A	B	B

Note: For unsignalized intersections, the worse approach/movement LOS is also listed in parenthesis

All of the study intersections are predicted to operate acceptably in the long-term scenario with the full buildout of Dawson Trails with the recommended mitigation measures (listed in **Section 6.3**). One intersection has movements that are anticipated to operate below LOS D with the additional project trips:

- ***#7 – Dawson Trails Boulevard and Crystal Valley Parkway:*** This future signalized intersection was calculated to operate overall at LOS D in the AM peak hour, LOS E in the PM peak hour, and LOS E in the Saturday peak hour due to the high volumes on all movements, especially the turning

movements, and limited green time. During the morning peak hour the eastbound and southbound left-turn movements were estimated to operate at LOS E which is typical for left-turns at an arterial/arterial intersection at full buildout and protected only phasing. During the PM peak hour, the eastbound left-turn, eastbound through and the westbound left-turn were estimated to operate at LOS E. During the Saturday peak hour, all four left-turn movements and the eastbound and westbound through movements were estimated to operate at LOS E.

The 95th percentile queues for the eastbound left-turn movement were calculated to extend up to 308 feet and the queues for the westbound left-turn movement were calculated to be 451 feet or less. The 95th percentile queues for the northbound left-turn movement were estimated to be up to 47 feet. The 95th percentile queues for the southbound left-turn movement were estimated to be 543 feet or less.

Recommendations: No mitigation measures are recommended, except to ensure the storage length is adequate to accommodate the queue lengths and that signal timing is adjusted once volumes are generated. The ultimate design of this intersection already is expected to provide multiple left-turn and free right-turn lanes to accommodate the high volumes to/from the future Crystal Valley Interchange. The cycle length is assumed to be maxed out at 150 seconds. No other mitigation measures are available for consideration.

The intersection of Collector A and Twin Oaks Road was evaluated with a signal and roundabout. Both traffic control options were calculated to operate at LOS A in the three peak hours. The 95th percentile queues with the signal were estimated to extend to 320 feet or less and with a roundabout the queues were estimated to extend 50 feet or less.

Table 13 lists the estimated queues for all the study intersections. **Figure 14A** illustrates the recommended intersection design with mitigation measures as either background (non-project related) or project-implemented (by phase). **Figure 14B** illustrates the anticipated phasing of roadway construction, widening, and intersection connections. **Figure 15** summarizes the daily volume on the internal roadways with the full buildout.

7.0 Queuing Analysis

A queuing analysis was performed to determine if the average and 95th percentile queues would be accommodated by the existing or future storage length and if any of the queues impact an upstream intersection/access. **Table 13** provides the storage lengths and the 95th percentile queues for each existing

and future scenario as calculated by Synchro or Sidra (assuming each vehicle utilizes 25 feet of space). It should be noted that the 95th percentile queue length is a theoretical queue that is 1.65 standard deviations above the average queue length. In theory, the 95th percentile queue would be exceeded 5% of the time based on the average queue length, but it is also possible that a queue this long may not occur.

As shown in **Table 13**, majority of the queues are shorter than the provided storage length in all scenarios. Queues that exceed existing or future storage lengths are highlighted in blue text. The maximum queue length is highlighted in purple text. The study intersections that will be at or near capacity are anticipated to experience longer queues with any additional traffic. There are several intersections that will need long storage lengths to maintain the calculated queues. There are a couple existing auxiliary lanes that will not be able to be lengthened to accommodate a future queue since they are limited by adjacent accesses/intersections.

8.0 Dawson Trails Boulevard Access Plan

A high-level access management plan has been developed for Dawson Trails Boulevard through the project site. The purpose of the plan is to provide approximate locations of full movement access and provide the estimated distances between these intersections. Majority of the full movement intersections on Dawson Trails Boulevard are proposed to be multi-lane roundabouts with a signal at Crystal Valley Parkway/Collector A. **Figure 16** illustrates the access management plan for Dawson Trails Boulevard for full movement intersections.

The *Town of Castle Rock Transportation Design Criteria Manual (2018)* states that "full access to major arterials shall be limited to one-half (1/2) mile intervals or more, plus or minus 200-feet, in order to achieve good speed, capacity and optimal signal progression" in Section 3.2.3.4.B. As shown on **Figure 16**, the intersection spacing is less than ½ mile between all of the intersections. This criterion is unnecessary on a corridor that has roundabouts instead of signals since the required ½ mile spacing is to optimize progression of the signal timing along the main thoroughfare to maintain a speed of 45 mph. With roundabouts, progression is not needed and closer intersection spacing can be achieved with high efficiency. For those intersections identified as signal or potential signal, it is anticipated that progression can be achieved. A variance request has been submitted to the Town.

At this level of analysis, accesses between the full movement intersections have not been identified and will be decided and evaluated at the SDP/filing stage of this project. It is anticipated that any additional

access intersections will be restricted to ¾ movement or right-in, right-out to reduce congestion and improve safety along Dawson Trails Boulevard.

9.0 Conclusions

The Dawson Trails project proposes to develop up to 5,850 single-family or multi-family dwelling units and 3.2 million square feet (sq. ft.) of commercial space, including retail, office, light industrial, and flex space. The site plans to provide land for two elementary schools and one high school, as well as a large regional park with a recreational center. The Dawson Trails property is on the west side of I-25 on the south end of Castle Rock and in the vicinity of the future Crystal Valley Interchange. The development will be phased over time and this traffic study assumes the first phase will be completed by Year 2025, the second phase will be completed by Year 2030, and the final phase will be completed by Year 2040.

The project includes multiple access locations along the future extension of Prairie Hawk Drive, named Dawson Trails Boulevard south of Plum Creek Parkway and through the project. Internally other collector and local streets will be constructed to provide the most beneficial access into and around the site, which will be evaluated at the filing level. Several trails are planned to provide mobility and accessibly for people walking and biking.

The project is estimated to generate approximately 87,025 daily trips with about 6,700 trips occurring in the AM peak hour, 8,760 trips occurring in the PM peak hour, and 8,385 trips in the Saturday midday peak hour at full build-out. Nearly 35% of the total project trips will be home-based trips and internal to the Dawson Trails site between residential planning areas to/from the commercial space, schools, and recreational areas. **It was determined that the proposed roadway system can accommodate the projected traffic volumes for buildout conditions.** The phasing of the roadways and lane configurations are shown on **Figure 14**.

Figure 14 illustrates the recommended mitigation measures as either background (non-project related) or project-implemented. **Figure 15** summarizes the daily volume on the internal roadways with the full buildout. The responsibility and cost contribution of the anticipated roadway and intersection improvements are not a part of the traffic impact study but are anticipated be negotiated within future development agreements.

Tables and Figures:

Table 1 – Existing Overall Level of Service Summary [IN REPORT]
Table 2 – Peak Hour Intersection LOS Summary for Existing Intersections
Table 3 – Year 2025 Background Overall Level of Service Summary [IN REPORT]
Table 4 – Year 2030 Background Overall Level of Service Summary [IN REPORT]
Table 5 – Year 2040 Background Overall Level of Service Summary [IN REPORT]
Table 6A – Trip Generation (External)
Table 6B – Trip Generation (Internal)
Table 7 – Land Use Assumptions per Phase [IN REPORT]
Table 8 – Trip Distribution Summary [IN REPORT]
Table 9 – Year 2025 Background + Project (Phase 1) Overall Level of Service Summary [IN REPORT]
Table 10 – Peak Hour Intersection LOS Summary for Proposed Accesses
Table 11 – Year 2030 Background + Project (Phase 1 & 2) Overall Level of Service Summary [IN REPORT]
Table 12 – Year 2040 Background + Project (Full Buildout) Overall Level of Service Summary [IN REPORT]
Table 13 – Peak Hour Estimated Queue Lengths

Figure 1 – Vicinity Map
Figure 2 – Proposed Site Access and Phasing
Figures 3A and 3B – Year 2021 Existing Traffic Volumes
Figures 4A and 4B – Year 2025 Background Traffic Volumes
Figures 5A and 5B – Year 2030 Background Traffic Volumes
Figures 6A and 6B – Year 2040 Background Traffic Volumes
Figure 7 – Site Trip Distribution
Figures 8A and 8B – Phase 1 Site-Generated Traffic Volumes [Existing Intersections]
Figure 8C – Phase 1 Site-Generated Traffic Volumes [Access and Internal Intersections]
Figures 9A and 9B – Phases 1 & 2 Site-Generated Traffic Volumes [Existing Intersections]
Figure 9C – Phases 1 & 2 Site-Generated Traffic Volumes [Access Intersections]
Figures 10A and 10B – Full Buildout Site-Generated Traffic Volumes [Existing Intersections]
Figure 10C – Full Buildout Site-Generated Traffic Volumes [Access Intersections]
Figures 11A and 11B – Year 2025 Background + Phase 1 Traffic Volumes [Existing Intersections]
Figure 11C – Year 2025 Background + Phase 1 Traffic Volumes [Access Accesses]
Figures 12A and 12B – Year 2030 Background + Phase 1 & 2 Traffic Volumes [Existing Intersections]
Figure 12C – Year 2030 Background + Phase 1 & 2 Traffic Volumes [Access Accesses]
Figures 13A and 13B – Year 2040 Background + Full Buildout Traffic Volumes [Existing Intersections]
Figure 13C – Year 2040 Background + Full Buildout Traffic Volumes [Access Accesses]
Figure 14 – Intersection Geometry and Traffic Control (per Year and Phase)
Figure 15 – Full Buildout Roadway Classification and Phasing
Figure 16 – Proposed Full Movement Intersection Spacing

Table 2 - Peak Hour Intersection Level of Service Summary for Existing Intersections

Intersection and Lanes Groups	2021 Existing						2025 Background						2025 Bkgrd + Phase 1						2030 Background					
	AM Peak		PM Peak		Sat Peak		AM Peak		PM Peak		Sat Peak		AM Peak		PM Peak		Sat Peak		AM Peak		PM Peak		Sat Peak	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
STOP SIGN CONTROL																								
#4. Frontage Rd. (W.) & I-25 Southbound On-Ramp	**2**	**A**	**2**	**A**	**1**	**A**	**2**	**A**	**3**	**A**	**1**	**A**												
Northbound Through	0	A	0	A	0	A	0	A	0	A	0	A	Redesigned with future Dawson Trails Pkwy.						Redesigned with future Dawson Trails Pkwy.					
Northbound Right	0	A	0	A	0	A	0	A	0	A	0	A												
Southbound Left	8	A	8	A	8	A	8	A	8	A	8	A												
Southbound Through	0	A	0	A	0	A	0	A	0	A	0	A												
#5. Crystal Valley Pkwy & Plum Creek Blvd.	**2**	**A**	**3**	**A**	**3**	**A**																		
Eastbound Left	9	A	8	A	8	A	Analyzed as Roundabout						Analyzed as Roundabout						Analyzed as Roundabout					
Westbound Left	8	A	8	A	8	A																		
Northbound Left	15	C	17	C	14	B																		
Northbound Through	16	C	16	C	15	B																		
Northbound Right	9	A	9	A	9	A																		
Southbound Left	16	C	14	B	14	B																		
Southbound Through	17	C	16	C	15	B																		
Southbound Right	10	B	9	A	9	A																		
#6. Crystal Valley Pkwy & Frontage Rd. (E.)	**10**	**A**	**8**	**A**	**6**	**A**																		
Westbound Left	23	C	27	D	26	D	Relocated and Redesigned with Crystal Valley Interchange. Future analyses included in the Crystal Valley Interchange analysis and design as presented in the Technical Report (February 2022) provided by Apex Design for the Town of Castle Rock.																	
Westbound Right	15	B	12	B	11	B																		
Southbound Left	8	A	8	A	8	A																		
#7. Frontage Rd. (W.) & Territorial Rd.	**0**	**A**	**1**	**A**	**0**	**A**																		
Eastbound Left+Right	11	B	13	B	18	C	Relocated and Reconstructed with Interchange						Relocated and Reconstructed with Interchange						Relocated and Reconstructed with Interchange					
Northbound Left+Through	8	A	8	A	9	A																		
SIGNAL CONTROL																								
#1. Plum Creek Pkwy & Wilcox St.	**33**	**C**	**36**	**D**	**33**	**C**	**32**	**C**	**37**	**D**	**33**	**C**	**32**	**C**	**37**	**D**	**31**	**C**	**32**	**C**	**35**	**D**	**35**	**C**
Eastbound Left	27	C	33	C	59	E	28	C	42	D	51	D	30	C	35	C	23	C	30	C	30	C	30	C
Eastbound Through	28	C	39	D	34	C	28	C	42	D	32	C	28	C	42	D	35	C	26	C	34	C	34	C
Eastbound Right	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A
Westbound Left	20	C	25	C	21	C	20	C	26	C	21	C	21	C	26	C	21	C	19	B	23	C	23	C
Westbound Through	42	D	45	D	40	D	42	D	45	D	40	D	42	D	47	D	36	D	42	D	40	D	43	D
Westbound Right	31	C	36	D	31	C	32	C	38	D	32	C	32	C	38	D	29	C	31	C	34	C	34	C
Northbound Left	27	C	22	C	19	B	23	C	22	C	20	B	23	C	22	C	19	B	23	C	28	C	26	C
Northbound Through	28	C	29	C	24	C	28	C	27	C	25	C	28	C	28	C	25	C	29	C	38	D	33	C
Northbound Right	28	C	28	C	23	C	27	C	27	C	24	C	28	C	27	C	24	C	27	C	35	C	31	C
Southbound Left	32	C	22	C	21	C	27	C	20	B	20	C	27	C	20	B	20	B	26	C	26	C	24	C
Southbound Through	43	D	28	C	27	C	34	C	24	C	27	C	34	C	24	C	26	C	33	C	33	C	32	C
Southbound Right	40	D	42	D	34	C	32	C	32	C	32	C	33	C	33	C	32	C	31	C	46	D	36	D

Intersection and Lanes Groups	2030 Bkgrd + Phase 1 & 2						2040 Background						2040 Bkgrd + Full-Build					
	AM Peak		PM Peak		Sat Peak		AM Peak		PM Peak		Sat Peak		AM Peak		PM Peak		Sat Peak	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
STOP SIGN CONTROL																		
#4. Frontage Rd. (W.) & I-25 Southbound On-Ramp																		
Northbound Through	Redesigned with future Dawson Trails Pkwy.						Redesigned with future Dawson Trails Pkwy.						Redesigned with future Dawson Trails Pkwy.					
Northbound Right																		
Southbound Left																		
Southbound Through																		
#5. Crystal Valley Pkwy & Plum Creek Blvd.																		
Eastbound Left	Analyzed as Roundabout						Analyzed as Roundabout						Analyzed as Roundabout					
Westbound Left																		
Northbound Left																		
Northbound Through																		
Northbound Right																		
Southbound Left																		
Southbound Through																		
Southbound Right																		
#6. Crystal Valley Pkwy & Frontage Rd. (E.)																		
Westbound Left																		
Westbound Right																		
Southbound Left																		
#7. Frontage Rd. (W.) & Territorial Rd.																		
Eastbound Left+Right							Relocated and Reconstructed with Interchange						Relocated and Reconstructed with Interchange					
Northbound Left+Through																		
SIGNAL CONTROL																		
#1. Plum Creek Pkwy & Wilcox St.	**33**	**C**	**41**	**D**	**35**	**D**	**26**	**C**	**41**	**D**	**30**	**C**	**29**	**C**	**40**	**D**	**40**	**D**
Eastbound Left	35	C	45	D	42	D	37	D	50	D	34	C	49	D	54	D	53	D
Eastbound Through	26	C	50	D	34	C	29	C	45	D	39	D	27	C	35	C	39	D
Eastbound Right	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A
Westbound Left	19	B	26	C	24	C	19	B	26	C	22	C	19	B	27	C	25	C
Westbound Through	43	D	47	D	46	D	23	C	40	D	11	B	27	C	50	D	47	D
Westbound Right	31	C	37	D	35	D	11	B	32	C	8	A	11	B	30	C	17	B
Northbound Left	24	C	27	C	27	C	25	C	34	C	36	D	29	C	32	C	38	D
Northbound Through	30	C	36	D	34	C	32	C	48	D	43	D	36	D	49	D	45	D
Northbound Right	29	C	34	C	32	C	30	C	43	D	38	D	34	C	36	D	42	D
Southbound Left	27	C	25	C	25	C	27	C	37	D	34	C	29	C	45	D	36	D
Southbound Through	34	C	32	C	33	C	34	C	40	D	43	D	38	D	42	D	45	D
Southbound Right	34	C	23	C	24	C	24	C	28	C	31	C	25	C	24	C	25	C

Table 2 - Peak Hour Intersection Level of Service Summary for Existing Intersections

Intersection and Lanes Groups	2021 Existing						2025 Background						2025 Bkgrd + Phase 1						2030 Background					
	AM Peak		PM Peak		Sat Peak		AM Peak		PM Peak		Sat Peak		AM Peak		PM Peak		Sat Peak		AM Peak		PM Peak		Sat Peak	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
#2. Plum Creek Pkwy & Perry St.	**14**	**B**	**33**	**C**	**20**	**B**	**14**	**B**	**34**	**C**	**21**	**C**	**14**	**B**	**34**	**C**	**20**	**C**	**13**	**B**	**26**	**C**	**16**	**B**
Eastbound Left	6	A	13	B	9	A	6	A	14	B	9	A	6	A	14	B	9	A	6	A	14	B	10	B
Eastbound Through	22	C	36	D	26	C	22	C	36	D	26	C	22	C	36	D	26	C	21	C	33	C	11	B
Eastbound Right	19	B	28	C	21	C	19	B	28	C	22	C	19	B	28	C	22	C	18	B	23	C	9	A
Westbound Left	8	A	18	B	10	B	7	A	17	B	10	B	7	A	17	B	10	B	7	A	20	C	11	B
Westbound Through+Right	2	A	5	A	2	A	2	A	5	A	2	A	2	A	5	A	2	A	2	A	7	A	3	A
Northbound Left	41	D	32	C	38	D	41	D	32	C	39	D	41	D	32	C	39	D	41	D	32	C	38	D
Northbound Through	46	D	41	D	37	D	46	D	41	D	39	D	46	D	41	D	39	D	46	D	41	D	44	D
Northbound Right	50	D	138	F	56	E	50	D	144	F	57	E	50	D	144	F	57	E	50	D	49	D	39	D
Southbound Left	41	D	32	C	40	D	41	D	32	C	41	D	41	D	32	C	41	D	41	D	32	C	38	D
Southbound Through	48	D	40	D	45	D	48	D	40	D	46	D	48	D	40	D	41	D	47	D	40	D	48	D
Southbound Right	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	46	D	0	A	0	A	0	A
#3. Plum Creek Pkwy & Plum Creek Blvd./Fairgrounds Rd.	**12**	**B**	**8**	**A**	**13**	**B**	**13**	**B**	**8**	**A**	**13**	**B**	**13**	**B**	**8**	**A**	**13**	**B**	**12**	**B**	**8**	**A**	**13**	**B**
Eastbound Left	3	A	1	A	12	B	3	A	1	A	12	B	3	A	1	A	12	B	2	A	1	A	11	B
Eastbound Through+Right	1	A	3	A	2	A	1	A	3	A	2	A	1	A	3	A	2	A	1	A	4	A	2	A
Westbound Left	8	A	8	A	14	B	8	A	8	A	15	B	8	A	8	A	16	B	8	A	9	A	14	B
Westbound Through+Right	11	B	10	A	19	B	12	B	9	A	19	B	12	B	9	A	19	B	11	B	9	A	17	B
Northbound Left	38	D	34	C	28	C	38	D	35	C	28	C	38	D	35	C	28	C	38	D	36	D	34	C
Northbound Through+Right	29	C	29	C	26	C	28	C	29	C	25	C	28	C	29	C	25	C	29	C	29	C	29	C
Southbound Left	0	A	44	D	35	D	0	A	44	D	35	D	0	A	44	D	35	D	0	A	5	A	42	D
Southbound Through+Right	0	A	46	D	41	D	0	A	46	D	41	D	0	A	46	D	41	D	0	A	47	D	51	D
#7. (NEW) Dawson Trails Blvd. & Crystal Valley Pkwy							**21**	**C**	**20**	**C**	**21**	**C**	**24**	**C**	**24**	**C**	**29**	**C**	**19**	**B**	**20**	**B**	**21**	**C**
Eastbound Left	*Analyzed as Stop Control*						27	C	23	C	26	C	22	C	22	C	24	C	29	C	23	C	26	C
Eastbound Through+Right							28	C	24	C	27	C	26	C	25	C	28	C	29	C	24	C	27	C
Eastbound Through																								
Eastbound Right																								
Westbound Left							27	C	23	C	26	C	22	C	21	C	25	C	28	C	23	C	26	C
Westbound Through							28	C	24	C	27	C	25	C	25	C	29	C	29	C	24	C	27	C
Westbound Right							29	C	26	C	28	C	0	A	0	A	0	A	30	C	25	C	28	C
Northbound Left							15	B	21	C	20	B	22	C	26	C	26	C	16	B	20	C	19	B
Northbound Through							19	B	23	C	21	C	25	C	31	C	31	C	17	B	22	C	21	C
Northbound Right							18	B	22	C	20	B	0	A	0	A	0	A	17	B	21	C	20	B
Southbound Left							16	B	17	B	15	B	21	C	22	C	21	C	15	B	17	B	16	B
Southbound Through							20	B	18	B	23	C	22	C	24	C	35	C	16	B	18	B	22	C
Southbound Right							18	B	17	B	14	B	20	C	21	C	18	B	14	B	16	B	14	B
#8. Plum Creek Pkwy & I-25 SB Off-Ramp/W. Frontage Rd.	**28**	**C**	**29**	**C**	**26**	**C**	**29**	**C**	**33**	**C**	**27**	**C**	**17**	**B**	**23**	**C**	**18**	**B**	**15**	**B**	**15**	**B**	**15**	**B**
Eastbound Through+Right	20	B	39	D	32	C	18	B	38	D	33	C	13	B	29	C	21	C	14	B	8	A	20	B
Eastbound Through																								
Eastbound Right																								
Westbound Left	20	B	28	C	22	C	22	C	42	D	25	C	9	A	19	B	13	B	8	A	24	C	12	B
Westbound Through	19	B	26	C	21	C	21	C	31	C	24	C	6	A	14	B	0	A	9	A	13	B	0	A
Northbound Left	42	D	45	D	44	D	37	D	44	D	44	D												
Northbound Right	41	D	44	D	44	D	40	D	43	D	43	D												
Southbound Left	31	C	25	C	23	C	33	C	32	C	24	C	26	C	25	C	25	C	27	C	29	C	23	C
Southbound Left+Through+Right	32	C	27	C	24	C	37	D	37	D	25	C	24	C	21	C	24	C	26	C	31	C	23	C
Southbound Right							25	C	0	A	0	A	0	A	21	C	0	A	0	A	1	A	0	A
#9. Plum Creek Pkwy & I-25 NB Off-Ramp/On-Ramp	**12**	**B**	**12**	**B**	**10**	**A**	**14**	**B**	**12**	**B**	**12**	**B**	**17**	**B**	**16**	**B**	**13**	**B**	**18**	**B**	**13**	**B**	**14**	**B**
Eastbound Left	10	B	10	A	9	A	14	B	18	B	13	B	18	B	22	C	15	B	28	C	29	C	23	C
Eastbound Through	0	A	8	A	0	A	0	A	0	A	0	A	8	A	9	A	0	A	7	A	0	A	0	A
Westbound Through+Right	15	B	14	B	13	B	17	B	19	B	16	B	17	B	20	B	17	B	21	C	21	C	18	B
Westbound Right	20	B	14	B	15	B	23	C	17	B	18	B	23	C	17	B	18	B	20	C	16	B	17	B
Northbound Left	26	C	31	C	30	C	27	C	32	C	31	C	27	C	32	C	31	C	29	C	33	C	32	C
Northbound Left+Through+Right	27	C	33	C	31	C	28	C	34	C	31	C	28	C	34	C	32	C	29	C	35	C	32	C
Northbound Right	27	C	33	C	31	C	28	C	34	C	32	C	28	C	34	C	32	C	29	C	35	C	32	C

Intersection and Lanes Groups	2030 Bkgrd + Phase 1 & 2						2040 Background						2040 Bkgrd + Full-Build					
	AM Peak		PM Peak		Sat Peak		AM Peak		PM Peak		Sat Peak		AM Peak		PM Peak		Sat Peak	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
#2. Plum Creek Pkwy & Perry St.	**13**	**B**	**16**	**B**	**16**	**B**	**8**	**A**	**18**	**B**	**15**	**B**	**8**	**A**	**29**	**C**	**16**	**B**
Eastbound Left	6	A	12	B	10	B	6	A	12	B	13	B	6	A	15	B	15	B
Eastbound Through	21	C	5	A	11	B	0	A	5	A	2	A	0	A	31	C	2	A
Eastbound Right	18	B	3	A	9	A	0	A	1	A	1	A	0	A	18	B	1	A
Westbound Left	7	A	14	B	12	B	6	A	17	B	13	B	6	A	36	D	14	B
Westbound Through+Right	2	A	8	A	4	A	2	A	8	A	9	A	2	A	8	A	11	B
Northbound Left	41	D	32	C	38	D	41	D	41	D	41	D	45	D	41	D	41	D
Northbound Through	46	D	41	D	44	D	46	D	43	D	49	D	51	D	43	D	49	D
Northbound Right	50	D	48	D	39	D	46	D	51	D	42	D	46	D	51	D	41	D
Southbound Left	41	D	32	C	38	D	44	D	55	D	40	D	44	D	55	D	40	D
Southbound Through	47	D	40	D	48	D	52	D	46	D	49	D	52	D	46	D	49	D
Southbound Right	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A
#3. Plum Creek Pkwy & Plum Creek Blvd./Fairgrounds Rd.	**12**	**B**	**9**	**A**	**13**	**B**	**15**	**B**	**25**	**C**	**20**	**B**	**15**	**B**	**35**	**C**	**20**	**C**
Eastbound Left	2	A	1	A	11	B	15	B	5	A	13	B	2	A	10	B	13	B
Eastbound Through+Right	1	A	4	A	2	A	2	A	35	D	18	B	2	A	54	D	19	B
Westbound Left	8	A	10	A	16	B	2	A	30	C	17	B	10	B	31	C	20	B
Westbound Through+Right	11	B	9	A	17	B	10	B	8	A	12	B	15	B	8	A	12	B
Northbound Left	38	D	36	D	34	C	15	B	53	D	49	D	40	D	53	D	49	D
Northbound Through+Right	29	C	30	C	30	C	40	D	35	C	30	C	29	C	36	D	31	C
Southbound Left	0	A	45	D	42	D	28	C	50	D	45	D	0	A	50	D	45	D
Southbound Through+Right	0	A	47	D	51	D	0	A	53	D	53	D	0	A	53	D	53	D
#7. (NEW) Dawson Trails Blvd. & Crystal Valley Pkwy	**36**	**D**	**46**	**D**	**41**	**D**	**26**	**C**	**28**	**C**	**23**	**C**	**46**	**D**	**58**	**E**	**58**	**E**
Eastbound Left	32	C	46	D	31	C	27	C	27	C	27	C	50	D	79	E	80	E
Eastbound Through+Right							26	C	27	C	27	C						
Eastbound Through	38	D	54	D	39	D							46	D	76	E	74	E
Eastbound Right	33	C	48	D	33	C							39	D	37	D	44	D
Westbound Left	43	D	53	D	50	D	26	C	27	C	27	C	51	D	70	E	66	E
Westbound Through	12	B	37	D	27	C	26	C	27	C	27	C	34	C	52	D	65	E
Westbound Right	0	A	0	A	0	A	30	C	19	B	22	C	0	A	0	A	0	A
Northbound Left	31	C	43	D	37	D	14	B	20	B	18	B	55	D	53	D	67	E
Northbound Through	37	D	52	D	48	D	15	B	21	C	19	B	39	D	55	D	55	D
Northbound Right	0	A	0	A	0	A	15	B	21	C	19	B	0	A	0	A	0	A
Southbound Left	48	D	46	D	52	D	49	D	43	D	44	D	62	E	54	D	70	E
Southbound Through	28	C	32	C	34	C	9	A	8	A	10	A	39	D	39	D	34	C
Southbound Right	26	C	33	C	31	C	9	A	8	A	10	A	36	D	36	D	20	B
#8. Plum Creek Pkwy & I-25 SB Off-Ramp/W. Frontage Rd.	**15**	**B**	**19**	**B**	**15**	**B**	**15**	**B**	**23**	**C**	**22**	**C**	**15**	**B**	**24**	**C**	**23**	**C**
Eastbound Through+Right	10	A	24	C	21	C	10	B	23	C	20	C	11	B	26	C	22	C
Eastbound Through																		
Eastbound Right																		
Westbound Left	6	A	15	B	13	B	6	A	16	B	14	B	7	A	19	B	15	B
Westbound Through	5	A	0	A	0	A	6	A	19	B	25	C	6	A	20	B	26	C
Northbound Left																		
Northbound Right																		
Southbound Left	32	C	27	C	23	C	31	C	28	C	24	C	31	C	28	C	24	C
Southbound Left+Through+Right	32	C	27	C	23	C	31	C	28	C	24	C	31	C	28	C	24	C
Southbound Right	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A
#9. Plum Creek Pkwy & I-25 NB Off-Ramp/On-Ramp	**23**	**C**	**18**	**B**	**20**	**B**	**19**	**B**	**15**	**B**	**18**	**B**	**27**	**C**	**23**	**C**	**28**	**C**
Eastbound Left	45	D	49	D	47	D	35	C	33	C	37	D	50	D	51	D	45	D
Eastbound Through	7	A	0	A	0	A	6	A	0	A	0	A	6	A	0	A	0	A
Westbound Through+Right	29	C	29	C	23	C	20	C	26	C	24	C	37	D	50	D	53	D
Westbound Right	26	C	21	C	19	B	21	C	19	B	19	B	33	C	26	C	29	C
Northbound Left	29	C	33	C	32	C	32	C	33	C	33	C	32	C	35	C	33	C
Northbound Left+Through+Right	29	C	35	C	32	C	33	C	33	C	33	C	32	C	35	C	33	C
Northbound Right	29	C	35	C	32	C	33	C	36	D	34	C	33	C	38	D	35	C

Table 2 - Peak Hour Intersection Level of Service Summary for Existing Intersections

Intersection and Lanes Groups	2021 Existing						2025 Background						2025 Bkgrd + Phase 1						2030 Background					
	AM Peak		PM Peak		Sat Peak		AM Peak		PM Peak		Sat Peak		AM Peak		PM Peak		Sat Peak		AM Peak		PM Peak		Sat Peak	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
#10. Plum Creek Pkwy & Prairie Hawk Dr.							**11**	**B**	**15**	**B**	**11**	**B**	**23**	**C**	**24**	**C**	**22**	**C**	**24**	**C**	**24**	**C**	**23**	**C**
Eastbound Left							*9*	*A*	*10*	*A*	*9*	*A*	*14*	*B*	*18*	*B*	*17*	*B*	*18*	*B*	*16*	*B*	*12*	*B*
Eastbound Through							*8*	*A*	*9*	*A*	*8*	*A*							*22*	*C*	*21*	*C*	*16*	*B*
Eastbound Through+Right													*16*	*B*	*23*	*C*	*22*	*C*						
Eastbound Right																			*21*	*C*	*19*	*B*	*14*	*B*
Westbound Left													*14*	*B*	*17*	*B*	*17*	*B*	*16*	*B*	*15*	*B*	*12*	*B*
Westbound Through							*12*	*B*	*15*	*B*	*12*	*B*	*17*	*B*	*26*	*C*	*21*	*C*	*19*	*B*	*19*	*B*	*17*	*B*
Westbound Right							*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*
Northbound Left													*27*	*C*	*21*	*C*	*23*	*C*	*52*	*D*	*52*	*D*	*53*	*D*
Northbound Through													*30*	*C*	*24*	*C*	*25*	*C*	*32*	*C*	*33*	*C*	*31*	*C*
Northbound Right													*44*	*D*	*27*	*C*	*28*	*C*	*31*	*C*	*26*	*C*	*30*	*C*
Southbound Left							*23*	*C*	*25*	*C*	*23*	*C*	*23*	*C*	*23*	*C*	*21*	*C*	*30*	*C*	*46*	*D*	*47*	*D*
Southbound Through													*26*	*C*	*23*	*C*	*24*	*C*	*24*	*C*	*31*	*C*	*31*	*C*
Southbound Right							*23*	*C*	*23*	*C*	*23*	*C*	*26*	*C*	*23*	*C*	*24*	*C*	*23*	*C*	*31*	*C*	*32*	*C*
ROUNDABOUT																								
#5. Crystal Valley Pkwy & Plum Creek Blvd.								**A**		**A**		**A**		**A**		**A**		**A**		**A**		**A**		**A**
Eastbound	*Analyzed as Stop Control*						*4*	*A*	*5*	*A*	*4*	*A*	*4*	*A*	*5*	*A*	*4*	*A*	*5*	*A*	*9*	*A*	*7*	*A*
Westbound							*5*	*A*	*5*	*A*	*5*	*A*	*5*	*A*	*5*	*A*	*5*	*A*	*9*	*A*	*7*	*A*	*7*	*A*
Northbound							*5*	*A*	*8*	*A*	*5*	*A*	*4*	*A*	*6*	*A*	*5*	*A*	*7*	*A*	*24*	*C*	*13*	*B*
Southbound							*7*	*A*	*6*	*A*	*6*	*A*	*7*	*A*	*7*	*A*	*6*	*A*	*16*	*C*	*12*	*B*	*11*	*B*

Intersection and Lanes Groups	2030 Bkgrd + Phase 1 & 2						2040 Background						2040 Bkgrd + Full-Build					
	AM Peak		PM Peak		Sat Peak		AM Peak		PM Peak		Sat Peak		AM Peak		PM Peak		Sat Peak	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
#10. Plum Creek Pkwy & Prairie Hawk Dr.	**27**	**C**	**31**	**C**	**28**	**C**	**24**	**C**	**25**	**C**	**22**	**C**	**29**	**C**	**35**	**C**	**32**	**C**
Eastbound Left	*24*	*C*	*21*	*C*	*15*	*B*	*18*	*B*	*15*	*B*	*13*	*B*	*25*	*C*	*22*	*C*	*20*	*B*
Eastbound Through	*29*	*C*	*29*	*C*	*21*	*C*	*22*	*C*	*19*	*B*	*18*	*B*	*32*	*C*	*30*	*C*	*29*	*C*
Eastbound Through+Right																		
Eastbound Right	*28*	*C*	*30*	*C*	*20*	*B*	*20*	*B*	*17*	*B*	*16*	*B*	*29*	*C*	*32*	*C*	*31*	*C*
Westbound Left	*22*	*C*	*28*	*C*	*14*	*B*	*16*	*B*	*13*	*B*	*12*	*B*	*25*	*C*	*48*	*D*	*38*	*D*
Westbound Through	*22*	*C*	*20*	*C*	*18*	*B*	*20*	*C*	*19*	*B*	*16*	*B*	*23*	*C*	*22*	*C*	*19*	*B*
Westbound Right	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*
Northbound Left	*49*	*D*	*54*	*D*	*51*	*D*	*52*	*D*	*52*	*D*	*53*	*D*	*48*	*D*	*49*	*D*	*50*	*D*
Northbound Through	*31*	*C*	*39*	*D*	*36*	*D*	*32*	*C*	*35*	*C*	*33*	*C*	*34*	*C*	*41*	*D*	*36*	*D*
Northbound Right	*28*	*C*	*25*	*C*	*32*	*C*	*32*	*C*	*29*	*C*	*27*	*C*	*29*	*C*	*25*	*C*	*21*	*C*
Southbound Left	*30*	*C*	*50*	*D*	*48*	*D*	*30*	*C*	*45*	*D*	*47*	*D*	*30*	*C*	*45*	*D*	*47*	*D*
Southbound Through	*24*	*C*	*41*	*D*	*41*	*D*	*23*	*C*	*33*	*C*	*33*	*C*	*26*	*C*	*43*	*D*	*42*	*D*
Southbound Right	*22*	*C*	*35*	*D*	*36*	*D*	*23*	*C*	*32*	*C*	*33*	*C*	*22*	*C*	*32*	*C*	*33*	*C*
ROUNDABOUT																		
#5. Crystal Valley Pkwy & Plum Creek Blvd.		**A**		**B**		**A**		**A**		**A**		**A**		**B**		**B**		**A**
Eastbound	*5*	*A*	*10*	*A*	*8*	*A*	*5*	*A*	*10*	*A*	*7*	*A*	*5*	*A*	*11*	*B*	*8*	*A*
Westbound	*10*	*A*	*8*	*A*	*8*	*A*	*9*	*A*	*8*	*A*	*7*	*A*	*11*	*B*	*10*	*A*	*9*	*A*
Northbound	*6*	*A*	*14*	*B*	*9*	*A*	*5*	*A*	*13*	*B*	*9*	*A*	*6*	*A*	*17*	*C*	*11*	*B*
Southbound	*20*	*C*	*16*	*C*	*15*	*B*	*18*	*C*	*13*	*B*	*12*	*B*	*30*	*D*	*22*	*C*	*20*	*C*

Note: Delay represented in average seconds per vehicle. At stop-controlled intersections, the movements that are free flowing and were estimated to have zero delay are not listed.

Table 6A – Trip Generation and Phases (External Trips)

Planning Area	Land Use	Size	Unit	Non-Auto Factor	Internal Capture Adjust	Average Daily Trips				AM Peak Hour Trips				PM Peak Hour Trips				Saturday Peak Hour Trips				
						Rate	Total	In	Out	Rate	Total	In	Out	Rate	Total	In	Out	Peak Factor	Rate	Total	In	Out
A	ITE 210 - Single-Famly Detached Housing	471	Dwelling Units	0.95	0.65	9.44	2,746	1,373	1,373	0.74	215	54	161	0.99	288	181	107	0.875	0.93	237	128	109
B-1	ITE 210 - Single-Famly Detached Housing	484	Dwelling Units	0.95	0.65	9.44	2,821	1,411	1,410	0.74	221	55	166	0.99	296	186	110	0.875	0.93	243	131	112
B-2	ITE 210 - Single-Famly Detached Housing	228	Dwelling Units	0.95	0.65	9.44	1,329	665	664	0.74	104	26	78	0.99	139	88	51	0.875	0.93	115	62	53
C-1	ITE 210 - Single-Famly Detached Housing	481	Dwelling Units	0.95	0.65	9.44	2,804	1,402	1,402	0.74	220	55	165	0.99	294	185	109	0.875	0.93	242	131	111
C-2	ITE 210 - Single-Famly Detached Housing	908	Dwelling Units	0.95	0.65	9.44	5,293	2,647	2,646	0.74	415	104	311	0.99	555	350	205	0.875	0.93	456	246	210
D-1	ITE 210 - Single-Famly Detached Housing	955	Dwelling Units	0.95	0.65	9.44	5,567	2,784	2,783	0.74	436	109	327	0.99	584	368	216	0.875	0.93	480	259	221
D-1	ITE 220 - Multi-Family Housing (Low-Rise)	983	Dwelling Units	0.95	0.65	7.32	4,443	2,222	2,221	0.46	279	64	215	0.56	340	214	126	0.875	0.70	372	182	190
E-1	ITE 820 - Shopping Center	30.00	1,000 sq. ft.	0.95	0.50	37.75	538	269	269	0.94	13	8	5	3.81	54	26	28	1.0	4.50	64	33	31
	Pass-by Shopping Center (PM)	*34%*					*183*	*91*	*92*		*0*	*0*	*0*		*18*	*9*	*9*			*0*	*0*	*0*
	Pass-by Shopping Center (Sat)	*26%*					*0*	*0*	*0*		*0*	*0*	*0*		*0*	*0*	*0*			*17*	*9*	*8*
E-2	ITE 220 - Multi-Family Housing (Low-Rise)	400	Dwelling Units	0.95	0.65	7.32	1,808	904	904	0.46	114	26	88	0.56	138	87	51	0.875	0.70	151	74	77
	ITE 820 - Shopping Center	412.00	1,000 sq. ft.	0.95	0.50	37.75	7,388	3,694	3,694	0.94	184	114	70	3.81	746	358	388	1.0	4.50	881	458	423
	Pass-by Shopping Center (PM)	*34%*					*2,512*	*1,256*	*1,256*		*0*	*0*	*0*		*254*	*122*	*132*			*0*	*0*	*0*
	Pass-by Shopping Center (Sat)	*26%*					*0*	*0*	*0*		*0*	*0*	*0*		*0*	*0*	*0*			*229*	*119*	*110*
	ITE 710 - General Office	23.00	1,000 sq. ft.	0.95	0.60	9.74	128	64	64	1.16	15	13	2	1.15	15	2	13	1.0	0.53	7	4	3
F-1	ITE 110 - General Light Industrial (Flex)	135.00	1,000 sq. ft.	0.95	0.85	4.96	541	271	270	0.70	76	67	9	0.63	69	9	60	1.0	0.41	45	21	24
	ITE 710 - General Office (Flex)	135.00	1,000 sq. ft.	0.95	0.60	9.74	749	375	374	1.16	89	77	12	1.15	88	14	74	1.0	0.53	41	22	19
	ITE 710 - General Office	105.00	1,000 sq. ft.	0.95	0.50	9.74	486	243	243	1.16	58	50	8	1.15	57	9	48	1.0	0.53	26	14	12
F-2	ITE 220 - Multi-Family Housing (Low-Rise)	440	Dwelling Units	0.95	0.65	7.32	1,989	995	994	0.46	125	29	96	0.56	152	96	56	0.875	0.70	166	81	85
	ITE 710 - General Office	120.00	1,000 sq. ft.	0.95	0.60	9.74	666	333	333	1.16	79	68	11	1.15	79	13	66	1.0	0.53	36	19	17
	ITE 857 Discount Club	180.00	1,000 sq. ft.	0.95	0.65	42.46	4,719	2,360	2,359	0.80	89	54	35	4.19	466	233	233	1.0	6.37	708	347	361
F-3	ITE 220 - Multi-Family Housing (Low-Rise)	500	Dwelling Units	0.95	0.65	7.32	2,260	1,130	1,130	0.46	142	33	109	0.56	173	109	64	0.875	0.70	189	93	96
	ITE 710 - General Office	552.00	1,000 sq. ft.	0.95	0.60	9.74	3,065	1,533	1,532	1.16	365	314	51	1.15	362	58	304	1.0	0.53	167	90	77
	ITE 820 - Shopping Center	278.00	1,000 sq. ft.	0.95	0.50	37.75	4,985	2,493	2,492	0.94	124	77	47	3.81	503	241	262	1.0	4.50	594	297	297

Table 6A – Trip Generation and Phases (External Trips)

Planning Area	Land Use	Size	Unit	Non-Auto Factor	Internal Capture Adjust	Average Daily Trips				AM Peak Hour Trips				PM Peak Hour Trips				Saturday Peak Hour Trips				
						Rate	Total	In	Out	Rate	Total	In	Out	Rate	Total	In	Out	Peak Factor	Rate	Total	In	Out
F-3 cont'd	ITE 110 - General Light Industrial (Flex)	362.50	1,000 sq. ft.	0.95	0.85	4.96	1,452	726	726	0.70	205	180	25	0.63	184	24	160	1.0	0.41	120	56	64
	ITE 710 - General Office (Flex)	362.50	1,000 sq. ft.	0.95	0.60	9.74	2,013	1,007	1,006	1.16	240	206	34	1.15	238	38	200	1.0	0.53	110	59	51
	Pass-by Shopping Center (PM)	*34%*					*1,695*	*848*	*847*		*0*	*0*	*0*		*171*	*82*	*89*			*0*	*0*	*0*
	Pass-by Shopping Center (Sat)	*26%*					*0*	*0*	*0*		*0*	*0*	*0*		*0*	*0*	*0*			*154*	*77*	*77*
G-1	ITE 110 - General Light Industrial	375.00	1,000 sq. ft.	0.95	0.85	4.96	1,502	751	751	0.70	212	187	25	0.63	191	25	166	1.0	0.41	124	58	66
	ITE 110 - General Light Industrial (Flex)	60.00	1,000 sq. ft.	0.95	0.85	4.96	240	120	120	0.70	34	30	4	0.63	31	4	27	1.0	0.41	20	9	11
	ITE 710 - General Office (Flex)	60.00	1,000 sq. ft.	0.95	0.60	9.74	333	167	166	1.16	40	34	6	1.15	39	6	33	1.0	0.53	18	10	8
G-2	ITE 110 - General Light Industrial (Flex)	5.00	1,000 sq. ft.	0.95	0.85	4.96	20	10	10	0.70	3	3	0	0.63	3	0	3	1.0	0.41	2	1	1
	ITE 710 - General Office (Flex)	5.00		0.95	0.60	9.74	28	14	14	1.16	3	3	0	1.15	3	0	3	1.0	0.53	2	1	1
PLD 1.10	ITE 530 - High School	2000	Students	1.00	0.10	2.03	406	203	203	0.52	104	70	34	0.14	28	13	15	1.0	0.10	20	13	7
PLD 1.07	ITE 488 - Soccer Complex [assuming for all the fields/courts]	5	fields	0.90	0.80	71.33	257	129	128	0.99	4	2	2	16.43	59	39	20	1.0	40.10	144	69	75
PLD 1.04 & PLD 1.09	ITE 520 - Elementary School	900	Students	1.00	0.10	1.89	170	85	85	0.67	60	32	28	0.17	15	7	8	1.0	0.00	0	0	0
PLD 1.05	ITE 465 - Ice Skating Rink	60	1,000 sq. ft.	0.95	0.80		610	305	305	0.17	8	3	5	1.33	61	34	27	1.0	2.63	120	64	56
					Total Pass-by Trips:		*4,389*	*2,195*	*2,194*	*AM >*	*0*	*0*	*0*	*PM >*	*443*	*212*	*231*		*SAT >*	*399*	*205*	*194*
					Total New Trips:		*57,066*	*28,361*	*28,344*	*AM >*	*4,248*	*2,124*	*2,124*	*PM >*	*5,777*	*2,802*	*2,975*		*SAT >*	*5,503*	*2,832*	*2,671*
					Total Trips (New + Pass-By):		*61,455*	*30,556*	*30,538*	*AM >*	*4,248*	*2,124*	*2,124*	*PM >*	*6,220*	*3,014*	*3,206*		*SAT >*	*5,902*	*3,037*	*2,865*

Source: ITE Trip Generation 10th Edition, 2017. Non-Auto are trips where people walk, bike, use transit, or telecommute instead of travel in an automobile. Internal Capture Adjustment is the multi-purpose trips that go to more than one location within the site but do not drive on the arterial roadways or through the study intersections.

Multi-Family (low-rise)	2,323
Single-Family	3,527
Total DU	5,850
Retail	900
Office	800
Light Industrial	375
Flex	1,125
Total 1,000 Sq. Ft.	3,200

Table 6B – Trip Generation and Phases (Internal Trips)

Planning Area	Land Use	Size	Unit	Non-Auto Factor	Internal Capture Adjust	Average Daily Trips				AM Peak Hour Trips				PM Peak Hour Trips				Saturday Peak Hour Trips				
						Rate	Total	In	Out	Rate	Total	In	Out	Rate	Total	In	Out	Peak Factor	Rate	Total	In	Out
E-1	ITE 820 - Shopping Center	30.00	1,000 sq. ft.	0.95	0.40	37.75	430	215	215	0.94	11	7	4	3.81	43	21	22	1.0	4.50	51	27	24
E-2	ITE 820 - Shopping Center	412.00	1,000 sq. ft.	0.95	0.40	37.75	5,910	2,955	2,955	0.94	147	91	56	3.81	596	286	310	1.0	4.50	705	367	338
	ITE 710 - General Office	23.00	1,000 sq. ft.	0.95	0.35	9.74	74	37	37	1.16	9	8	1	1.15	9	1	8	1.0	0.53	4	2	2
F-1	TE 110 - General Light Industrial (Flex)	135.00	1,000 sq. ft.	0.95	0.15	4.96	95	48	47	0.70	13	11	2	0.63	12	2	10	1.0	0.41	8	4	4
	ITE 710 - General Office (Flex)	135.00	1,000 sq. ft.	0.95	0.35	9.74	437	219	218	1.16	52	45	7	1.15	52	8	44	1.0	0.53	24	13	11
	ITE 710 - General Office	105.00	1,000 sq. ft.	0.95	0.40	9.74	389	195	194	1.16	46	40	6	1.15	46	7	39	1.0	0.53	21	11	10
F-2	ITE 710 - General Office	120.00	1,000 sq. ft.	0.95	0.35	9.74	389	195	194	1.16	46	40	6	1.15	46	7	39	1.0	0.53	21	11	10
	ITE 857 Discount Club	180.00	1,000 sq. ft.	0.95	0.65	42.46	4,719	2,360	2,359	0.80	89	54	35	4.19	466	233	233	1.0	6.37	708	347	361
F-3	ITE 710 - General Office	552.00	1,000 sq. ft.	0.95	0.35	9.74	1,788	894	894	1.16	213	183	30	1.15	211	34	177	1.0	0.53	97	52	45
	ITE 820 - Shopping Center	278.00	1,000 sq. ft.	0.95	0.40	37.75	3,988	1,994	1,994	0.94	99	61	38	3.81	402	193	209	1.0	4.50	475	238	237
	ITE 110 - General Light Industrial (Flex)	362.50	1,000 sq. ft.	0.95	0.15	4.96	256	128	128	0.70	36	32	4	0.63	33	4	29	1.0	0.41	21	10	11
	ITE 710 - General Office (Flex)	362.50	1,000 sq. ft.	0.95	0.35	9.74	1,174	587	587	1.16	140	120	20	1.15	139	22	117	1.0	0.53	64	35	29
	Pass-by Shopping Center (PM)	*0%*					*0*	*0*	*0*		*0*	*0*	*0*		*0*	*0*	*0*			*0*	*0*	*0*
	Pass-by Shopping Center (Sat)	*0%*					*0*	*0*	*0*		*0*	*0*	*0*		*0*	*0*	*0*			*0*	*0*	*0*
G-1	ITE 110 - General Light Industrial	375.00	1,000 sq. ft.	0.95	0.15	4.96	265	133	132	0.70	37	33	4	0.63	34	4	30	1.0	0.41	22	10	12
	ITE 110 - General Light Industrial (Flex)	60.00	1,000 sq. ft.	0.95	0.15	4.96	42	21	21	0.70	6	5	1	0.63	5	1	4	1.0	0.41	4	2	2
	ITE 710 - General Office (Flex)	60.00	1,000 sq. ft.	0.95	0.35	9.74	194	97	97	1.16	23	20	3	1.15	23	4	19	1.0	0.53	11	6	5
G-2	ITE 110 - General Light Industrial (Flex)	5.00	1,000 sq. ft.	0.95	0.15	4.96	4	2	2	0.70	0	0	0	0.63	0	0	0	1.0	0.41	0	0	0
	ITE 710 - General Office (Flex)	5.00		0.95	0.35	9.74	16	8	8	1.16	2	2	0	1.15	2	0	2	1.0	0.53	1	1	0
PLD 1.10	ITE 530 - High School	2000	Students	1.00	0.90	2.03	3,654	1,827	1,827	0.52	936	627	309	0.14	252	121	131	1.0	0.10	180	113	67
PLD 1.07	ITE 488 - Soccer Complex [assuming for all the fields/courts]	5	fields	0.90	0.20	71.33	64	32	32	0.99	1	1	0	16.43	15	10	5	1.0	40.10	36	17	19
PLD 1.04 & PLD 1.09	ITE 520 - Elementary School	900	Students	1.00	0.90	1.89	1,531	766	765	0.67	543	293	250	0.17	138	66	72	1.0	0.00	0	0	0
PLD 1.05	ITE 465 - Ice Skating Rink	60	1,000 sq. ft.	0.95	0.20		150	75	75	0.17	2	1	1	1.33	15	8	7	1.0	2.63	30	16	14
					Total New Trips:		*25,569*	*12,788*	*12,781*	*AM >*	*2,451*	*1,674*	*777*	*PM >*	*2,539*	*1,032*	*1,507*		*SAT >*	*2,483*	*1,282*	*1,201*

Source : ITE Trip Generation 10th Edition, 2017.

Table 10 - Peak Hour Intersection Level of Service Summary for (Proposed Accesses)

Intersection and Critical Lanes Groups	2025 Bkgrd + Phase 1						2030 Bkgrd + Phase 1 & 2						2040 Bkgrd + Full-Build					
	AM Peak		PM Peak		Sat Peak		AM Peak		PM Peak		Sat Peak		AM Peak		PM Peak		Sat Peak	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
ROUNDABOUT																		
#101. Dawson Trails Blvd. & F-1 Access								**A**		**A**		**A**		**A**		**B**		**B**
Eastbound Approach													*6*	*A*	*14*	*B*	*20*	*C*
Westbound Approach							*4*	*A*	*5*	*A*	*5*	*A*	*10*	*A*	*32*	*D*	*14*	*B*
Northbound Approach							*4*	*A*	*6*	*A*	*5*	*A*	*8*	*A*	*9*	*A*	*9*	*A*
Southbound Approach							*4*	*A*	*5*	*A*	*7*	*A*	*7*	*A*	*16*	*C*	*16*	*C*
#102. Dawson Trails Blvd. & Collector Road H		**A**		**A**		**A**		**A**		**A**		**A**		**A**		**B**		**C**
Eastbound Approach							*4*	*A*	*6*	*A*	*10*	*A*	*6*	*A*	*13*	*B*	*21*	*C*
Westbound Approach	*4*	*A*	*5*	*A*	*6*	*A*	*5*	*A*	*6*	*A*	*8*	*A*	*8*	*A*	*13*	*B*	*27*	*D*
Northbound Approach	*4*	*A*	*4*	*A*	*5*	*A*	*5*	*A*	*5*	*A*	*5*	*A*	*8*	*A*	*7*	*A*	*8*	*A*
Southbound Approach	*4*	*A*	*5*	*A*	*10*	*A*	*4*	*A*	*6*	*A*	*10*	*B*	*6*	*A*	*14*	*B*	*30*	*D*
#104. Dawson Trails Blvd. & E-2/F-3 Access		**A**		**A**		**A**		**A**		**C**		**B**		**B**		**C**		**D**
Eastbound Approach	*3*	*A*	*4*	*A*	*5*	*A*	*8*	*A*	*14*	*B*	*16*	*C*	*14*	*B*	*15*	*C*	*23*	*C*
Westbound Approach							*5*	*A*	*22*	*C*	*12*	*B*	*10*	*A*	*18*	*C*	*26*	*D*
Northbound Approach	*5*	*A*	*5*	*A*	*5*	*A*	*8*	*A*	*11*	*B*	*11*	*B*	*12*	*B*	*21*	*C*	*20*	*C*
Southbound Approach	*4*	*A*	*5*	*A*	*9*	*A*	*7*	*A*	*18*	*C*	*18*	*C*	*11*	*B*	*24*	*C*	*34*	*D*
#105. Dawson Trails Blvd. & Collector Road B		**A**		**B**		**C**		**A**		**A**		**B**		**B**		**B**		**C**
Eastbound Approach	*6*	*A*	*8*	*A*	*13*	*B*	*9*	*A*	*12*	*B*	*19*	*C*	*17*	*C*	*18*	*C*	*28*	*D*
Westbound Approach							*5*	*A*	*9*	*A*	*11*	*B*	*7*	*A*	*17*	*C*	*15*	*B*
Northbound Approach	*9*	*A*	*8*	*A*	*10*	*A*	*9*	*A*	*10*	*B*	*12*	*B*	*14*	*B*	*16*	*C*	*18*	*C*
Southbound Approach	*5*	*A*	*13*	*B*	*24*	*C*	*5*	*A*	*7*	*A*	*8*	*A*	*7*	*A*	*9*	*A*	*11*	*B*
#106. Dawson Trails Blvd. & Collector Road C		**A**		**A**		**A**		**A**		**A**		**A**		**B**		**B**		**C**
Eastbound Approach	*3*	*A*	*3*	*A*	*5*	*A*	*6*	*A*	*7*	*A*	*13*	*B*	*13*	*B*	*12*	*B*	*33*	*D*
Westbound Approach							*5*	*A*	*7*	*A*	*8*	*A*	*8*	*A*	*14*	*B*	*24*	*C*
Northbound Approach	*3*	*A*	*3*	*A*	*3*	*A*	*7*	*A*	*6*	*A*	*8*	*A*	*13*	*B*	*10*	*B*	*12*	*B*
Southbound Approach	*3*	*A*	*3*	*A*	*4*	*A*	*5*	*A*	*6*	*A*	*8*	*A*	*7*	*A*	*12*	*B*	*11*	*B*
#107. Dawson Trails Blvd. & Collector Road D								**A**		**A**		**A**		**A**		**A**		**A**
Eastbound Approach							*5*	*A*	*5*	*A*	*7*	*A*	*10*	*A*	*7*	*A*	*17*	*C*
Westbound Approach							*4*	*A*	*4*	*A*	*5*	*A*	*7*	*A*	*6*	*A*	*7*	*A*
Northbound Approach							*4*	*A*	*4*	*A*	*6*	*A*	*6*	*A*	*6*	*A*	*7*	*A*
#108. Dawson Trails Blvd. & G-2 Access / HS Access														**A**		**A**		**A**
Eastbound Approach													*5*	*A*	*4*	*A*	*5*	*A*
Westbound Approach													*4*	*A*	*5*	*A*	*4*	*A*
Northbound Approach													*5*	*A*	*5*	*A*	*4*	*A*
Southbound Approach													*4*	*A*	*4*	*A*	*5*	*A*
STOP SIGN CONTROL																		
#103. Dawson Trails Blvd. & E-1/F-2 Access (3/4 Mvmt)	**0**	**A**	**0**	**A**	**0**	**A**	**0**	**A**	**1**	**A**	**1**	**A**	**1**	**A**	**1**	**A**	**1**	**A**
Eastbound Right							*10*	*A*	*12*	*B*	*16*	*C*	*11*	*B*	*19*	*C*	*22*	*C*
Westbound Right	*9*	*A*	*10*	*A*	*10*	*A*	*10*	*A*	*10*	*B*	*11*	*B*	*13*	*B*	*0*	*A*	*19*	*C*
Northbound Left							*8*	*A*	*10*	*B*	*13*	*B*	*9*	*A*	*16*	*C*	*15*	*B*
Southbound Left	*8*	*A*	*8*	*A*	*9*	*A*	*9*	*A*	*9*	*A*	*10*	*A*	*11*	*B*	*12*	*B*	*14*	*B*
#109. Collector Road A & Twin Oaks Road	**1**	**A**	**2**	**A**	**2**	**A**												
Eastbound Left+Through+Right	*10*	*B*	*12*	*B*	*12*	*B*												
Westbound Left+Through+Right	*10*	*B*	*12*	*B*	*13*	*B*												
Southbound Left	*8*	*A*	*8*	*A*	*8*	*A*												
SIGNAL CONTROL																		
#109. Collector Road A & Twin Oaks Road							**4**	**A**	**8**	**A**	**8**	**A**	**5**	**A**	**16**	**B**	**18**	**B**
Eastbound Left+Through+Right							*28*	*C*	*16*	*B*	*12*	*B*	*27*	*C*	*23*	*C*	*29*	*C*
Westbound Left							*27*	*C*	*17*	*B*	*13*	*B*	*27*	*C*	*26*	*C*	*37*	*D*
Westbound Through+Right							*29*	*C*	*20*	*B*	*13*	*B*	*30*	*C*	*33*	*C*	*36*	*D*
Northbound Through+Right							*3*	*A*	*6*	*A*	*6*	*A*	*3*	*A*	*18*	*B*	*19*	*B*
Southbound Left							*3*	*A*	*8*	*A*	*9*	*A*	*4*	*A*	*13*	*B*	*16*	*B*
Southbound Through+Right							*2*	*A*	*6*	*A*	*6*	*A*	*3*	*A*	*10*	*A*	*10*	*B*

Note: Delay represented in average seconds per vehicle. At stop-controlled intersections, the movements that are free flowing and were estimated to have zero delay are not listed.

Table 13 - Peak Hour Estimated Queues

Intersection and Lanes Groups	Existing Storage (feet)	Future Minimum Storage (feet)	2021 Existing 95th % Q			2025 Background 95th % Q			2025 Bkgrd + Ph. 1 95th % Q			2030 Background 95th % Q			2030 Bkgrd + Phase 1 & 2 95th % Q			2040 Background 95th % Q			2040 Bkgrd + Full-Build 95th % Q		
			AM	PM	Sat	AM	PM	Sat	AM	PM	Sat	AM	PM	Sat	AM	PM	Sat	AM	PM	Sat	AM	PM	Sat
#1. Plum Creek Pkwy & Wilcox St.			*Signalized*			*Signalized*			*Signalized*			*Signalized*			*Signalized*			*Signalized*			*Signalized*		
Eastbound Left	280'	475'	63'	172'	146'	66'	198'	194'	74'	171'	18'	134'	191'	187'	193'	*332'*	*274'*	195'	*397'*	*353'*	280'	*474'*	*381'*
Eastbound Through	-	-	183'	405'	287'	177'	392'	296'	177'	392'	296'	210'	477'	399'	210'	576'	339'	271'	759'	601'	273'	696'	586'
Eastbound Right	250'	-	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'
Westbound Left	185'	-	50'	39'	51'	91'	40'	53'	109'	45'	57'	94'	37'	58'	*111'*	61'	81'	47'	36'	47'	59'	51'	86'
Westbound Through	-	-	361'	377'	323'	416'	337'	315'	416'	345'	307'	442'	371'	405'	443'	395'	404'	223'	445'	419'	538'	447'	546'
Westbound Right	-	-	9'	98'	77'	65'	97'	78'	65'	96'	77'	69'	96'	94'	68'	*102'*	92'	20'	101'	26'	20'	52'	19'
Northbound Left	190'	-	*185'*	118'	108'	111'	56'	75'	111'	56'	75'	123'	68'	95'	123'	62'	95'	153'	82'	118'	153'	75'	134'
Northbound Through	-	-	119'	131'	108'	145'	138'	115'	147'	140'	117'	198'	180'	168'	207'	180'	181'	235'	214'	198'	250'	229'	260'
Northbound Right	195'	-	0'	0'	0'	7'	0'	0'	7'	26'	10'	46'	0'	0'	49'	25'	13'	46'	0'	5'	55'	*62'*	41'
Southbound Left	130'	210'	26'	126'	108'	57'	127'	111'	57'	127'	111'	59'	*157'*	*139'*	59'	*143'*	*139'*	73'	*189'*	*173'*	73'	*196'*	*209'*
Southbound Through	-	-	90'	116'	152'	221'	118'	155'	222'	120'	167'	196'	174'	202'	213'	175'	216'	187'	196'	245'	204'	203'	323'
Southbound Right	130'	-	0'	63'	69'	0'	34'	47'	0'	34'	48'	2'	71'	63'	32'	*178'*	*167'*	71'	*207'*	*182'*	112'	*234'*	*234'*
#2. Plum Creek Pkwy & Perry St.			*Signalized*			*Signalized*			*Signalized*			*Signalized*			*Signalized*			*Signalized*			*Signalized*		
Eastbound Left	170'	-	45'	6'	55'	51'	24'	60'	52'	26'	61'	64'	32'	37'	73'	31'	68'	*182'*	73'	*218'*	*205'*	227'	*272'*
Eastbound Through	-	-	178'	326'	270'	168'	415'	273'	168'	415'	271'	208'	690'	365'	207'	538'	364'	70'	651'	138'	75'	723'	187'
Eastbound Right	70'	-	64'	68'	*80'*	62'	*73'*	*79'*	63'	72'	*78'*	*85'*	58'	54'	*84'*	61'	53'	1'	64'	4'	1'	*95'*	11'
Westbound Left	100'	-	32'	89'	*103'*	32'	82'	*103'*	32'	82'	*103'*	33'	*111'*	93'	33'	*111'*	93'	37'	*163'*	*112'*	37'	*157'*	*112'*
Westbound Through+Right	-	-	226'	193'	335'	212'	143'	313'	212'	144'	314'	238'	234'	276'	238'	238'	278'	700'	351'	559'	707'	355'	567'
Northbound Left	185'	-	75'	157'	158'	76'	160'	161'	76'	160'	161'	83'	168'	182'	83'	168'	182'	92'	*232'*	*216'*	92'	*232'*	*216'*
Northbound Through	-	-	52'	132'	117'	55'	135'	120'	55'	135'	120'	59'	138'	139'	59'	138'	139'	70'	162'	166'	70'	162'	166'
Northbound Right	65'	-	1'	64'	53'	2'	65'	54'	2'	65'	54'	6'	*138'*	*75'*	6'	*138'*	*75'*	18'	*189'*	*99'*	18'	*189'*	*99'*
Southbound Left	120'	-	78'	*174'*	*150'*	78'	*178'*	*153'*	78'	*178'*	*153'*	87'	*186'*	*169'*	87'	*186'*	*169'*	97'	*279'*	*201'*	97'	*279'*	*201'*
Southbound Through	-	-	73'	136'	126'	74'	139'	136'	74'	139'	136'	81'	147'	143'	81'	147'	143'	97'	179'	169'	97'	179'	169'
Southbound Right	120'	-	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'
#3. Plum Creek Pkwy & Plum Creek Blvd./Fairgrounds Rd.			*Signalized*			*Signalized*			*Signalized*			*Signalized*			*Signalized*			*Signalized*			*Signalized*		
Eastbound Left	70'	-	6'	5'	15'	7'	9'	51'	7'	9'	52'	6'	6'	56'	7'	6'	57'	17'	16'	*80'*	17'	16'	*80'*
Eastbound Through+Right	-	-	21'	126'	77'	23'	189'	197'	24'	189'	197'	48'	280'	313'	51'	283'	316'	165'	963'	441'	168'	974'	446'
Westbound Left	55'	100'	34'	9'	16'	35'	27'	42'	36'	31'	61'	36'	50'	53'	43'	*96'*	*93'*	32'	17'	26'	40'	43'	49'
Westbound Through+Right	-	-	258'	131'	226'	248'	124'	269'	248'	124'	270'	263'	131'	272'	265'	133'	275'	316'	147'	222'	320'	150'	225'
Northbound Left	Continuous	-	185'	140'	117'	237'	215'	187'	237'	215'	187'	277'	243'	236'	277'	243'	236'	*384'*	320'	373'	*384'*	320'	373'
Northbound Through+Right	-	-	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	7'	0'	0'	24'	0'	0'	0'	0'	0'	13'	0'
Southbound Left	110'	-	0'	4'	2'	0'	6'	7'	0'	6'	7'	0'	6'	10'	0'	6'	10'	0'	6'	*15'*	0'	6'	*15'*
Southbound Through+Right	-	-	0'	1'	2'	0'	12'	31'	0'	12'	31'	0'	11'	38'	0'	11'	38'	0'	11'	42'	0'	11'	42'
#4. Frontage Rd. (W.) & I-25 Southbound On-Ramp			*Free Flow*			*Free Flow*						*Free Flow*											
Northbound Through	-	-	0'	0'	0'	0'	0'	0'	*Frontage Rd. removed. Only On-Ramp*			0'	0'	0'	*Frontage Rd. removed. Only On-Ramp*			*Frontage Rd. removed. Only On-Ramp*			*Frontage Rd. removed. Only On-Ramp*		
Northbound Right	80'	-	0'	0'	0'	0'	0'	0'				0'	0'	0'									
Southbound Left	260'	-	8'	12'	4'	9'	18'	10'				14'	34'	25'									
Southbound Through	-	-	0'	0'	0'	0'	0'	0'				0'	0'	0'									

Table 13 - Peak Hour Estimated Queues

Intersection and Lanes Groups	Existing Storage (feet)	Future Minimum Storage (feet)	2021 Existing 95th % Q			2025 Background 95th % Q			2025 Bkgrd + Ph. 1 95th % Q			2030 Background 95th % Q			2030 Bkgrd + Phase 1 & 2 95th % Q			2040 Background 95th % Q			2040 Bkgrd + Full-Build 95th % Q		
			AM	PM	Sat	AM	PM	Sat	AM	PM	Sat	AM	PM	Sat	AM	PM	Sat	AM	PM	Sat	AM	PM	Sat
#5. Crystal Valley Pkwy & Plum Creek Blvd.			*Stop-Control (NB/SB)*			*Roundabout*			*Roundabout*			*Roundabout*			*Roundabout*			*Roundabout*			*Roundabout*		
Eastbound Left	450'	-	0'	3'	3'																		
Eastbound Through	-	-	0'	0'	0'																		
Eastbound Right	315'	-	0'	0'	0'																		
Westbound Left	295'	-	0'	0'	0'																		
Westbound Through	-	-	0'	0'	0'																		
Westbound Right	230'	-	0'	0'	0'																		
Northbound Left	27000%	-	8'	20'	10'																		
Northbound Through	-	-	0'	3'	0'																		
Northbound Right	120'	-	0'	0'	0'																		
Southbound Left	185'	-	10'	5'	5'																		
Southbound Through	-	-	3'	0'	3'																		
Southbound Right	Continuous	-	8'	3'	3'																		
Eastbound Left+Through+Right	-	-				17'	36'	23'	17'	37'	24'	28'	107'	65'	33'	126'	76'	30'	115'	68'	37'	152'	87'
Westbound Left+Through+Right	-	-				29'	23'	21'	29'	24'	22'	80'	51'	52'	85'	58'	59'	84'	55'	55'	132'	82'	73'
Northbound Left+Through+Right	-	-				8'	16'	10'	3'	7'	4'	24'	61'	34'	11'	23'	15'	10'	20'	13'	12'	29'	18'
Southbound Left+Through+Right	-	-				15'	14'	10'	16'	16'	11'	31'	31'	24'	47'	55'	46'	39'	36'	27'	79'	82'	71'
#6. Crystal Valley Pkwy & Frontage Rd. (E.)			*Stop-Control (EB/WB)*																				
Eastbound Left	-	360'				*Relocated and Redesigned with Crystal Valley Interchange. Future analyses included in the Crystal Valley Interchange analysis and design as presented in the Technical Report (February 2022) provided by Apex Design for the Town of Castle Rock.*																	
Eastbound Through+Right	-	-																					
Westbound Left	Continuous	250'	15'	***18'***	***18'***																		
Westbound Through+Right	-	-																					
Westbound Through	-	-																					
Westbound Right	-	150'	***93'***	45'	35'																		
Northbound Left	-	150'																					
Northbound Through+Right	-	-	0'	0'	0'																		
Southbound Left	545'	310'	23'	***25'***	18'																		
Southbound Through	-	-																					
Southbound Right	-	420'																					
#7. Frontage Rd. (W.) & Territorial Rd.			*Stop-Control (EB)*																				
Eastbound Left+Right	-	-	3'	3'	5'	*Reconstructed*			*Reconstructed*			*Reconstructed*			*Reconstructed*			*Reconstructed*			*Reconstructed*		
Northbound Left+Through	-	-	0'	0'	0'																		
#7. (NEW) Dawson Trails Blvd. & Crystal Valley Pkwy						*Signalized*			*Signalized*			*Signalized*			*Signalized*			*Signalized*			*Signalized*		
Eastbound Left	-	500'				8'	10'	10'	48'	54'	72'	10'	8'	10'	86'	117'	66'	12'	10'	12'	102'	***178'***	135'
Eastbound Through+Right	-	-				14'	10'	14'	113'	67'	87'	13'	10'	13'				12'	10'	13'			
Eastbound Through	-	-													170'	162'	174'				220'	277'	358'
Eastbound Right	-	200'													0'	0'	0'				0'	0'	0'
Westbound Left	-	500'				15'	15'	16'	45'	140'	88'	16'	15'	16'	324'	430'	357'	12'	14'	15'	323'	***451'***	378'
Westbound Through	-	-				25'	24'	25'	60'	147'	108'	25'	23'	24'	149'	434'	361'	18'	19'	22'	115'	361'	448'
Westbound Right	-	520'				0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	***78'***	2'	0'	0'	0'	0'
Northbound Left	-	200'				5'	8'	3'	5'	7'	3'	5'	8'	3'	18'	29'	20'	5'	11'	4'	45'	***47'***	43'
Northbound Through	-	-										99'	92'	109'	142'	188'	178'	51'	56'	67'	222'	218'	274'
Northbound Through+Right	-	-				99'	92'	108'	133'	166'	215'												
Northbound Right	-	1000'				0'	0'	0'	0'	0'	0'	***0'***	***0'***	***0'***	0'	0'	0'	9'	0'	***15'***	0'	0'	0'
Southbound Left	-	500'				44'	102'	***124'***	47'	133'	172'	42'	105'	***125'***	55'	217'	235'	82'	198'	173'	161'	457'	***543'***
Southbound Through	-	-				105'	108'	386'	117'	198'	607'	102'	109'	392'	116'	183'	275'	32'	38'	109'	192'	216'	356'
Southbound Right	-	200'				0'	0'	0'	0'	0'	0'	***0'***	***0'***	***0'***	0'	55'	50'	0'	0'	0'	17'	57'	***105'***

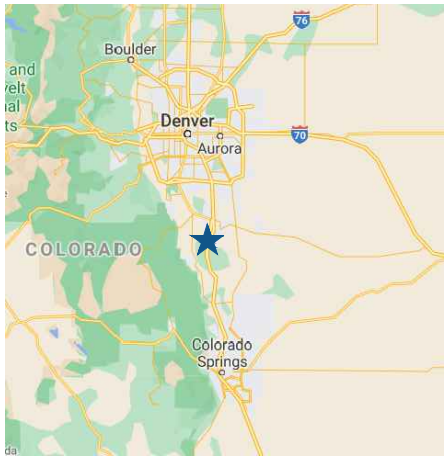
Table 13 - Peak Hour Estimated Queues

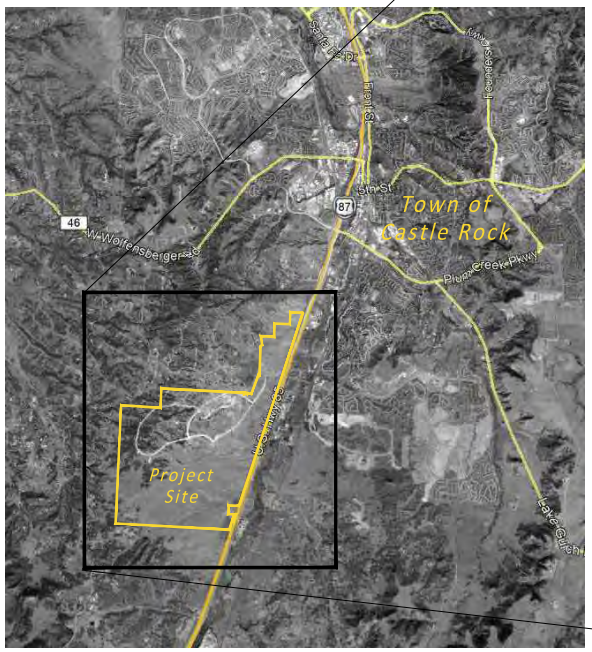
Intersection and Lanes Groups	Existing Storage (feet)	Future Minimum Storage (feet)	2021 Existing 95th % Q			2025 Background 95th % Q			2025 Bkgrd + Ph. 1 95th % Q			2030 Background 95th % Q			2030 Bkgrd + Phase 1 & 2 95th % Q			2040 Background 95th % Q			2040 Bkgrd + Full-Build 95th % Q		
			AM	PM	Sat	AM	PM	Sat	AM	PM	Sat	AM	PM	Sat	AM	PM	Sat	AM	PM	Sat	AM	PM	Sat
#8. Plum Creek Pkwy & I-25 SB Off-Ramp/W. Frontage Rd.			*Signalized*			*Signalized*			*Signalized*			*Signalized*			*Signalized*			*Signalized*			*Signalized*		
Eastbound Through+Right	-	-	57'	20'	105'	61'	198'	117'	114'	213'	159'	128'	78'	33'	151'	166'	108'	136'	324'	256'	174'	351'	294'
Westbound Left	550'	-	126'	86'	128'	138'	***207'***	155'	67'	132'	96'	50'	115'	80'	46'	114'	100'	56'	52'	25'	56'	69'	36'
Westbound Through	-	-	98'	165'	66'	145'	220'	115'	70'	133'	70'	141'	185'	123'	140'	218'	156'	148'	47'	46'	165'	45'	43'
Northbound Left	360'	-	32'	47'	28'	38'	***57'***	40'															
Northbound Right	-	-	***109'***	41'	56'	***109'***	60'	58'															
Southbound Left	375'	-	202'	56'	166'	231'	***403'***	175'	161'	284'	166'	167'	273'	130'	141'	273'	130'	152'	318'	147'	152'	318'	147'
Southbound Left+Through+Right	-	-	234'	41'	197'	282'	496'	207'	198'	342'	197'	158'	316'	156'	169'	316'	156'	181'	367'	173'	181'	367'	173'
Southbound Right	-	200'				23'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'
#9. Plum Creek Pkwy & I-25 NB Off-Ramp/On-Ramp			*Signalized*			*Signalized*			*Signalized*			*Signalized*			*Signalized*			*Signalized*			*Signalized*		
Eastbound Left	500'	-	98'	105'	81'	128'	114'	128'	132'	126'	136'	209'	199'	153'	329'	378'	335'	256'	252'	311'	384'	***473'***	505'
Eastbound Through	-	-	95'	187'	73'	135'	184'	74'	116'	201'	46'	103'	138'	27'	109'	131'	25'	101'	186'	24'	108'	257'	81'
Westbound Through+Right	-	-	136'	122'	103'	162'	273'	137'	165'	283'	143'	290'	302'	201'	320'	348'	243'	313'	372'	301'	380'	457'	410'
Westbound Right	485'	-	62'	36'	51'	65'	57'	53'	65'	57'	53'	63'	56'	53'	63'	59'	57'	62'	62'	60'	65'	***67'***	71'
Northbound Left	350'	-	32'	61'	25'	65'	111'	76'	65'	111'	76'	97'	131'	117'	97'	131'	117'	107'	141'	133'	107'	***143'***	135'
Northbound Left+Through+Right	-	-	35'	326'	38'	38'	86'	51'	38'	86'	51'	87'	104'	78'	87'	107'	78'	92'	121'	81'	92'	126'	82'
Northbound Right	150'	-	11'	***370'***	14'	16'	50'	21'	16'	50'	21'	38'	68'	28'	38'	68'	28'	43'	76'	41'	43'	77'	42'
#10. Plum Creek Pkwy & Prairie Hawk Dr.			*Signalized*			*Signalized*			*Signalized*			*Signalized*			*Signalized*			*Signalized*			*Signalized*		
Eastbound Left	-	150'				12'	19'	16'	17'	27'	24'	21'	31'	36'	21'	25'	30'	24'	34'	***39'***	24'	34'	38'
Eastbound Through	-	-				73'	115'	74'				132'	248'	225'	132'	237'	228'	147'	263'	323'	148'	263'	313'
Eastbound Through+Right	-	150'							11'	***210'***	144'												
Eastbound Right	-	150'										3'	14'	0'	19'	58'	47'	0'	21'	35'	0'	***65'***	66'
Westbound Left	-	520'							11'	27'	29'	124'	255'	55'	185'	357'	172'	105'	126'	109'	232'	***519'***	465'
Westbound Through	-	-				54'	246'	94'	161'	317'	118'	189'	394'	320'	189'	376'	304'	206'	407'	315'	206'	384'	249'
Westbound Right	-	150'				0'	26'	20'	22'	14'	0'	0'	29'	***45'***	0'	33'	***45'***	2'	25'	31'	2'	18'	8'
Northbound Left	-	200'							32'	38'	31'	92'	109'	102'	114'	153'	136'	92'	119'	98'	123'	***168'***	144'
Northbound Through	-	-							53'	44'	55'	24'	39'	43'	104'	166'	158'	40'	54'	45'	157'	245'	208'
Northbound Right	-	200'							62'	48'	48'	44'	24'	33'	52'	132'	142'	43'	29'	22'	98'	***175'***	91'
Southbound Left	-	200'				32'	101'	21'	29'	81'	18'	41'	125'	89'	41'	133'	91'	43'	218'	89'	43'	128'	89'
Southbound Through	-	-							27'	59'	58'	46'	61'	51'	114'	171'	162'	57'	76'	66'	183'	234'	227'
Southbound Right	-	150'				15'	23'	21'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'	0'
#101. Dawson Trails Blvd. & F-1 Access															*Roundabout*						*Roundabout*		
Eastbound Approach	-	-																			0'	5'	21'
Westbound Approach	-	-													1'	3'	0'				24'	128'	45'
Northbound Approach	-	-													25'	41'	31'				74'	102'	87'
Southbound Approach	-	-													21'	32'	79'				49'	362'	336'
#102. Dawson Trails Blvd. & Collector Road H									*Roundabout*						*Roundabout*						*Roundabout*		
Eastbound Approach	-	-													0'	1'	3'				0'	5'	17'
Westbound Approach	-	-							2'	16'	28'				4'	23'	39'				11'	59'	133'
Northbound Approach	-	-							24'	27'	35'				23'	25'	26'				74'	61'	79'
Southbound Approach	-	-							14'	27'	93'				20'	44'	117'				43'	245'	669'

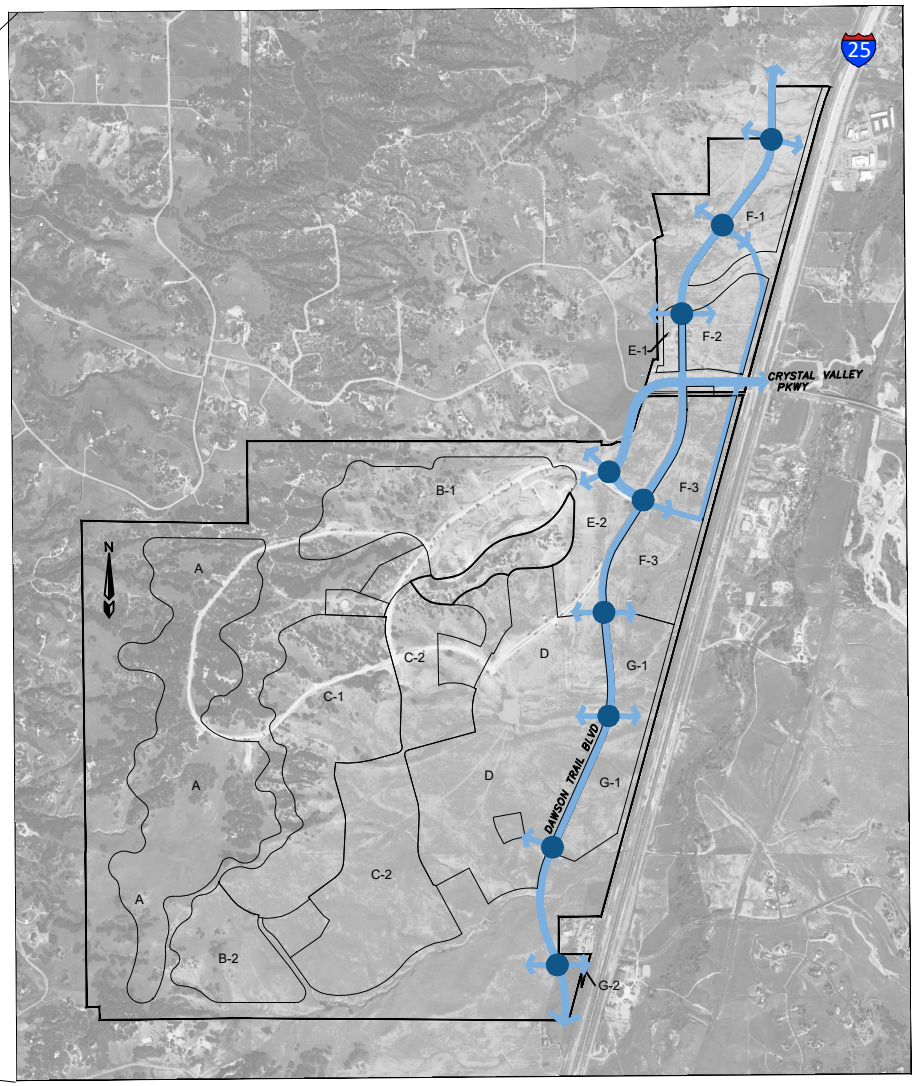
Table 13 - Peak Hour Estimated Queues

Intersection and Lanes Groups	Existing Storage (feet)	Future Minimum Storage (feet)	2021 Existing 95th % Q			2025 Background 95th % Q			2025 Bkgrd + Ph. 1 95th % Q			2030 Background 95th % Q			2030 Bkgrd + Phase 1 & 2 95th % Q			2040 Background 95th % Q			2040 Bkgrd + Full-Build 95th % Q		
			AM	PM	Sat	AM	PM	Sat	AM	PM	Sat	AM	PM	Sat	AM	PM	Sat	AM	PM	Sat	AM	PM	Sat
#103. Dawson Trails Blvd. & E-1/F-2 Access (3/4 Mvmt)									*Side-Street Stop (EB/WB)*						*Side-Street Stop (EB/WB)*						*Side-Street Stop (EB/WB)*		
Eastbound Right	-	-													0'	8'	10'				8'	13'	15'
Westbound Right	-	-							0'	3'	3'				0'	8'	10'				3'	0'	20'
Northbound Left	-	-													0'	3'	8'				0'	8'	10'
Southbound Left	-	-							0'	3'	3'				0'	5'	10'				3'	10'	18'
#104. Dawson Trails Blvd. & E-2/F-3 Access									*Roundabout*						*Roundabout*						*Roundabout*		
Eastbound Approach	-	-							1'	4'	5'				12'	28'	48'				34'	52'	96'
Westbound Approach	-	-													11'	154'	68'				29'	91'	102'
Northbound Approach	-	-							28'	26'	34'				62'	145'	138'				165'	543'	445'
Southbound Approach	-	-							15'	37'	108'				53'	205'	285'				139'	377'	598'
#105. Dawson Trails Blvd. & Collector Road B									*Roundabout*						*Roundabout*						*Roundabout*		
Eastbound Approach	-	-							34'	34'	68'				33'	34'	50'				47'	279'	60'
Westbound Approach	-	-													2'	27'	35'				4'	46'	39'
Northbound Approach	-	-							65'	53'	100'				58'	94'	140'				172'	68'	293'
Southbound Approach	-	-							37'	204'	521'				35'	75'	92'				81'	251'	220'
#106. Dawson Trails Blvd. & Collector Road C									*Roundabout*						*Roundabout*						*Roundabout*		
Eastbound Approach	-	-							1'	0'	3'				18'	17'	46'				46'	38'	259'
Westbound Approach	-	-													3'	18'	13'				4'	38'	99'
Northbound Approach	-	-							9'	7'	8'				24'	24'	33'				116'	83'	86'
Southbound Approach	-	-							6'	6'	22'				26'	51'	77'				66'	173'	119'
#107. Dawson Trails Blvd. & Collector Road D															*Roundabout*						*Roundabout*		
Eastbound Approach	-	-													19'	15'	25'				77'	39'	128'
Westbound Approach	-	-													10'	13'	20'				31'	34'	29'
Northbound Approach	-	-													11'	21'	44'				43'	55'	68'
#108. Dawson Trails Blvd. & G-2 Access / HS Access																					*Roundabout*		
Eastbound Approach	-	-																			22'	6'	3'
Westbound Approach	-	-																			0'	1'	0'
Northbound Approach	-	-																			15'	24'	20'
Southbound Approach	-	-																			21'	19'	40'
#109. Collector Road A & Twin Oaks Road									*Stop-Control (EB/WB)*						*Signalized*						*Signalized*		
Eastbound Left+Through+Right	-	-							3'	3'	3'				21'	15'	16'				21'	18'	***25'***
Westbound Left+Through+Right	-	-							3'	10'	10'												
Westbound Left	-	200'													23'	66'	94'				24'	111'	214'
Westbound Through+Right	-	-													20'	34'	28'				26'	51'	57'
Northbound Through+Right	-	-							0'	0'	0'				50'	75'	87'				64'	257'	320'
Southbound Left	-	250'							0'	0'	0'				10'	47'	85'				26'	161'	197'
Southbound Through+Right	-	-							0'	0'	0'				18'	95'	108'				37'	248'	272'

Note: ***Blue*** numbers are queues above the existing storage length. ***Purple*** queues are the highest 95th percentile queue for that movement.





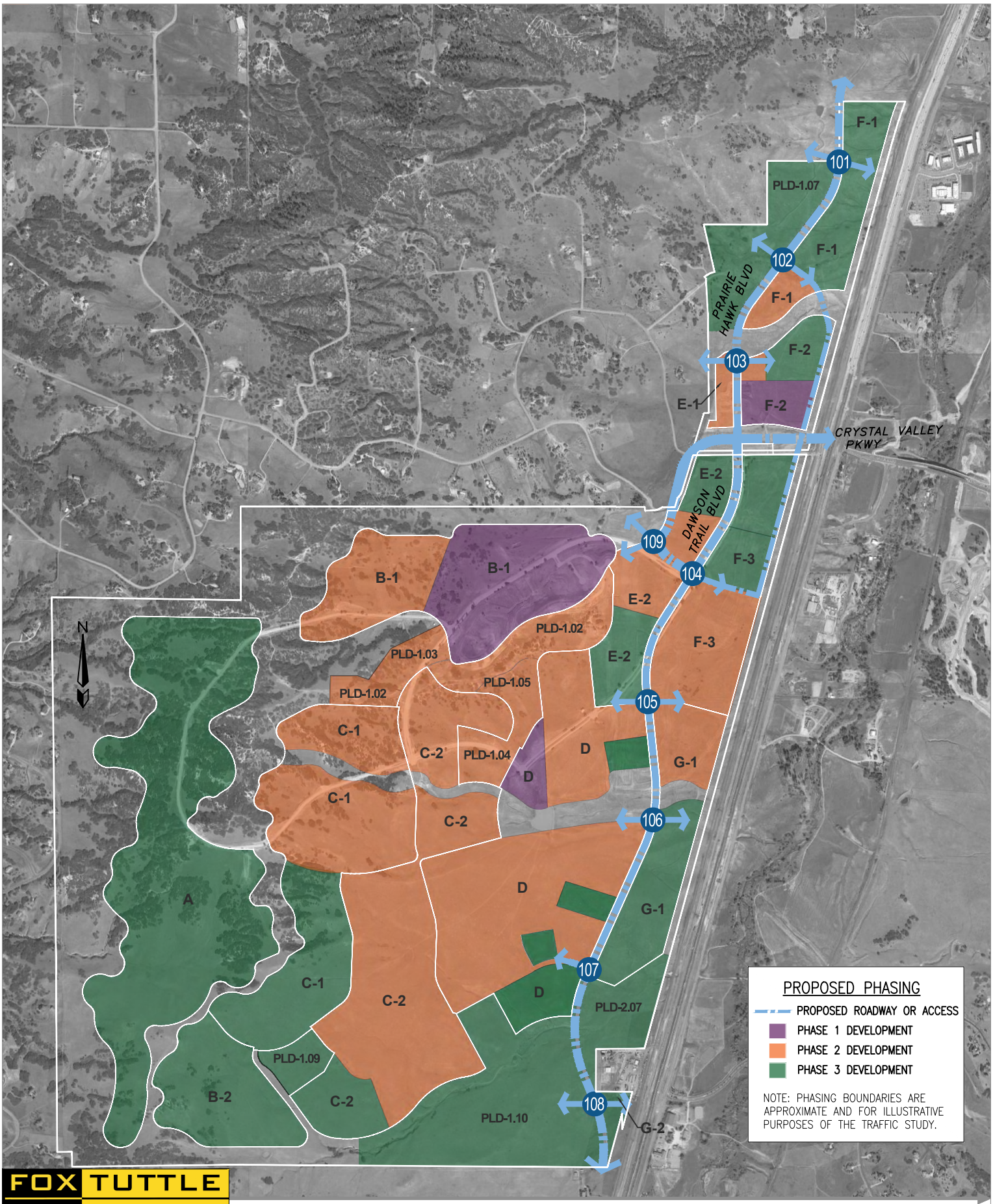


FOX TUTTLE
TRANSPORTATION GROUP

DAWSON TRAILS MASTER TRANSPORTATION STUDY

VICINITY MAP

FT Project #	20092	Original Scale	NTS	Date	4/6/2022	Drawn by	MAR	Figure #	1

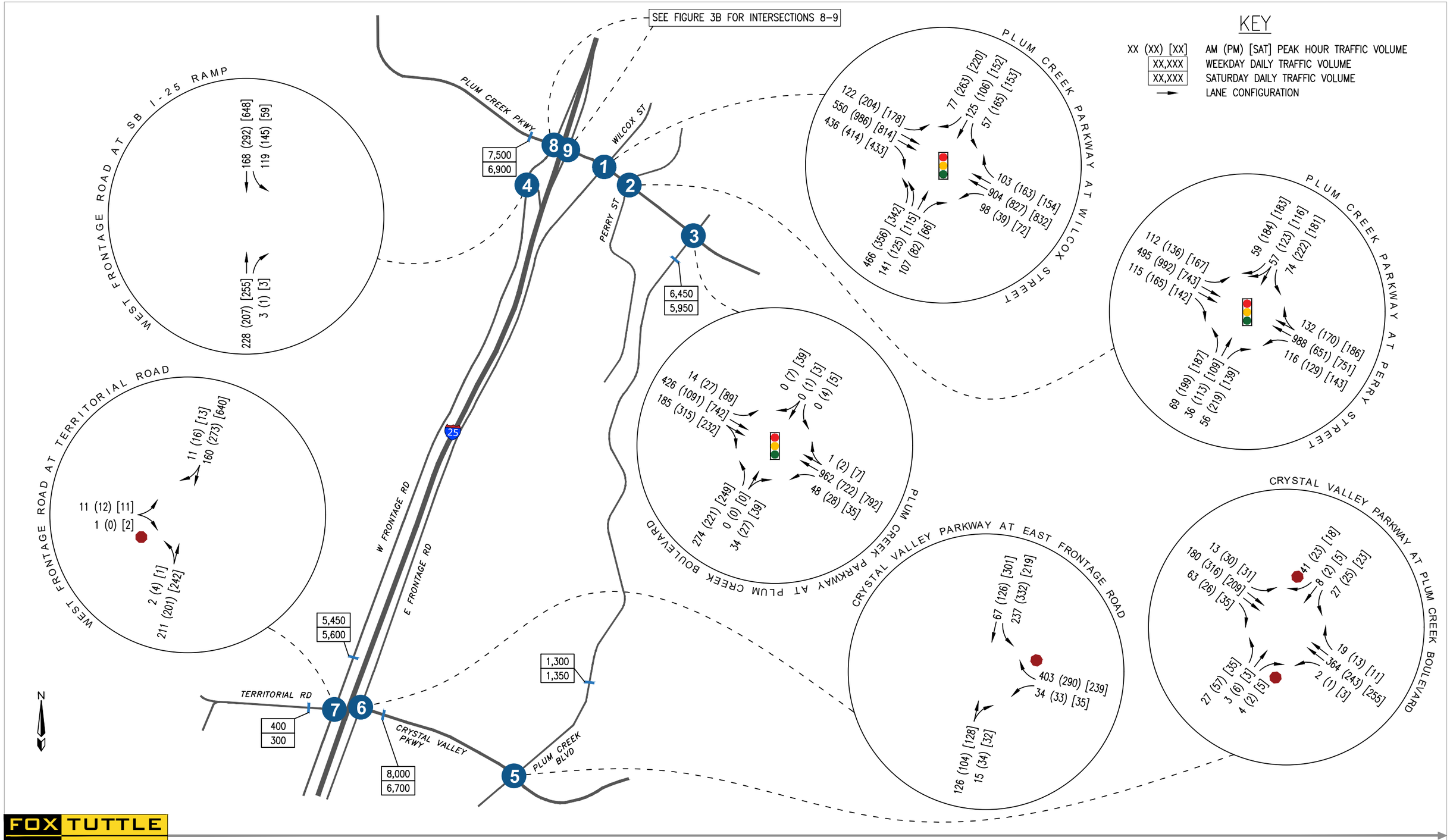


FOX TUTTLE
TRANSPORTATION GROUP

DAWSON TRAILS MASTER TRANSPORTATION STUDY

PROPOSED LAND USES AND PHASING

FT Project #	20992	Original Scale	NTS	Date	5/24/22	Drawn by	MAR	Figure #	2

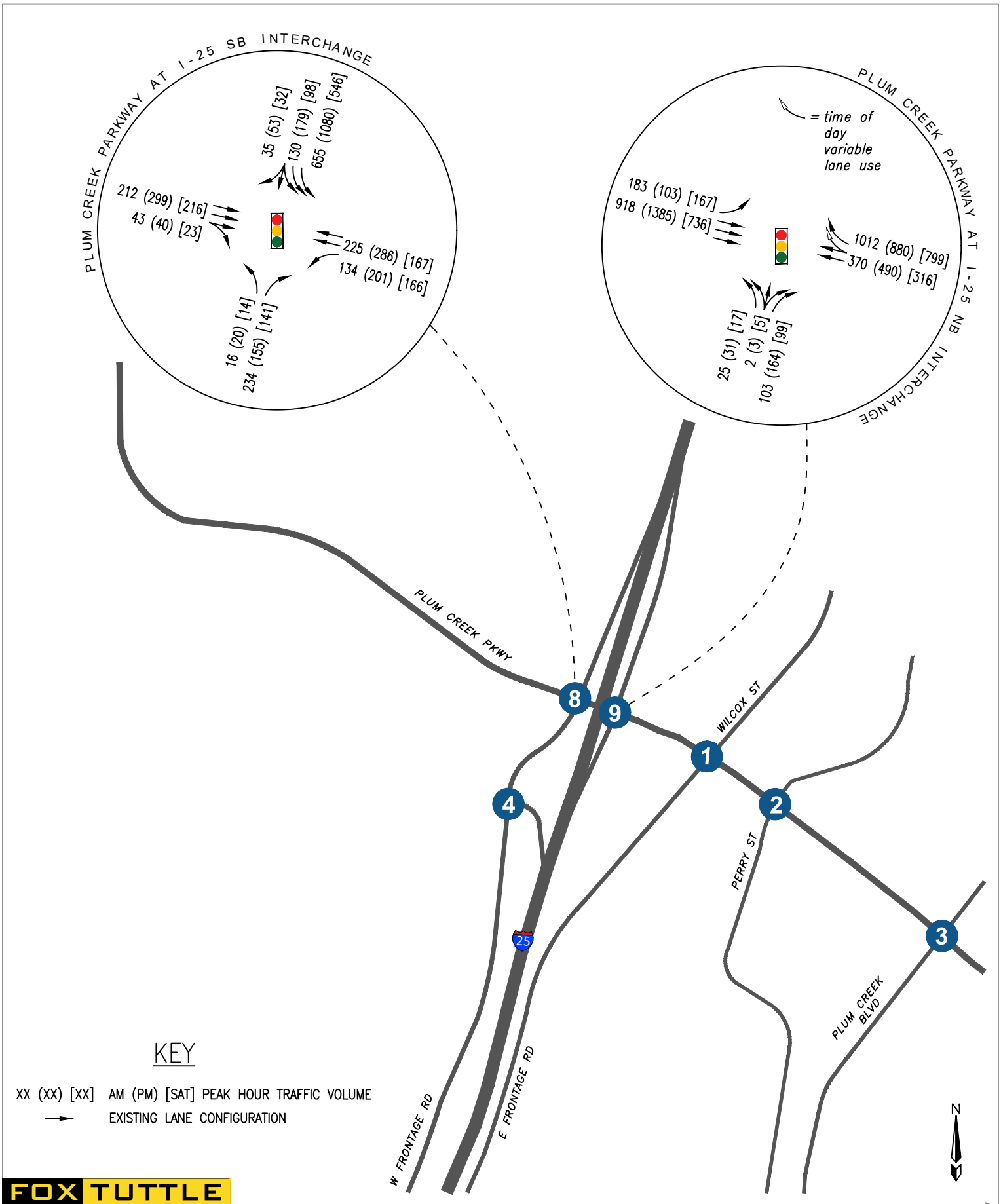


FOX TUTTLE
TRANSPORTATION GROUP

DAWSON TRAILS MASTER TRANSPORTATION STUDY

YEAR 2021 EXISTING TRAFFIC VOLUMES

FT Project #	20092	Original Scale	NTS	Date	4/6/22	Drawn by	MAR	Figure #	3A

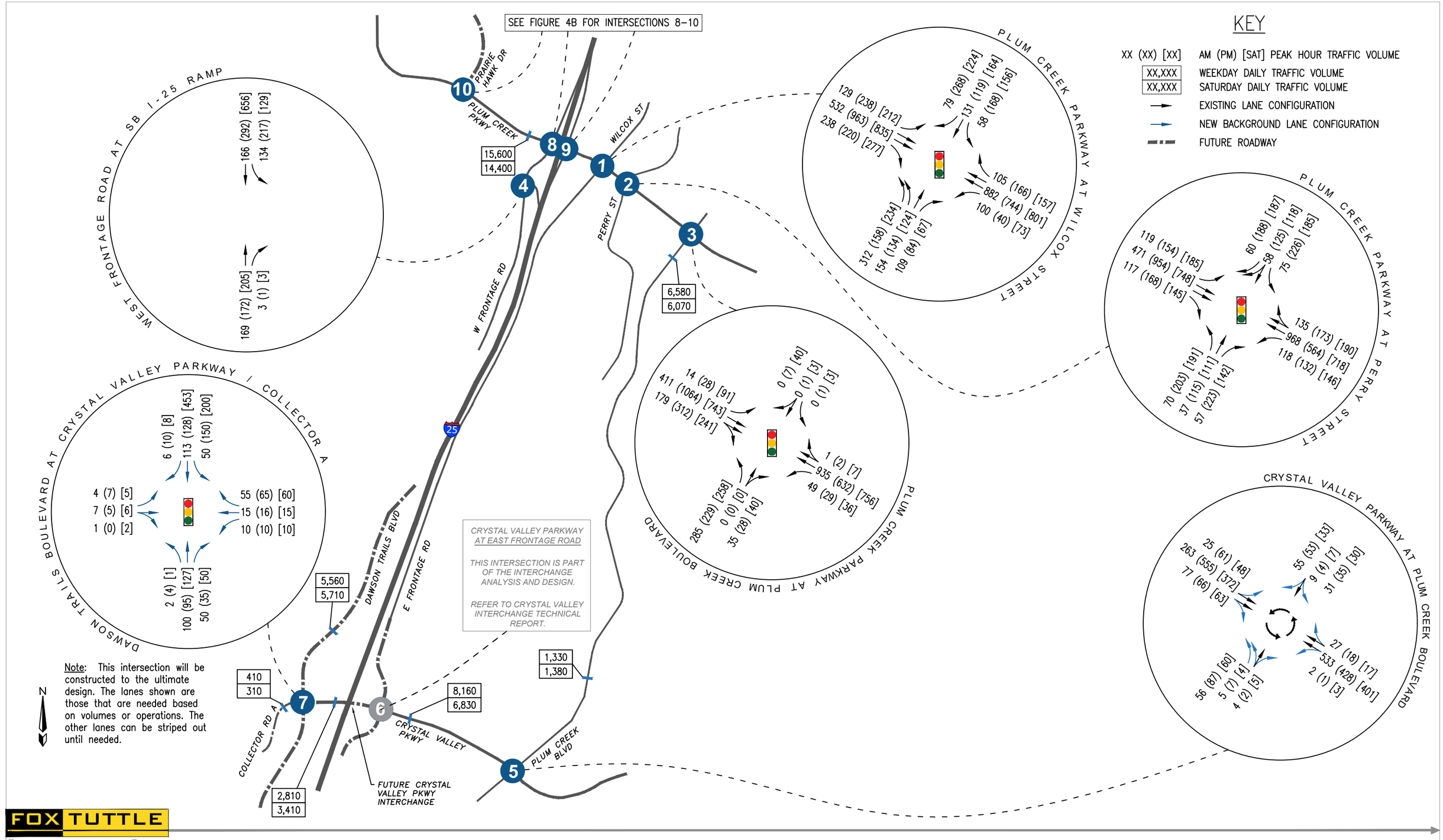


FOX TUTTLE TRANSPORTATION GROUP

DAWSON TRAILS MASTER TRANSPORTATION STUDY

YEAR 2021 EXISTING TRAFFIC VOLUMES (CONT.)

FT Project #	20992	Original Scale	NTS	Date	11/30/2021	Drawn by	MAR	Figure #	3B

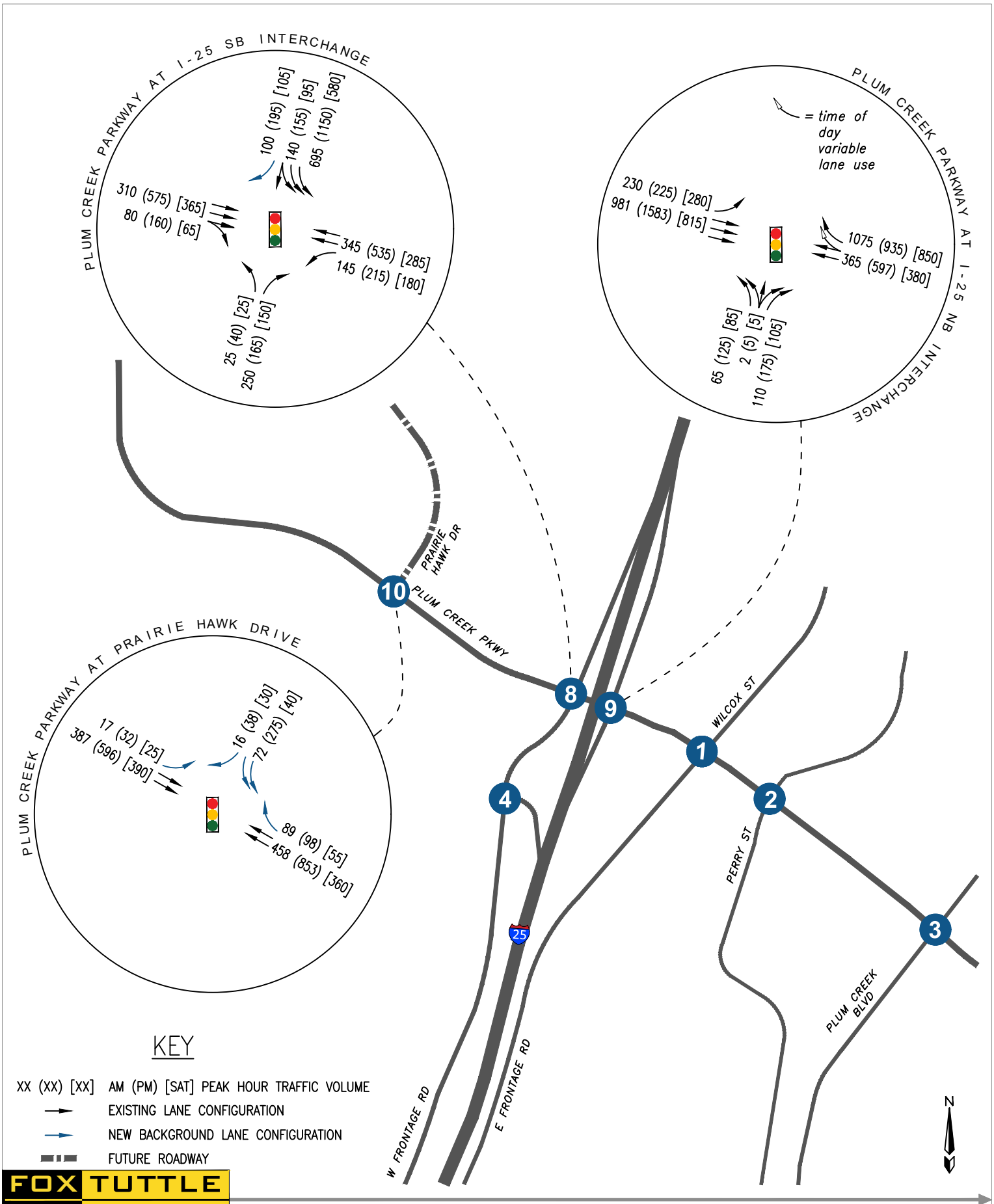


FOX TUTTLE TRANSPORTATION GROUP

DAWSON TRAILS MASTER TRANSPORTATION STUDY

YEAR 2025 BACKGROUND TRAFFIC VOLUMES

FT Project #	20092	Original Scale	NTS	Date	6/7/2022	Drawn by	MAR	Figure #	4A

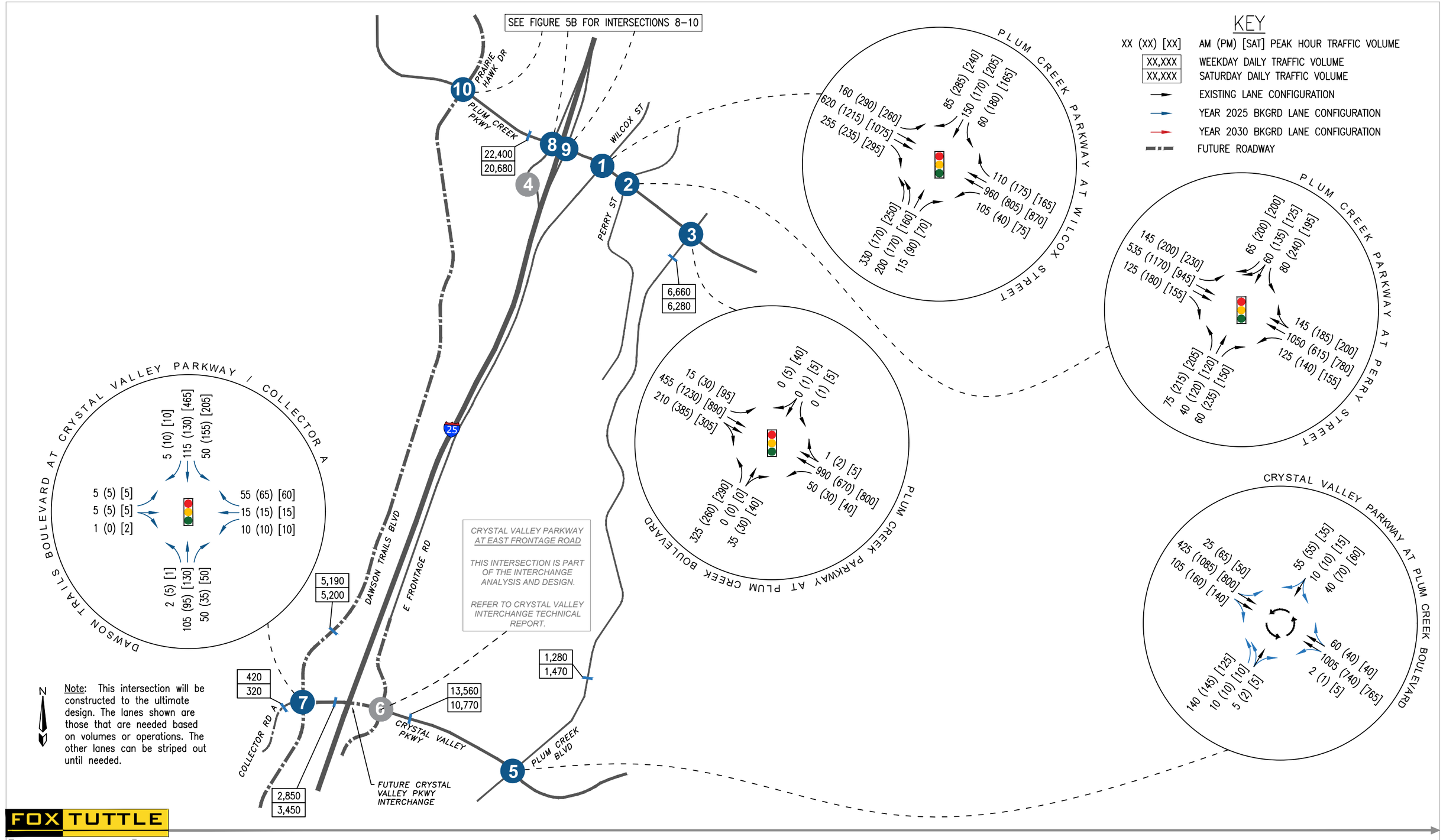


FOX TUTTLE TRANSPORTATION GROUP

DAWSON TRAILS MASTER TRANSPORTATION STUDY

YEAR 2025 BACKGROUND TRAFFIC VOLUMES (CONT.)

FT Project #	20092	Original Scale	NTS	Date	4/6/2022	Drawn by	MAR	Figure #	4B

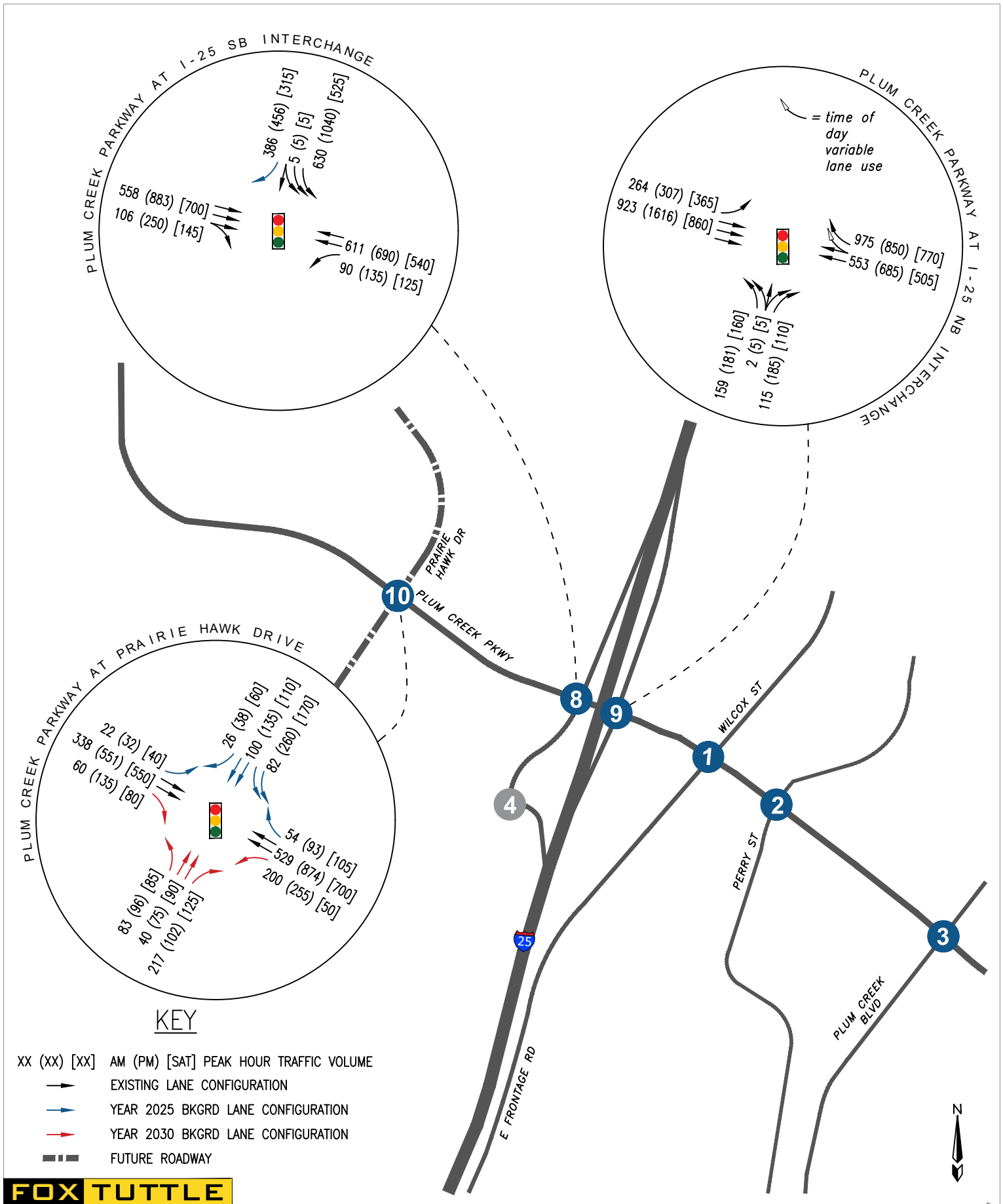


FOX TUTTLE TRANSPORTATION GROUP

DAWSON TRAILS MASTER TRANSPORTATION STUDY

YEAR 2030 BACKGROUND TRAFFIC VOLUMES

FT Project #	20092	Original Scale	NTS	Date	6/7/2022	Drawn by	MAR	Figure #	5A

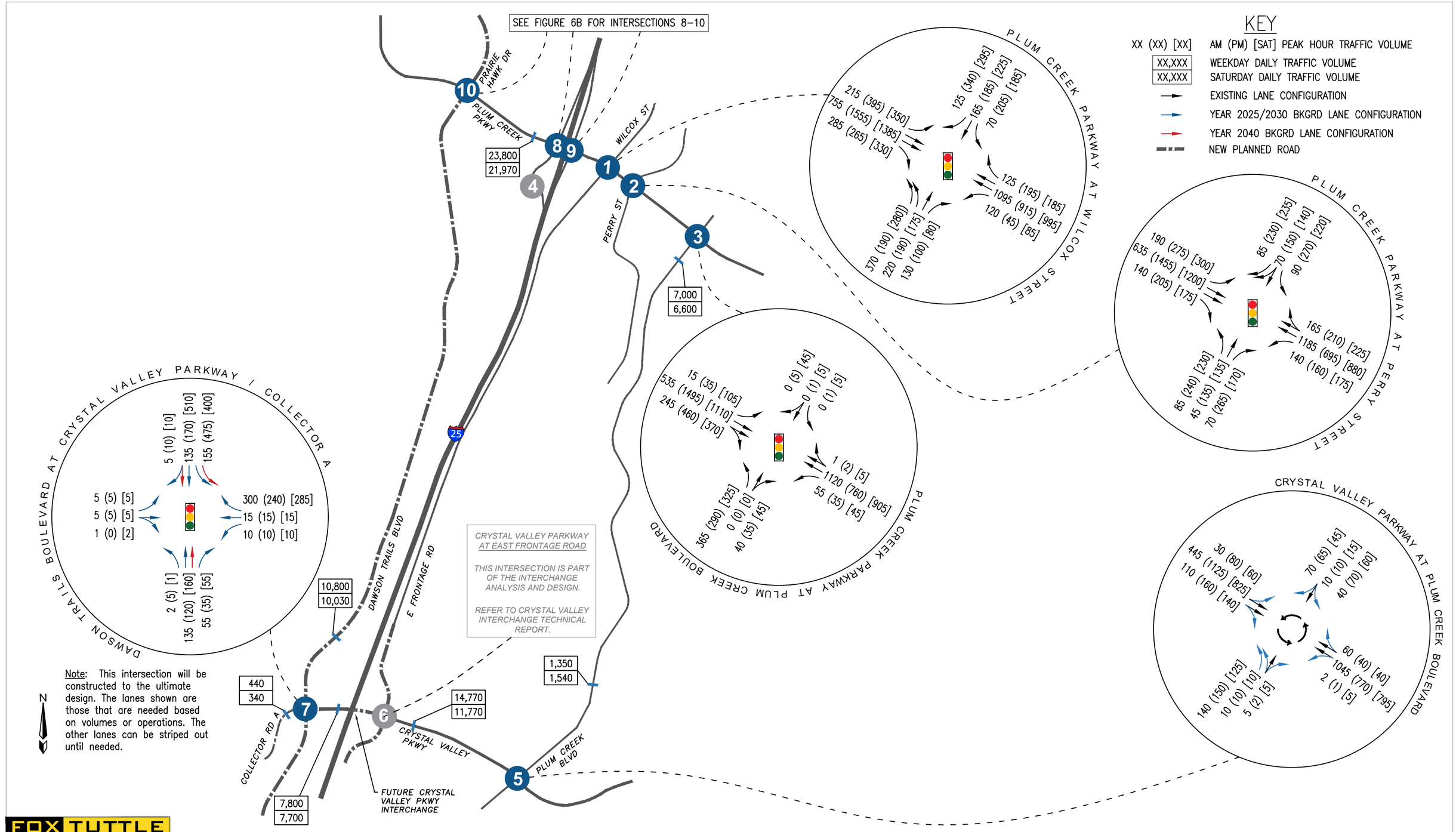


FOX TUTTLE TRANSPORTATION GROUP

DAWSON TRAILS MASTER TRANSPORTATION STUDY

YEAR 2030 BACKGROUND TRAFFIC VOLUMES (CONT.)

FT Project #	20092	Original Scale	NTS	Date	4/6/2022	Drawn by	MAR	Figure #	5B

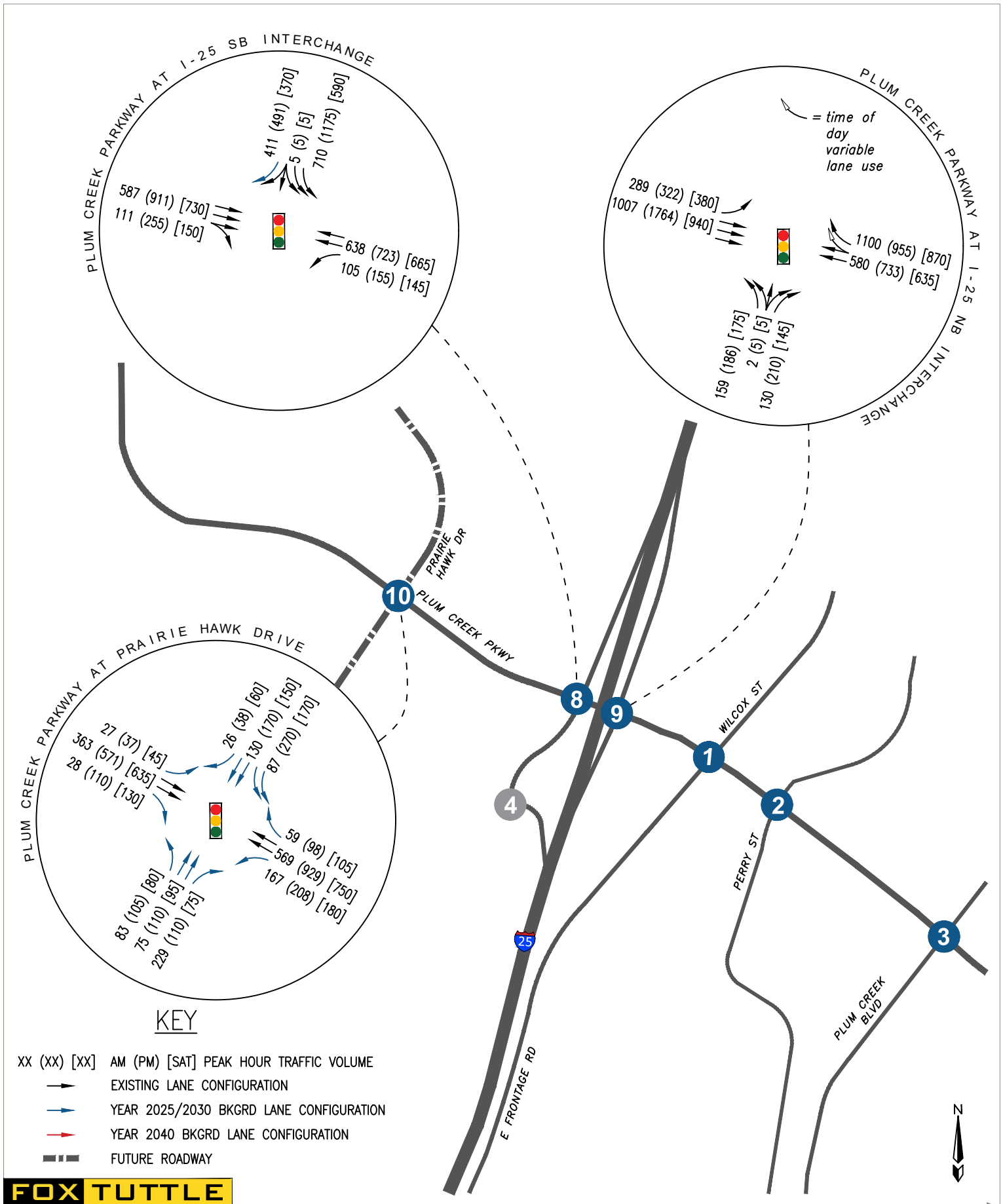


FOX TUTTLE TRANSPORTATION GROUP

DAWSON TRAILS MASTER TRANSPORTATION STUDY

YEAR 2040 BACKGROUND TRAFFIC VOLUMES

FT Project #	20092	Original Scale	NTS	Date	4/6/2022	Drawn by	MAR	Figure #	6A



FOX TUTTLE TRANSPORTATION GROUP

DAWSON TRAILS MASTER TRANSPORTATION STUDY

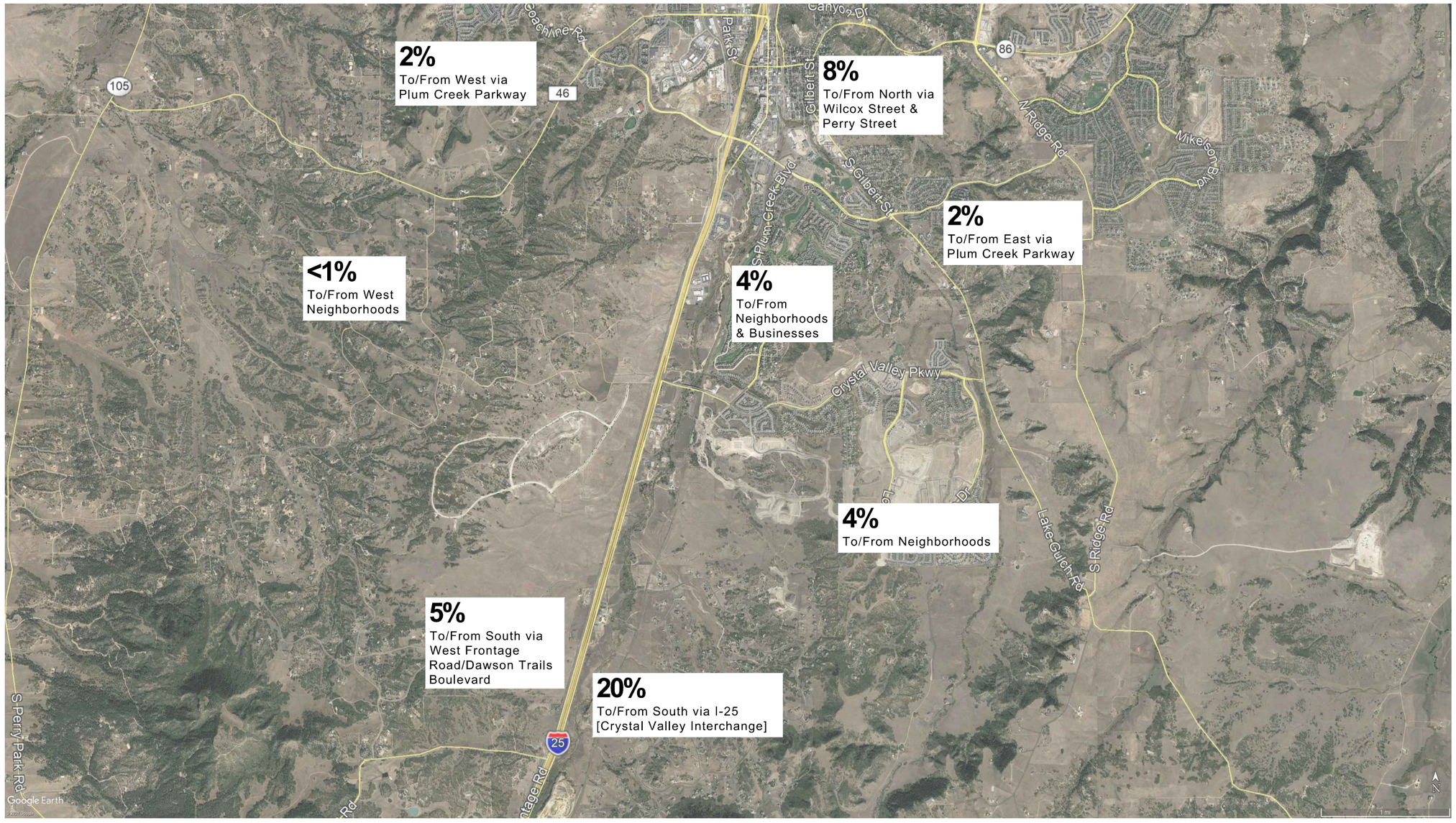
YEAR 2040 BACKGROUND TRAFFIC VOLUMES (CONT.)

FT Project #	20992	Original Scale	NTS	Date	4/6/2022	Drawn by	MAR	Figure #	6B

15%
To/From North via future Prairie Hawk Drive

35%
To/From North via I-25 [Crystal Valley Interchange]

5%
To/From North via I-25 [Plum Creek Interchange]



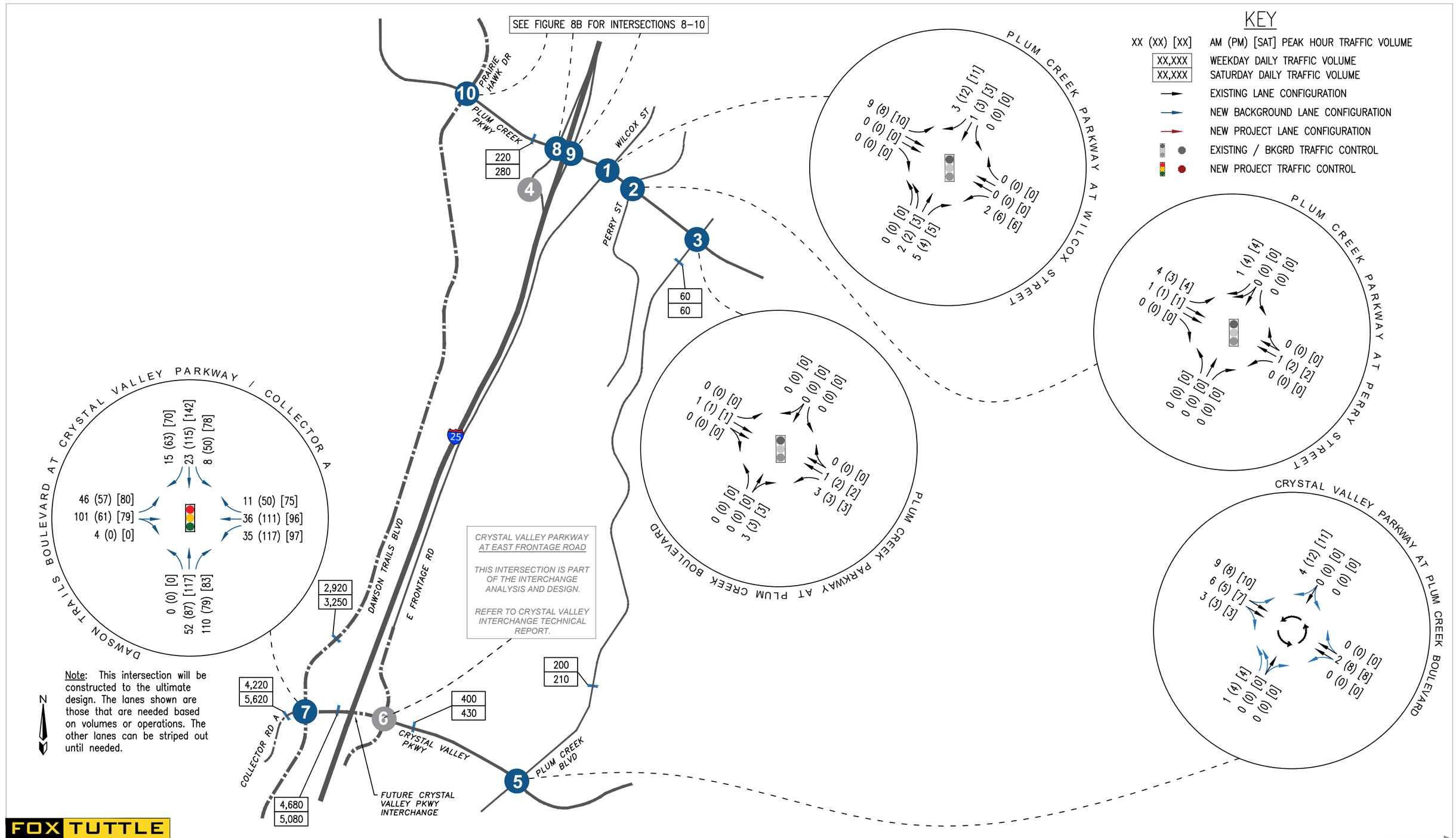
N

FOX TUTTLE
TRANSPORTATION GROUP

DAWSON TRAILS MASTER TRANSPORTATION STUDY

SITE TRIP DISTRIBUTION

FT Project #	20092	Original Scale	NTS	Date	11/30/2021	Drawn by	MAR	Figure #	7

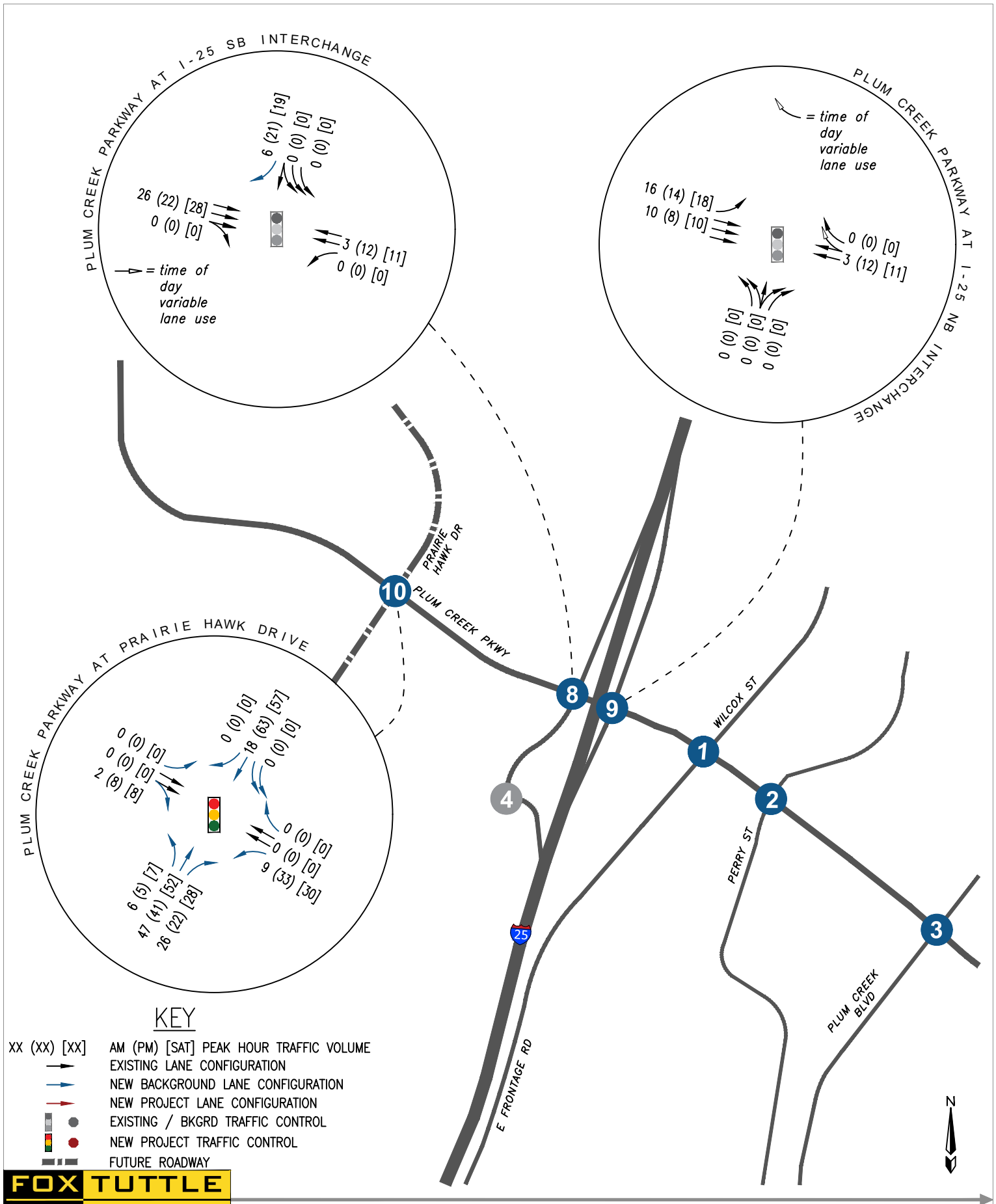


FOX TUTTLE
TRANSPORTATION GROUP

DAWSON TRAILS MASTER TRANSPORTATION STUDY

PHASE 1 SITE-GENERATED TRAFFIC VOLUMES [EXISTING INTERSECTIONS]

FT Project #	20092	Original Scale	NTS	Date	4/6/2022	Drawn by	MAR	Figure #	8A

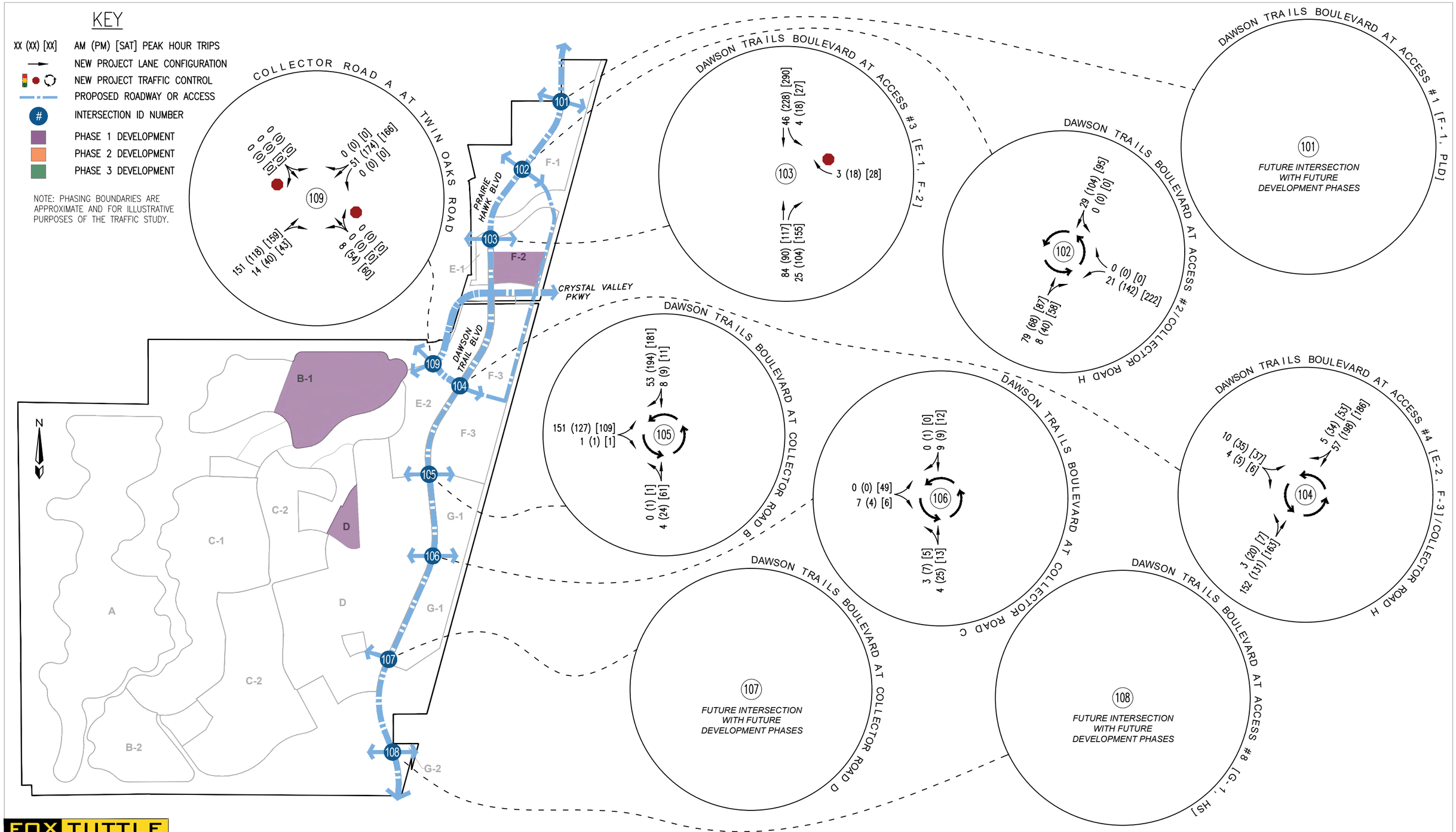


FOX TUTTLE TRANSPORTATION GROUP

DAWSON TRAILS MASTER TRANSPORTATION STUDY

PHASE 1 SITE-GENERATED TRAFFIC VOLUMES [EXISTING INTERSECTIONS] (CONT.)

FT Project #	20092	Original Scale	NTS	Date	4/6/2022	Drawn by	MAR	Figure #	8B

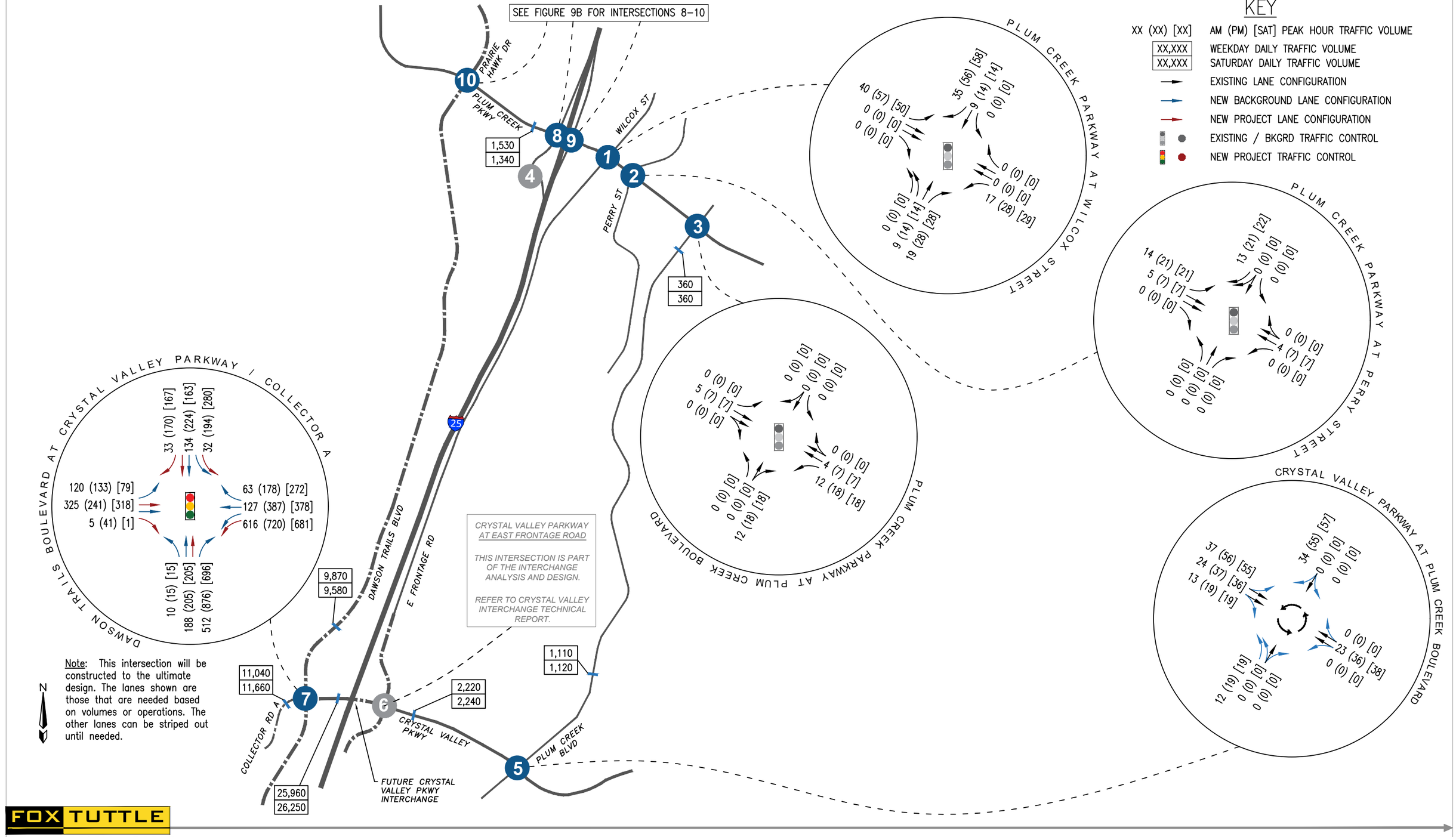


FOX TUTTLE
TRANSPORTATION GROUP

DAWSON TRAILS MASTER TRANSPORTATION STUDY

PHASE 1 SITE-GENERATED TRAFFIC VOLUMES [ACCESS & INTERNAL INTERSECTIONS]

FT Project #	20092	Original Scale	NTS	Date	5/24/22	Drawn by	MAR	Figure #	8C

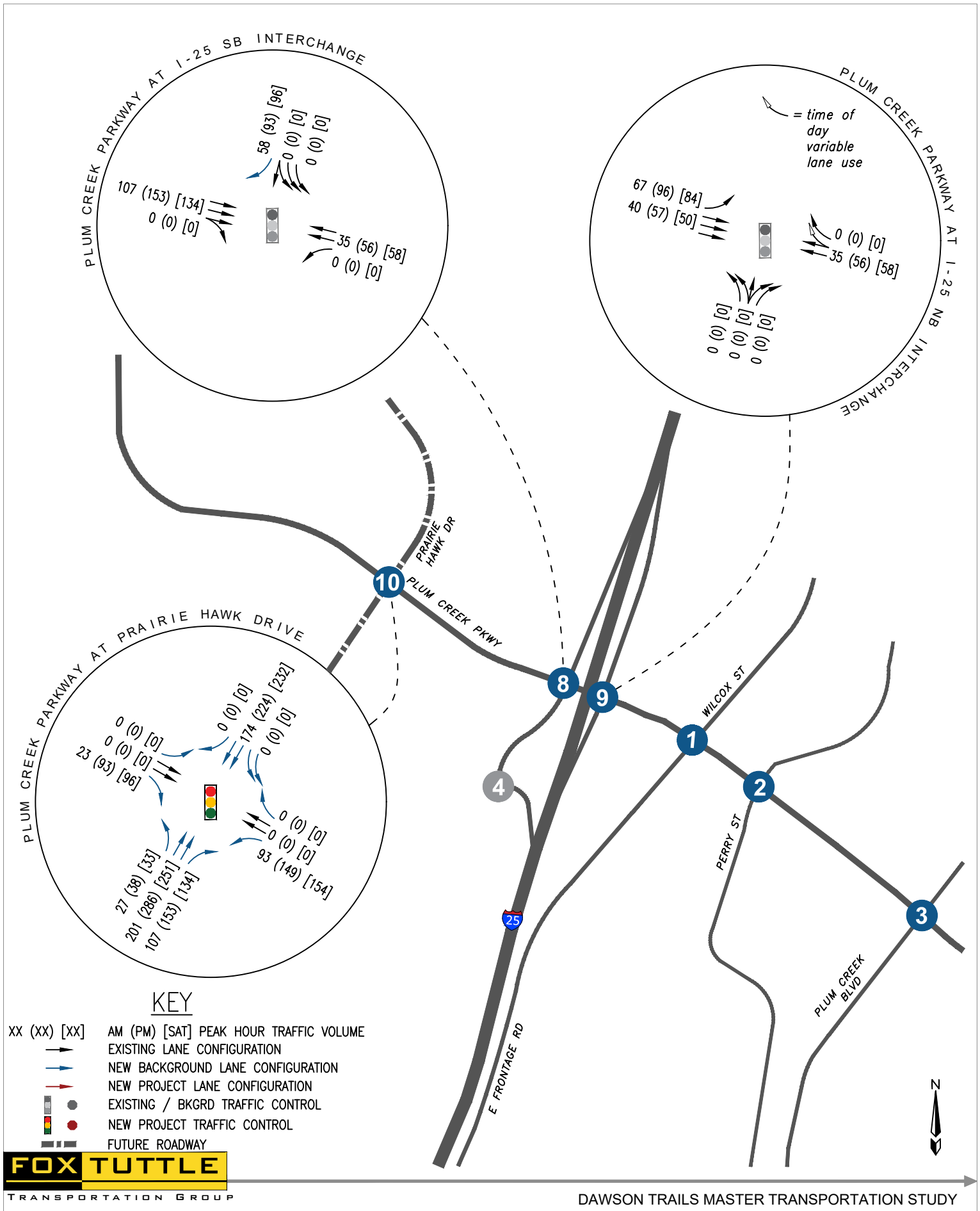


FOX TUTTLE
TRANSPORTATION GROUP

DAWSON TRAILS MASTER TRANSPORTATION STUDY

PHASE 1 & 2 SITE-GENERATED TRAFFIC VOLUMES [EXISTING INTERSECTIONS]

FT Project #	20092	Original Scale	NTS	Date	4/6/2022	Drawn by	MAR	Figure #	9A

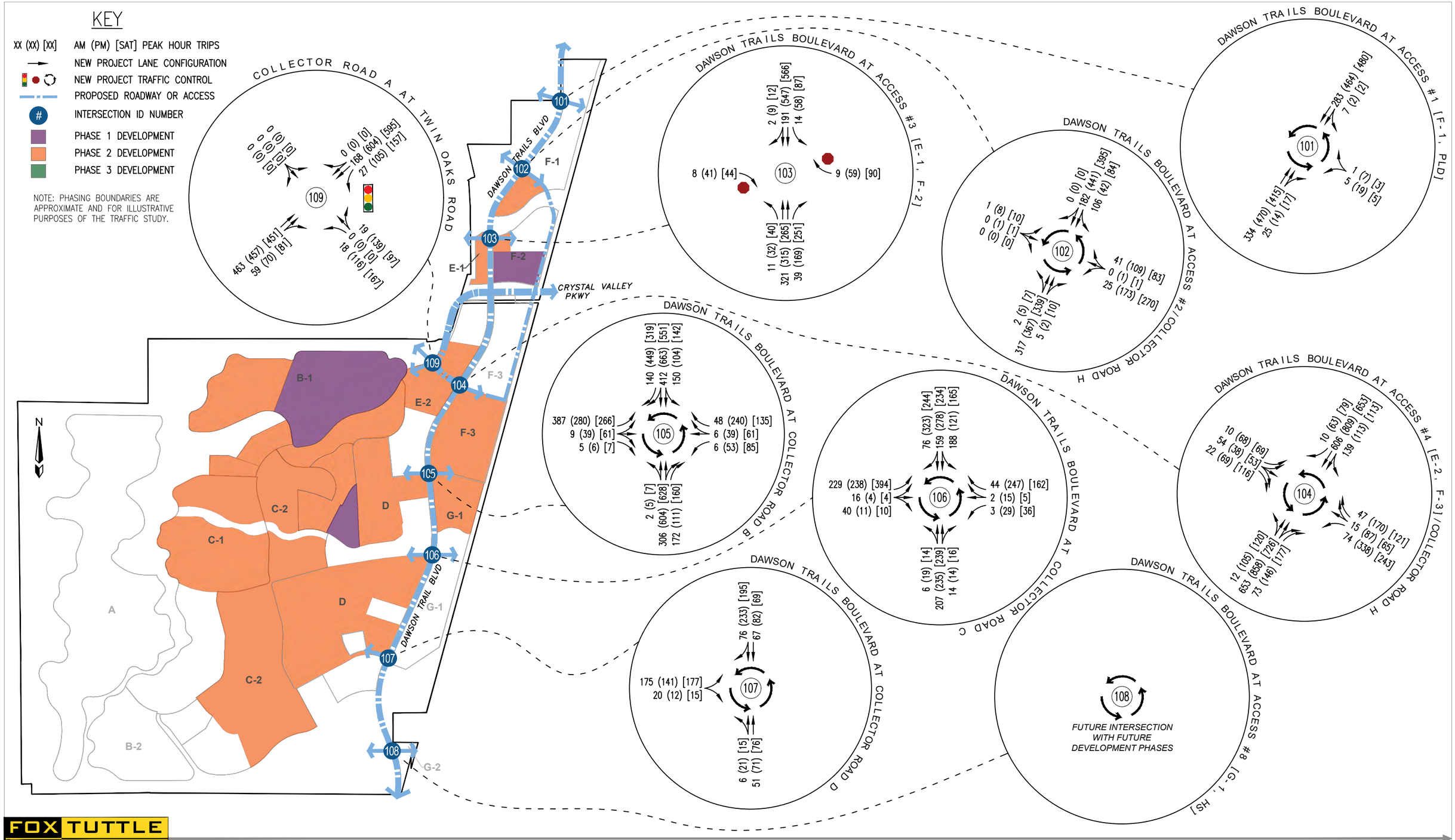


FOX TUTTLE TRANSPORTATION GROUP

DAWSON TRAILS MASTER TRANSPORTATION STUDY

PHASE 1 & 2 SITE-GENERATED TRAFFIC VOLUMES [EXISTING INTERSECTIONS] (CONT.)

FT Project #	20092	Original Scale	NTS	Date	4/6/2022	Drawn by	MAR	Figure #	9B

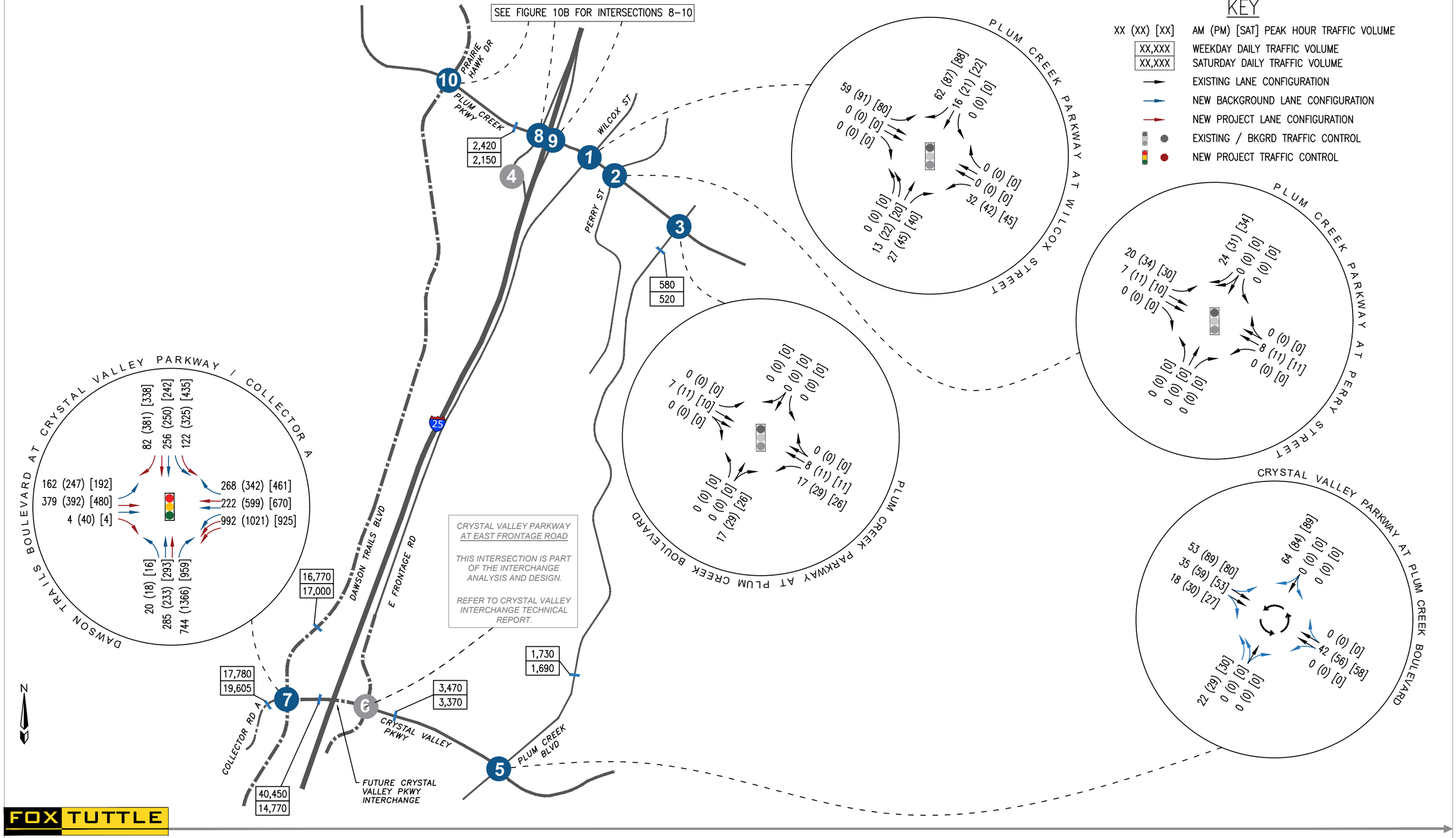


FOX TUTTLE TRANSPORTATION GROUP

DAWSON TRAILS MASTER TRANSPORTATION STUDY

PHASE 1 & 2 SITE-GENERATED TRAFFIC VOLUMES [ACCESS & INTERNAL INTERSECTIONS]

FT Project #	20092	Original Scale	NTS	Date	5/24/22	Drawn by	MAR	Figure #	9C

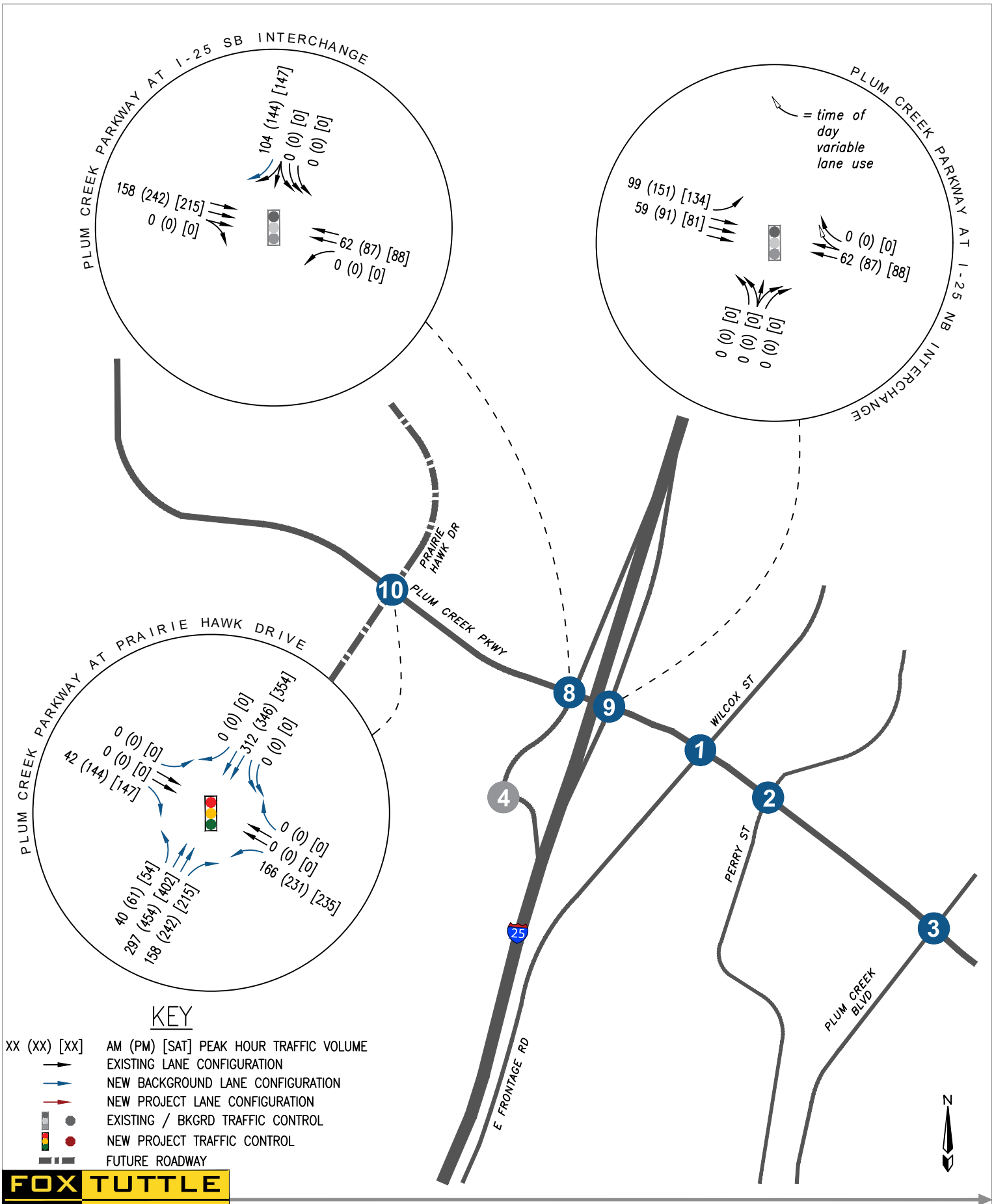


FOX TUTTLE
TRANSPORTATION GROUP

DAWSON TRAILS MASTER TRANSPORTATION STUDY

FULL BUILDOUT SITE-GENERATED TRAFFIC VOLUMES [EXISTING INTERSECTIONS]

FT Project #	20092	Original Scale	NTS	Date	4/6/2022	Drawn by	MAR	Figure #	10A



FOX TUTTLE TRANSPORTATION GROUP

DAWSON TRAILS MASTER TRANSPORTATION STUDY

FULL BUILDOUT SITE-GENERATED TRAFFIC VOLUMES [EXISTING INTERSECTIONS (CONT.)

FT Project #	20092	Original Scale	NTS	Date	4/6/2022	Drawn by	MAR	Figure #	10B

KEY

XX (XX) [XX] AM (PM) [SAT] PEAK HOUR TRIPS

NEW PROJECT LANE CONFIGURATION

NEW PROJECT TRAFFIC CONTROL

PROPOSED ROADWAY OR ACCESS

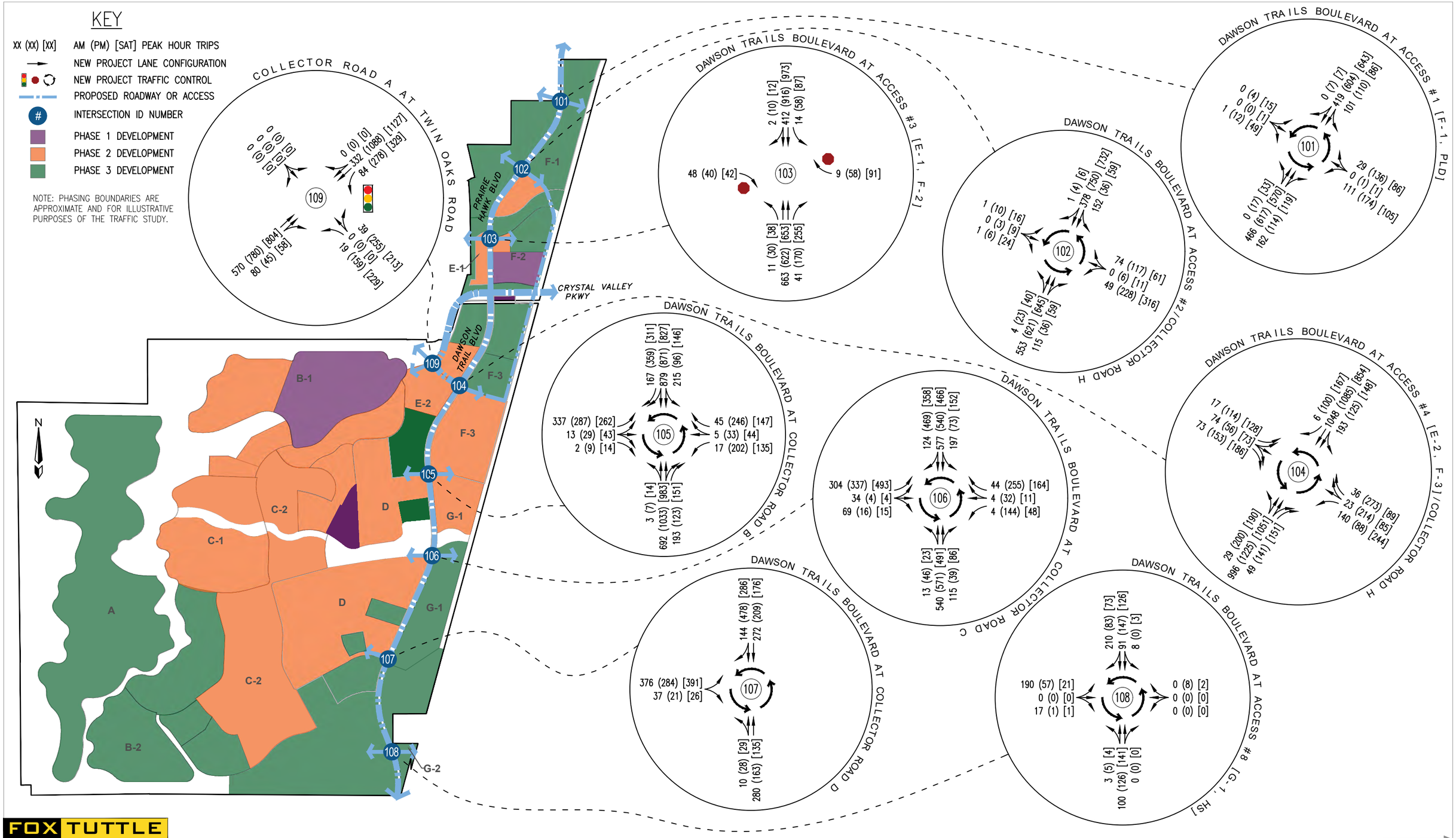
INTERSECTION ID NUMBER

PHASE 1 DEVELOPMENT

PHASE 2 DEVELOPMENT

PHASE 3 DEVELOPMENT

NOTE: PHASING BOUNDARIES ARE APPROXIMATE AND FOR ILLUSTRATIVE PURPOSES OF THE TRAFFIC STUDY.

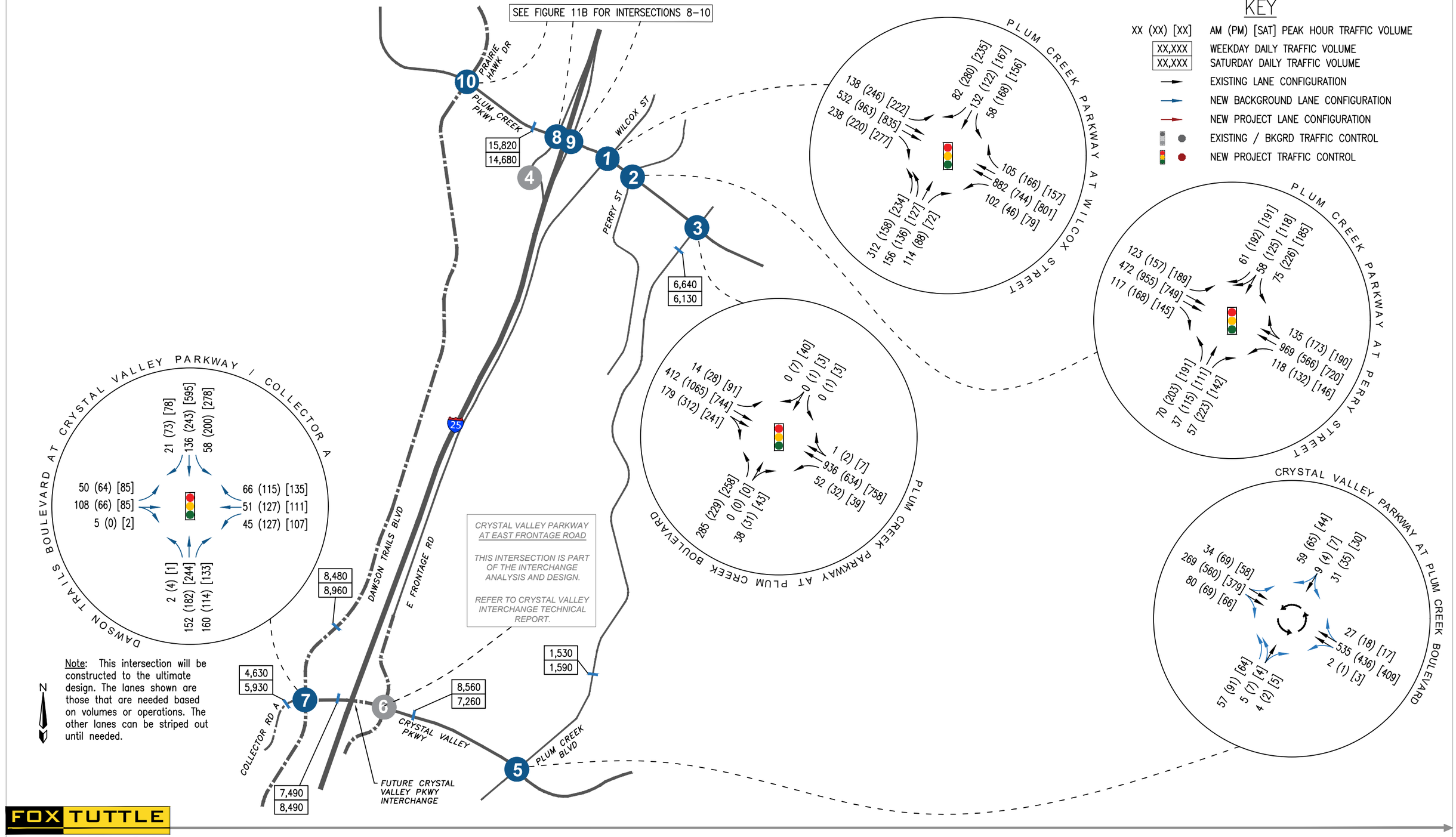


FOX TUTTLE TRANSPORTATION GROUP

DAWSON TRAILS MASTER TRANSPORTATION STUDY

FULL BUILDOUT SITE-GENERATED TRAFFIC VOLUMES [ACCESS & INTERNAL INTERSECTIONS]

FT Project #	20092	Original Scale	NTS	Date	5/24/22	Drawn by	MAR	Figure #	10C

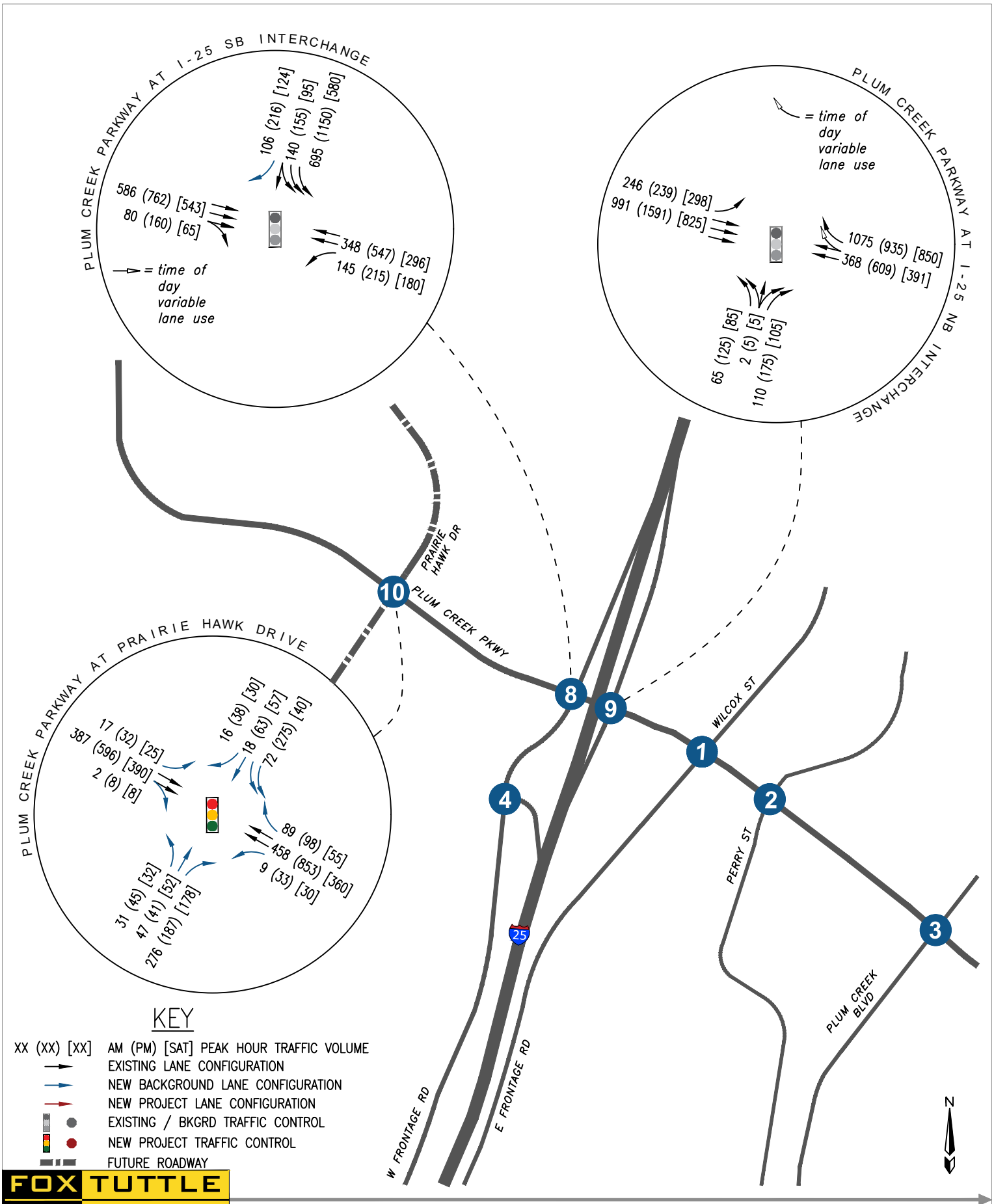


FOX TUTTLE
TRANSPORTATION GROUP

DAWSON TRAILS MASTER TRANSPORTATION STUDY

YEAR 2025 BACKGROUND + PHASE 1 TRAFFIC VOLUMES [EXISTING INTERSECTIONS]

FT Project #	20092	Original Scale	NTS	Date	4/6/2022	Drawn by	MAR	Figure #	11A

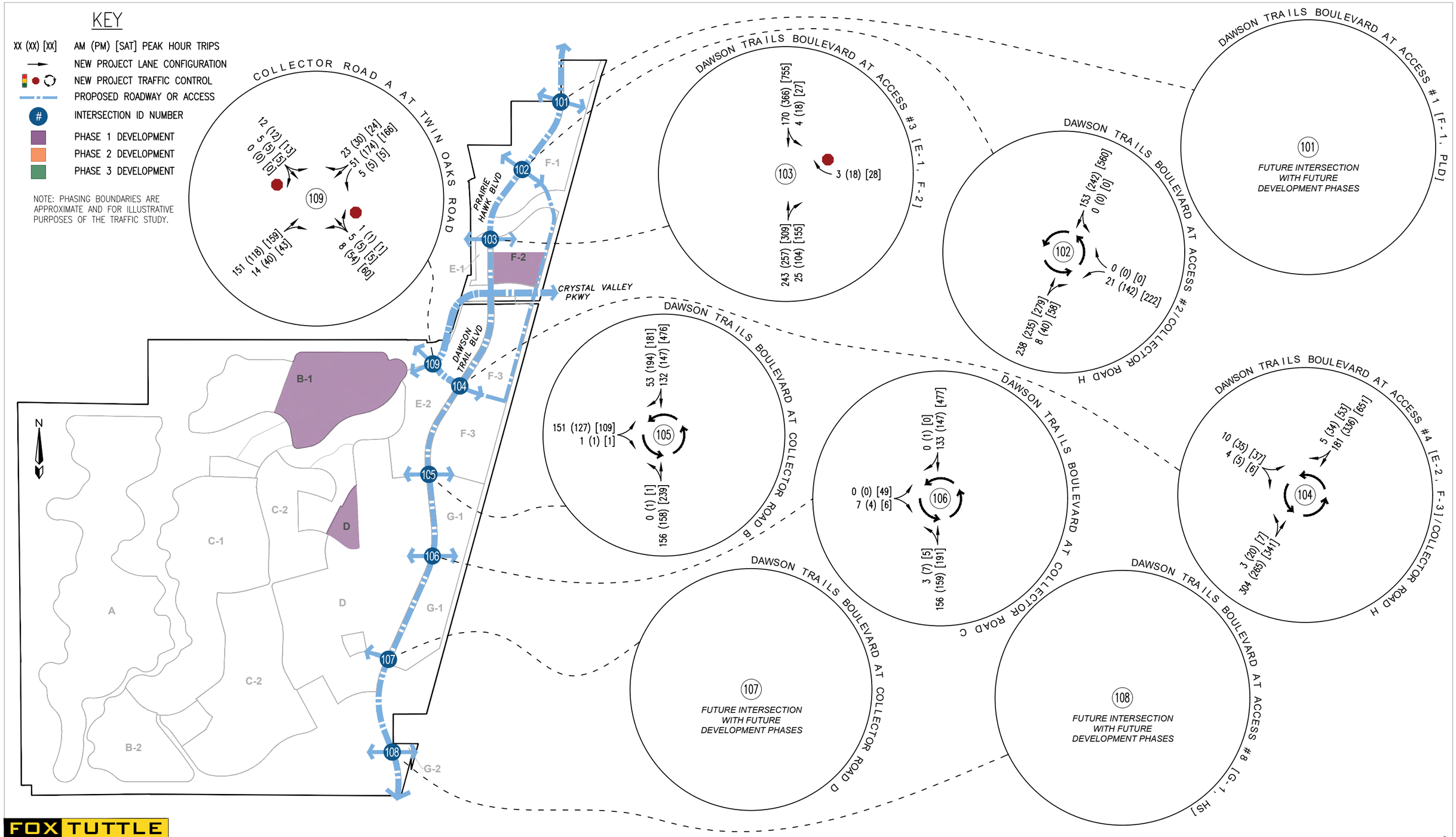


FOX TUTTLE TRANSPORTATION GROUP

DAWSON TRAILS MASTER TRANSPORTATION STUDY

YEAR 2025 BACKGROUND + PHASE 1 TRAFFIC VOLUMES [EXISTING INTERSECTIONS] (CONT.)

FT Project #	20092	Original Scale	NTS	Date	4/6/2022	Drawn by	MAR	Figure #	11B

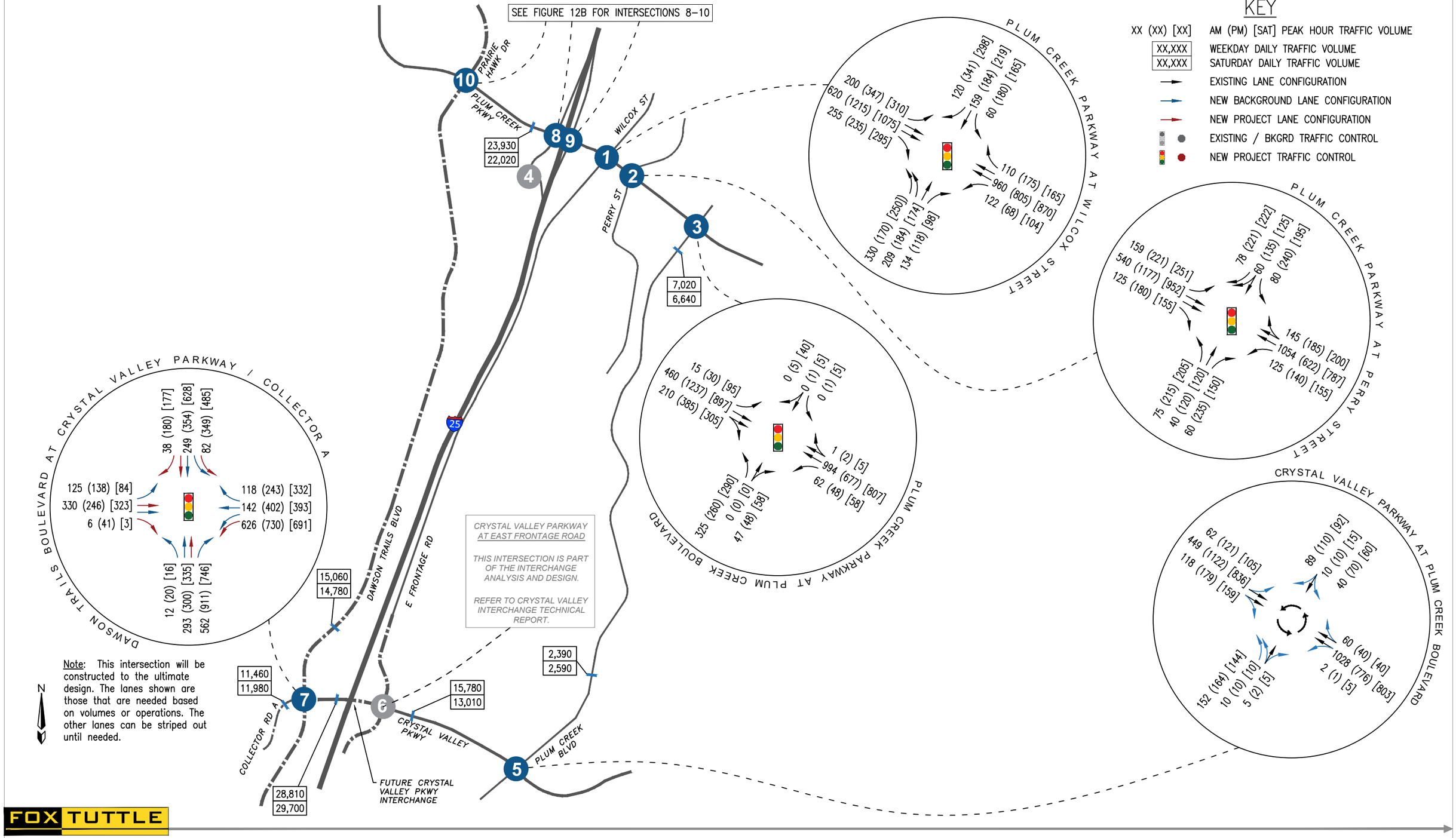


FOX TUTTLE TRANSPORTATION GROUP

DAWSON TRAILS MASTER TRANSPORTATION STUDY

YEAR 2025 BKGRD + PHASE 1 TRAFFIC VOLUMES [ACCESS & INTERNAL INTERSECTIONS]

FT Project #	20092	Original Scale	NTS	Date	5/24/22	Drawn by	MAR	Figure #	11C

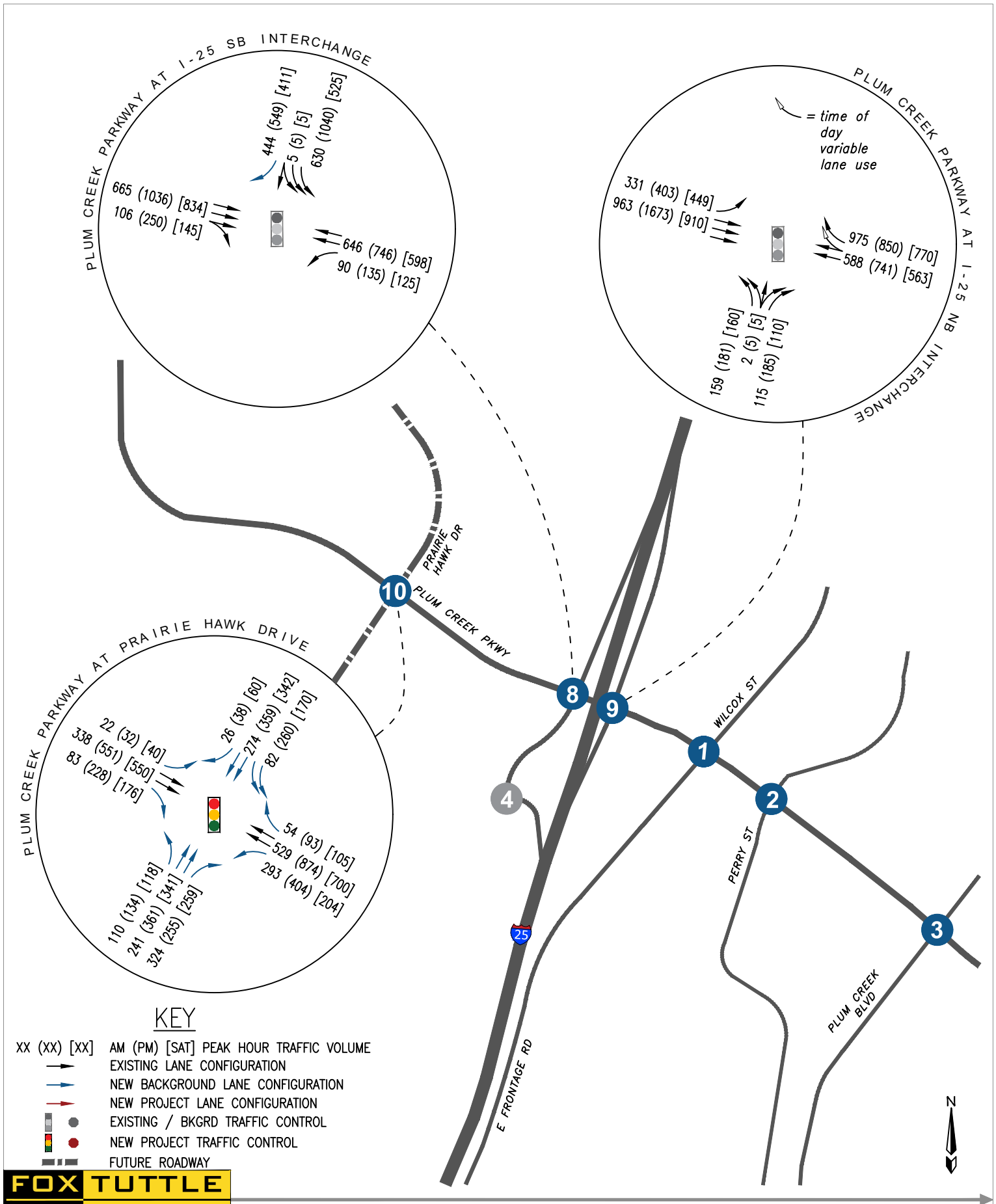


FOX TUTTLE TRANSPORTATION GROUP

DAWSON TRAILS MASTER TRANSPORTATION STUDY

YEAR 2030 BACKGROUND + PHASE 1 & 2 TRAFFIC VOLUMES [EXISTING INTERSECTIONS]

FT Project #	20092	Original Scale	NTS	Date	4/6/2022	Drawn by	MAR	Figure #	12A



KEY

XX (XX) [XX] AM (PM) [SAT] PEAK HOUR TRAFFIC VOLUME

EXISTING LANE CONFIGURATION

NEW BACKGROUND LANE CONFIGURATION

NEW PROJECT LANE CONFIGURATION

EXISTING / BKGRD TRAFFIC CONTROL

NEW PROJECT TRAFFIC CONTROL

FUTURE ROADWAY

FOX TUTTLE TRANSPORTATION GROUP

DAWSON TRAILS MASTER TRANSPORTATION STUDY

YEAR 2030 BACKGRD + PHASE 1 & 2 TRAFFIC VOLUMES [EXISTING INTERSECTIONS] (CONT.)

FT Project #	20092	Original Scale	NTS	Date	4/6/2022	Drawn by	MAR	Figure #	12B

KEY

XX (XX) [XX] AM (PM) [SAT] PEAK HOUR TRIPS

NEW PROJECT LANE CONFIGURATION

NEW PROJECT TRAFFIC CONTROL

PROPOSED ROADWAY OR ACCESS

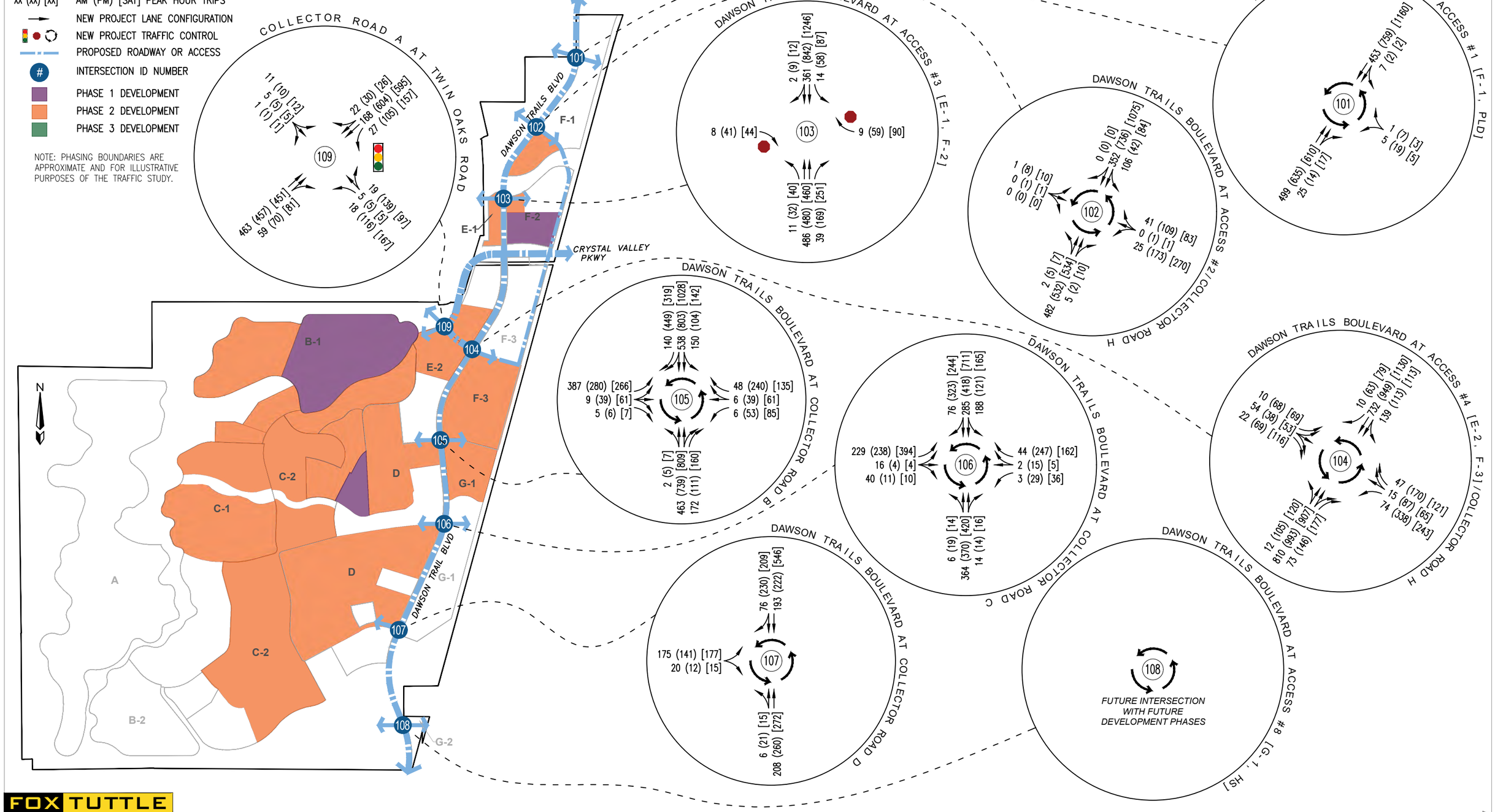
INTERSECTION ID NUMBER

PHASE 1 DEVELOPMENT

PHASE 2 DEVELOPMENT

PHASE 3 DEVELOPMENT

NOTE: PHASING BOUNDARIES ARE APPROXIMATE AND FOR ILLUSTRATIVE PURPOSES OF THE TRAFFIC STUDY.

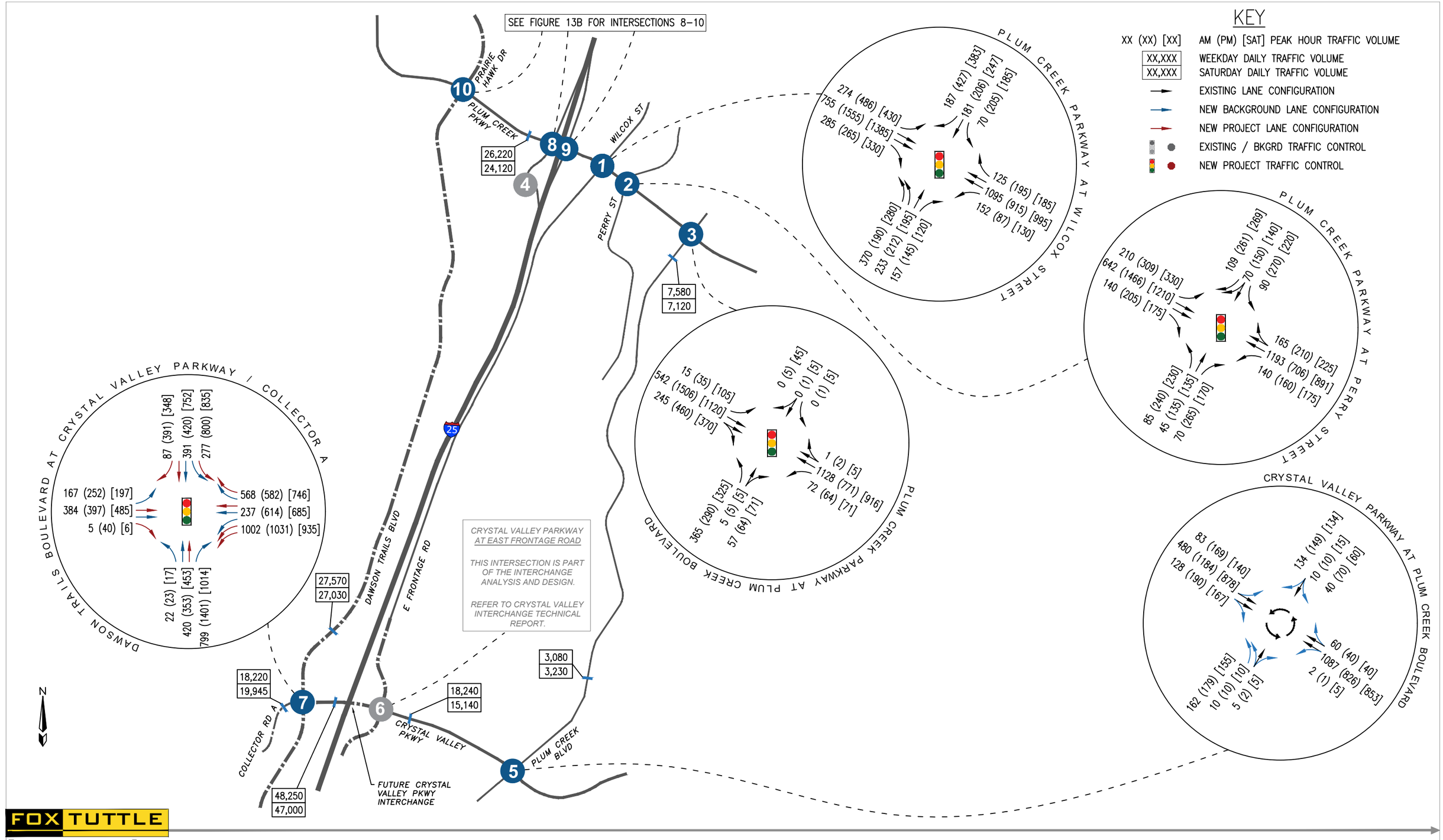


FOX TUTTLE TRANSPORTATION GROUP

DAWSON TRAILS MASTER TRANSPORTATION STUDY

YEAR 2030 BKGRD + PHASE 1 & 2 TRAFFIC VOLUMES [ACCESS & INTERNAL INTERSECTIONS]

FT Project #	20092	Original Scale	NTS	Date	5/24/22	Drawn by	MAR	Figure #	12C

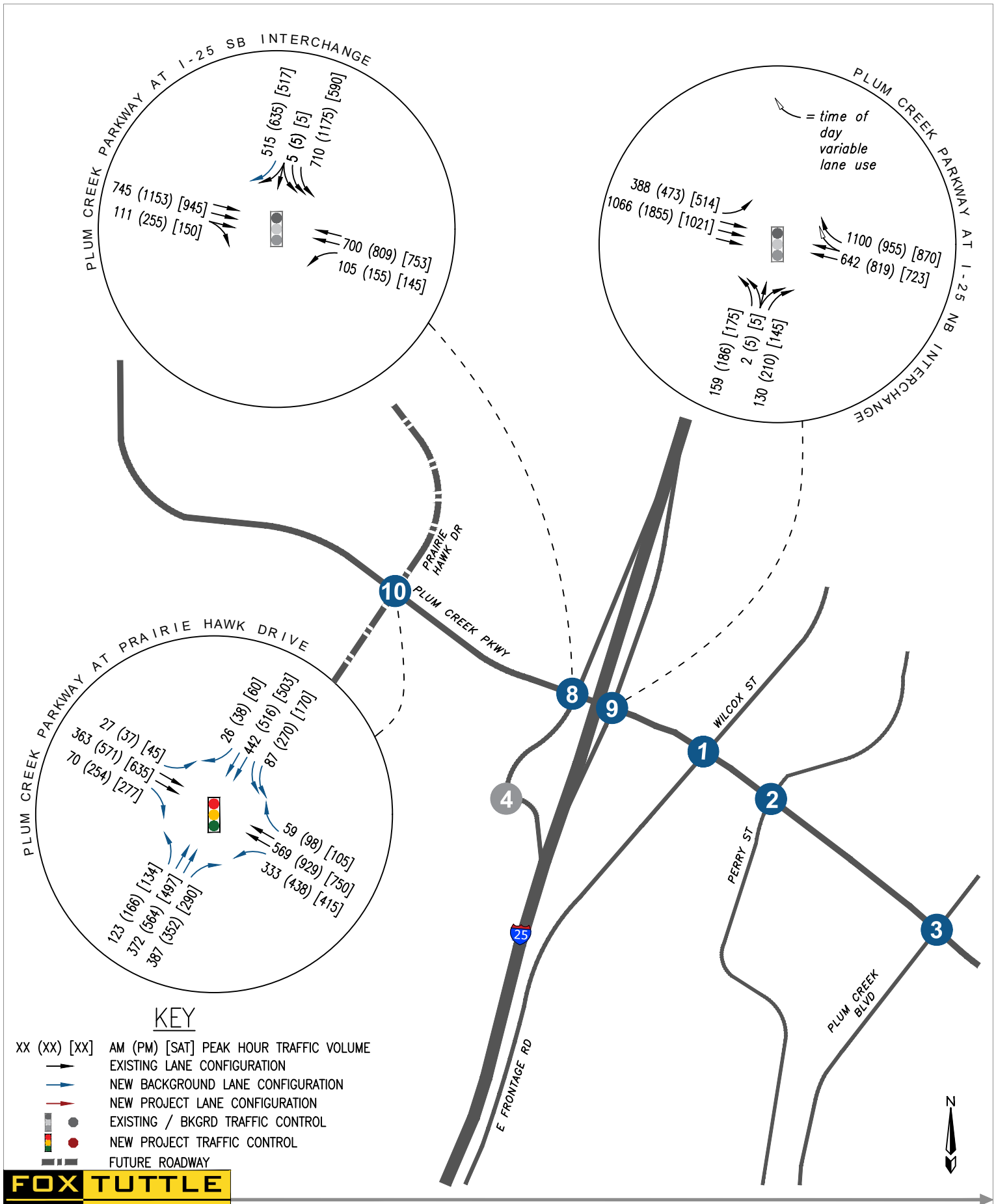


FOX TUTTLE TRANSPORTATION GROUP

DAWSON TRAILS MASTER TRANSPORTATION STUDY

YEAR 2040 BACKGROUND + FULL BUILDOUT TRAFFIC VOLUMES [EXISTING INTERSECTIONS]

FT Project #	20092	Original Scale	NTS	Date	4/3/2022	Drawn by	MAR	Figure #	13A



FOX TUTTLE TRANSPORTATION GROUP

DAWSON TRAILS MASTER TRANSPORTATION STUDY

YEAR 2040 BACKGRD + FULL BUILDOUT TRAFFIC VOLUMES [EXISTING INTERSECTIONS] (CONT.)

FT Project #	20092	Original Scale	NTS	Date	4/3/2022	Drawn by	MAR	Figure #	13B

KEY

XX (XX) [XX] AM (PM) [SAT] PEAK HOUR TRIPS

NEW PROJECT LANE CONFIGURATION

NEW PROJECT TRAFFIC CONTROL

PROPOSED ROADWAY OR ACCESS

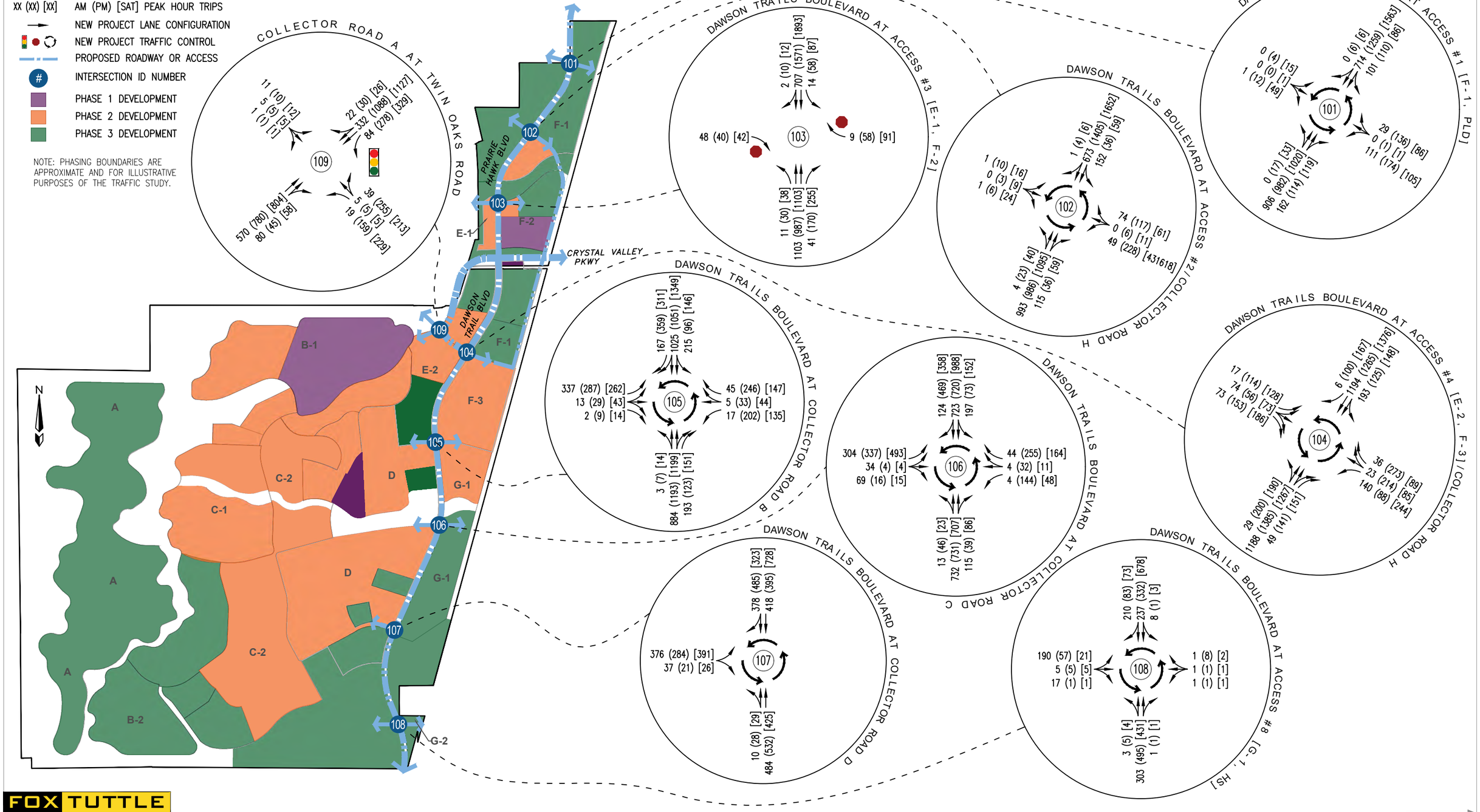
INTERSECTION ID NUMBER

PHASE 1 DEVELOPMENT

PHASE 2 DEVELOPMENT

PHASE 3 DEVELOPMENT

NOTE: PHASING BOUNDARIES ARE APPROXIMATE AND FOR ILLUSTRATIVE PURPOSES OF THE TRAFFIC STUDY.



FOX TUTTLE TRANSPORTATION GROUP

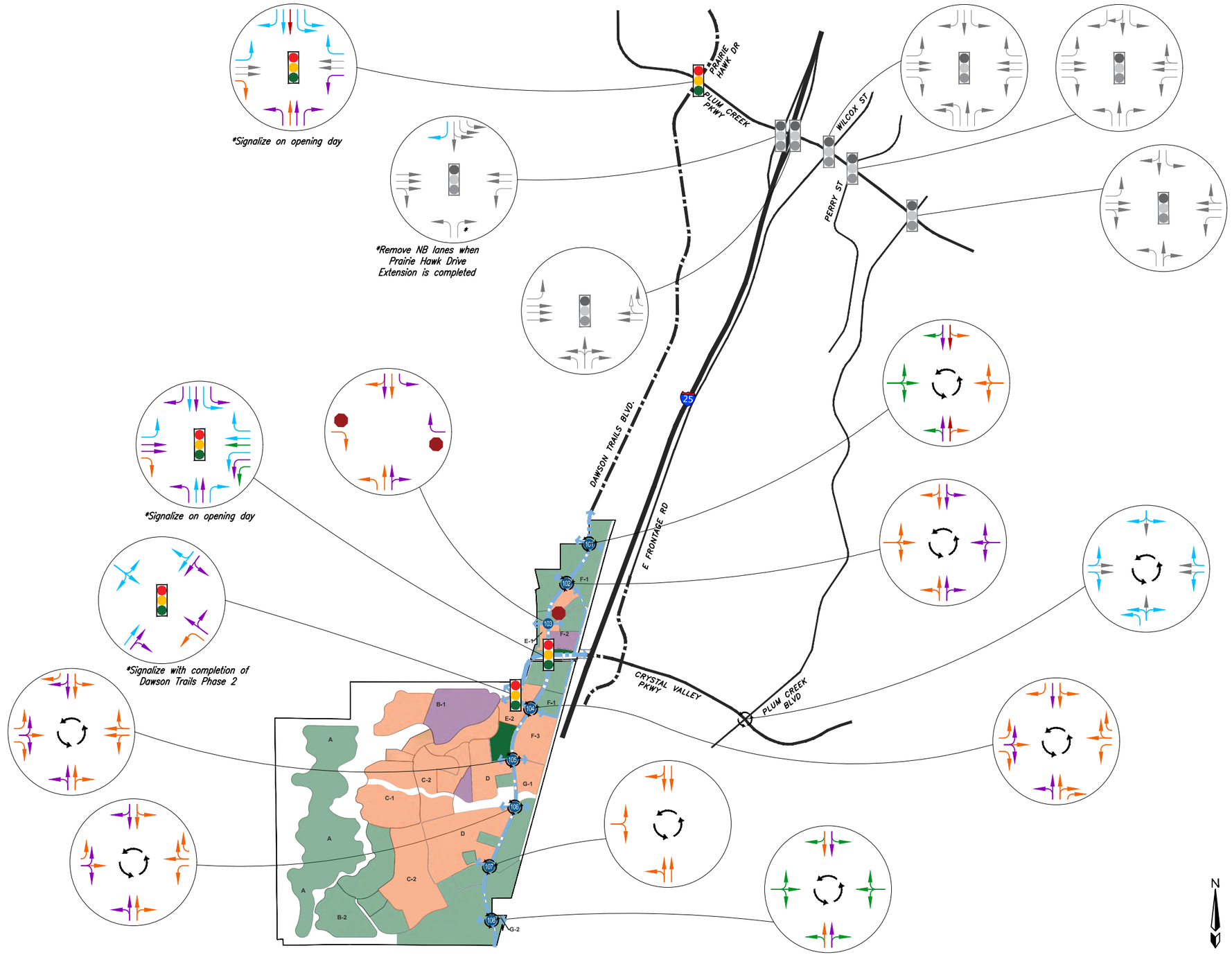
DAWSON TRAILS MASTER TRANSPORTATION STUDY

YEAR 2040 BKGRD + FULL BUILDOUT TRAFFIC VOLUMES [ACCESS & INTERNAL INTERSECTIONS]

FT Project #	20092	Original Scale	NTS	Date	5/24/22	Drawn by	MAR	Figure #	13C

KEY

- EXISTING LANE CONFIGURATION
- YR 2025 BACKGROUND LANE CONFIG.
- YR 2025 PROJECT (PH. 1) LANE CONFIG.
- YR 2030 BACKGROUND LANE CONFIG.
- YR 2030 PROJECT (PH. 1+2) LANE CONFIG.
- YR 2040 PROJECT (FULL BUILD) LANE CONFIG.
- EXISTING TRAFFIC CONTROL
- NEW FUTURE TRAFFIC CONTROL



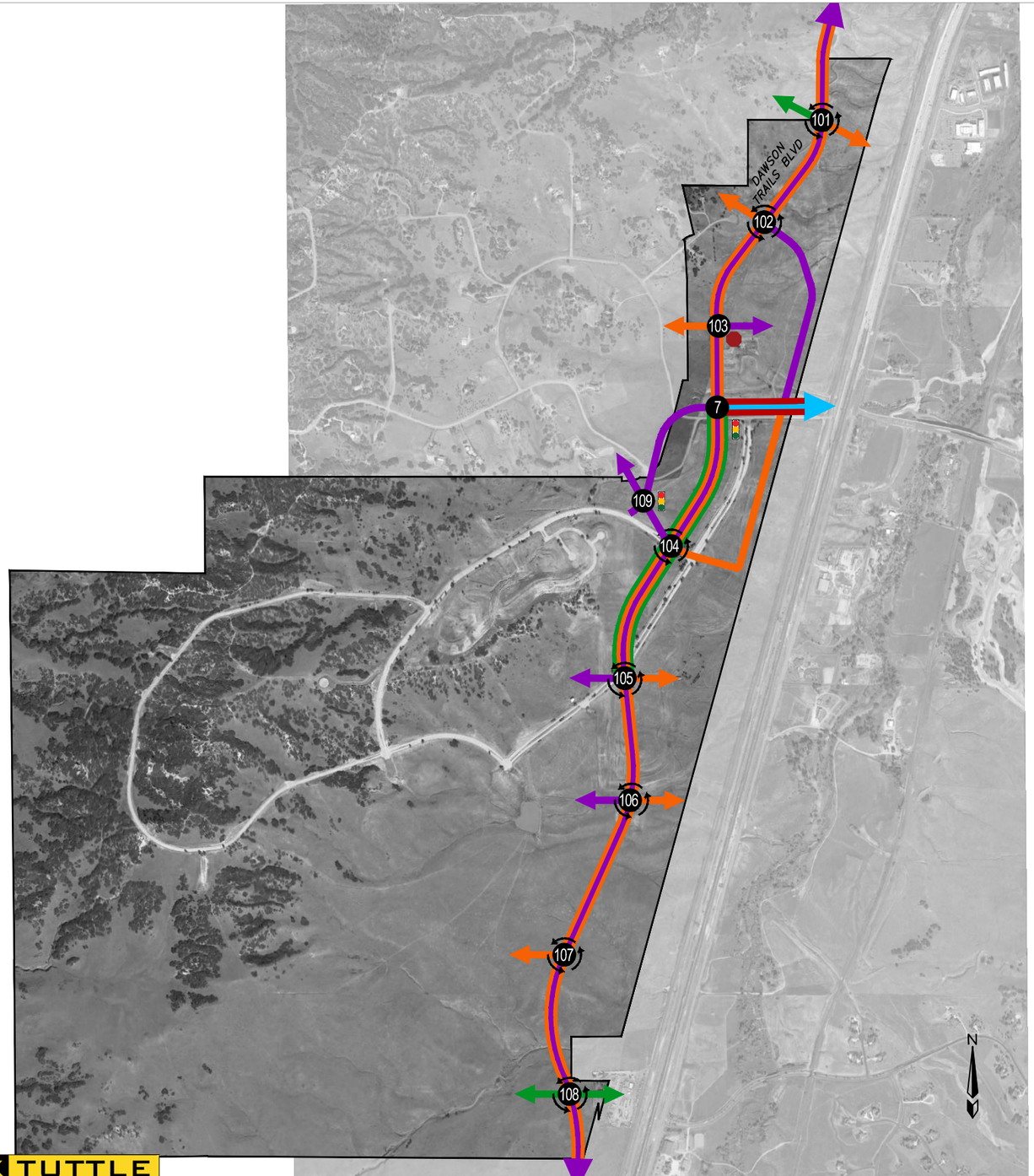
Note: The traffic study provides technical information and evaluates the need for transportation mitigation as traffic grows, but it does not address infrastructure commitments or obligations of Dawson TRAILS. That needs to be discussed and negotiated in the development agreements for the project.

FOX TUTTLE
TRANSPORTATION GROUP

DAWSON TRAILS MASTER TRANSPORTATION STUDY

INTERSECTION GEOMETRY AND TRAFFIC CONTROL (PER YEAR AND PHASE)

FT Project #	20092	Original Scale	NTS	Date	5/24/22	Drawn by	MAR	Figure #	14A



KEY & LIST OF IMPROVEMENTS

EXISTING LANE CONFIGURATION

YR 2025 BACKGROUND

- CRYSTAL VALLEY INTERCHANGE (BY OTHERS)
- CRYSTAL VALLEY BLVD. – 2 LANES
- INT. #7 CRYSTAL VALLEY BLVD. AT DAWSON TRAILS BLVD.

YR 2025 PROJECT (PH. 1)

- DAWSON TRAILS BLVD./ PRAIRIE HAWK BLVD. (PLUM CREEK PKWY TO SOUTH PROJECT BOUNDARY) – 2 LANES
- CRYSTAL VALLEY BLVD. – 4 LANES
- COLLECTOR ROAD H (NORTH OF CRYSTAL VALLEY BLVD.)
- COLLECTOR ROAD A (WEST OF DAWSON TRAILS BLVD.)
- INT. #102 WITH NB, SB, AND WB APPROACHES
- INT. #103 WITH NB, SB, AND WB APPROACHES
- INT. #104 WITH NB, SB, AND EB APPROACHES
- INT. #105 WITH NB, SB, AND EB APPROACHES
- INT. #106 WITH NB, SB, AND EB APPROACHES
- INT. #109 TWIN OAKS RD. WITH NB, SB, EB, AND WB APPROACHES

YR 2030 BACKGROUND

- CRYSTAL VALLEY BLVD. – 4 LANES

YR 2030 PROJECT (PH. 1+2)

- DAWSON TRAILS BLVD./ PRAIRIE HAWK BLVD. (PLUM CREEK PKWY TO SOUTH PROJECT BOUNDARY) – 4 LANES
- COLLECTOR ROAD H (SOUTH OF CRYSTAL VALLEY BLVD.)
- INT. #101 WITH NB, SB AND WB APPROACHES
- INT. #102 ADD EB APPROACH
- INT. #103 ADD EB APPROACH
- INT. #104 ADD WB APPROACH
- INT. #105 ADD WB APPROACH
- INT. #106 ADD WB APPROACH
- INT. #107 WITH NB, SB AND EB APPROACHES
- INT. #109 TWIN OAKS RD. SIGNALIZE

YR 2040 PROJECT (FULL BUILD)

- DAWSON TRAILS BLVD./ PRAIRIE HAWK BLVD. (CRYSTAL VALLEY BLVD. TO INT. #105) – 6 LANES
- INT. #101 ADD EB APPROACH
- INT. #108 WITH NB, SB, EB, AND WB APPROACHES

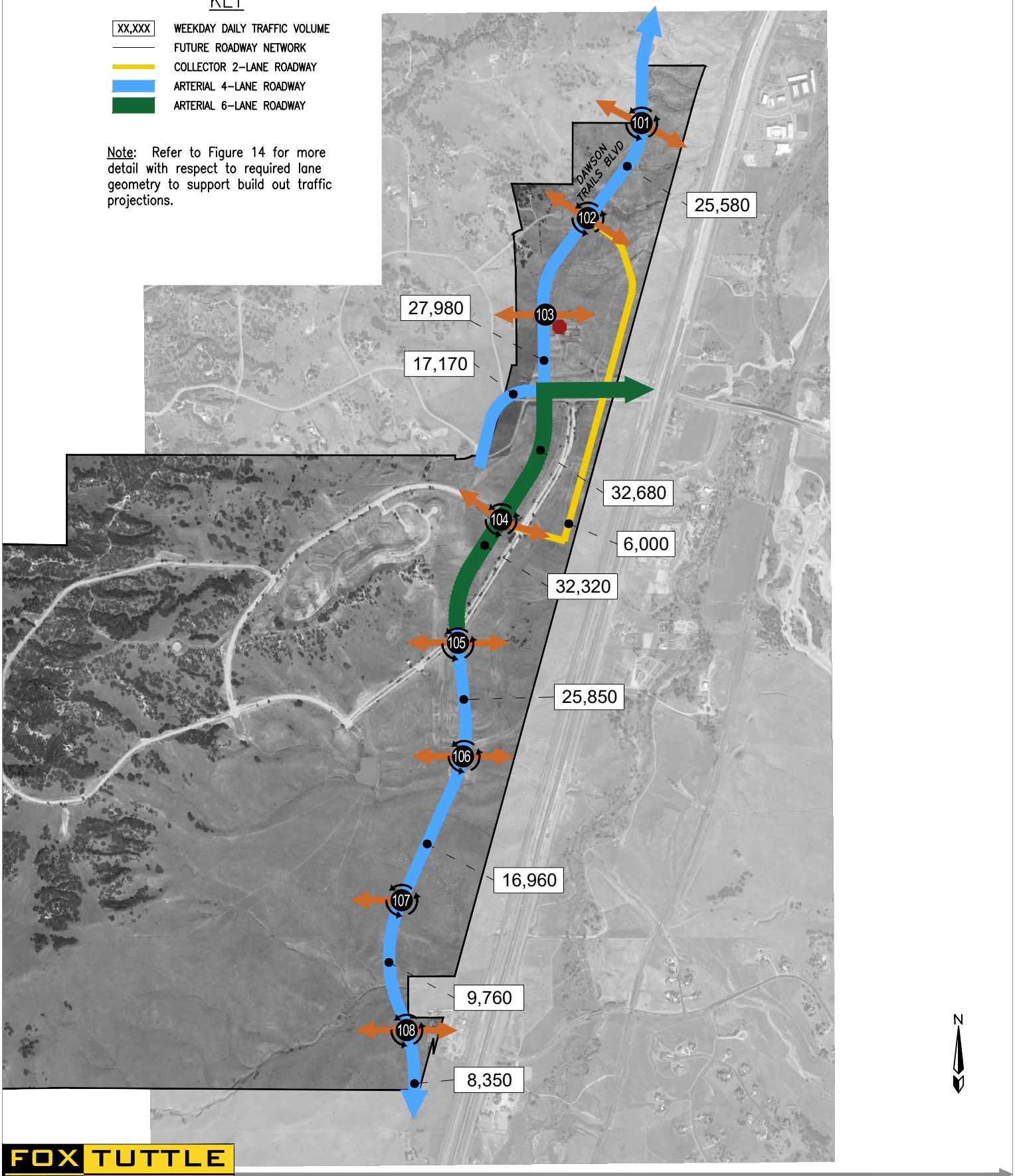
Note: The traffic study provides technical information and evaluates the need for transportation mitigation as traffic grows, but it does not address infrastructure commitments or obligations of Dawson TRAILS. That needs to be discussed and negotiated in the development agreements for the project.

FOX TUTTLE
TRANSPORTATION GROUP

DAWSON TRAILS MASTER TRANSPORTATION STUDY

PHASING OF ROADWAY IMPROVEMENTS

FT Project #	20092	Original Scale	NTS	Date	5/24/22	Drawn by	MAR	Figure #	14B

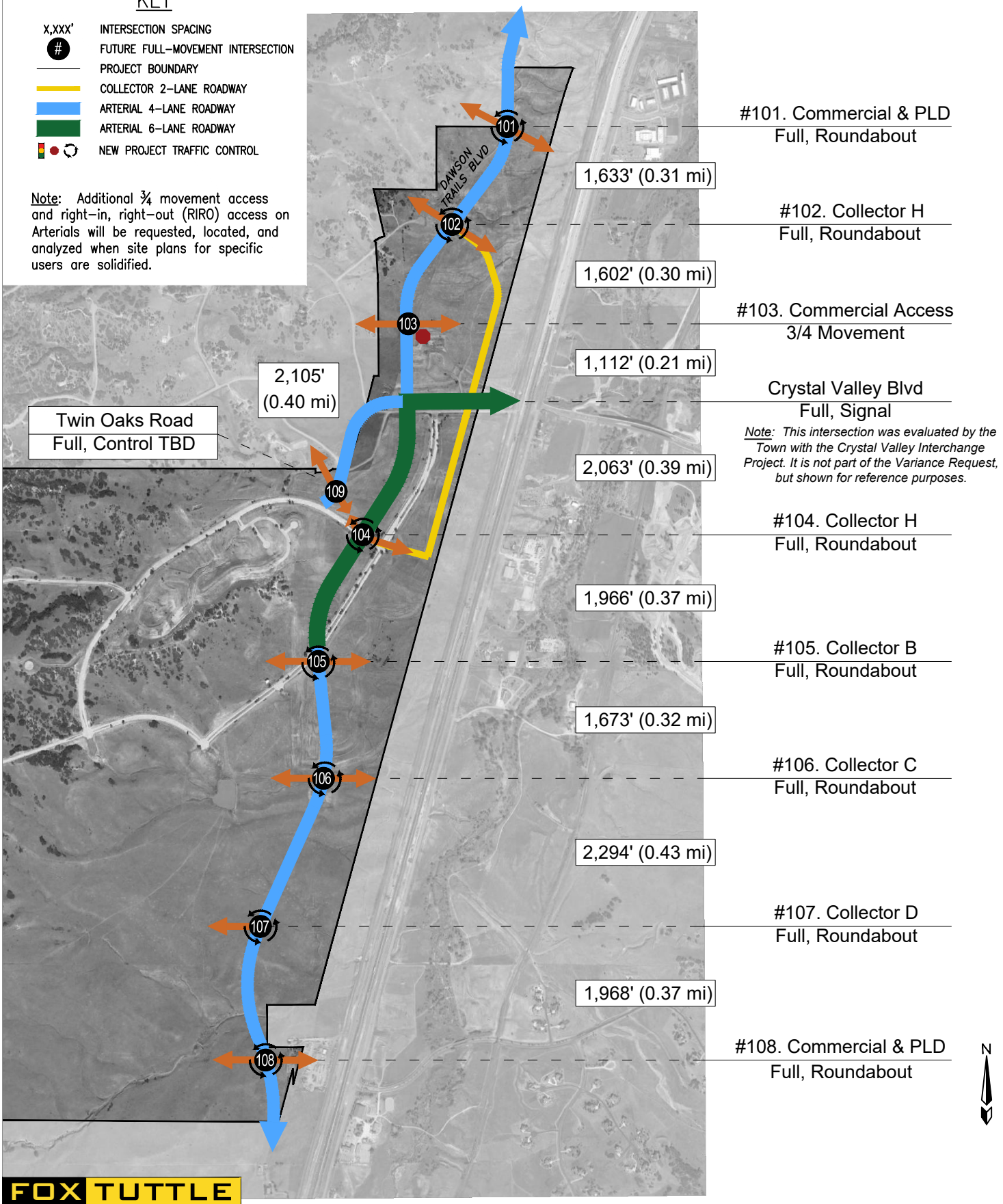


FOX TUTTLE
TRANSPORTATION GROUP

DAWSON TRAILS MASTER TRANSPORTATION STUDY

FULL BUILDOUT ROADWAY MASTER PLAN

FT Project #	20992	Original Scale		Date	5/24/2022	Drawn by	MAR	Figure #	15



FOX TUTTLE
TRANSPORTATION GROUP

DAWSON TRAILS MASTER TRANSPORTATION STUDY

PROPOSED FULL MOVEMENT INTERSECTION SPACING

FT Project #	20092	Original Scale	Date	5/24/22	Drawn by	MAR	Figure #	16

Appendix:

Level of Service Definitions

Existing Traffic Data

Intersection Capacity Worksheets

Signal Warrant Analysis

Level of Service Definitions

LEVEL OF SERVICE DEFINITIONS

In rating roadway and intersection operating conditions with existing or future traffic volumes, "Levels of Service" (LOS) A through F are used, with LOS A indicating very good operation and LOS F indicating poor operation. Levels of service at signalized and unsignalized intersections are closely associated with vehicle delays experienced in seconds per vehicle. More complete level of service definitions and delay data for signal and stop sign controlled intersections are contained in the following table for reference.

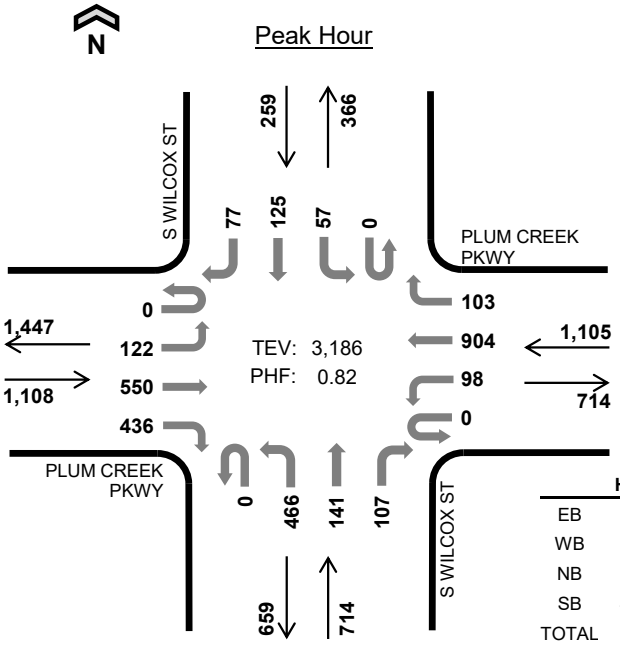
Level of Service Rating	Delay in seconds per vehicle *(a)*		Definition
	Signalized	Unsignalized	
A	0.0 to 10.0	0.0 to 10.0	Low vehicular traffic volumes; primarily free flow operations. Density is low and vehicles can freely maneuver within the traffic stream. Drivers are able to maintain their desired speeds with little or no delay.
B	10.1 to 20.0	10.1 to 15.0	Stable vehicular traffic volume flow with potential for some restriction of operating speeds due to traffic conditions. Vehicle maneuvering is only slightly restricted. The stopped delays are not bothersome and drivers are not subject to appreciable tension.
C	20.1 to 35.0	15.1 to 25.0	Stable traffic operations, however the ability for vehicles to maneuver is more restricted by the increase in traffic volumes. Relatively satisfactory operating speeds prevail, but adverse signal coordination or longer vehicle queues cause delays along the corridor.
D	35.1 to 55.0	25.1 to 35.0	Approaching unstable vehicular traffic flow where small increases in volume could cause substantial delays. Most drivers are restricted in ability to maneuver and selection of travel speeds due to congestion. Driver comfort and convenience are low, but tolerable.
E	55.1 to 80.0	35.1 to 50.0	Traffic operations characterized by significant approach delays and average travel speeds of one-half to one-third the free flow speed. Vehicular flow is unstable and there is potential for stoppages of brief duration. High signal density, extensive vehicle queuing, or corridor signal progression/timing are the typical causes of vehicle delays at signalized corridors.
F	> 80.0	> 50.0	Forced vehicular traffic flow and operations with high approach delays at critical intersections. Vehicle speeds are reduced substantially, and stoppages may occur for short or long periods of time because of downstream congestion.

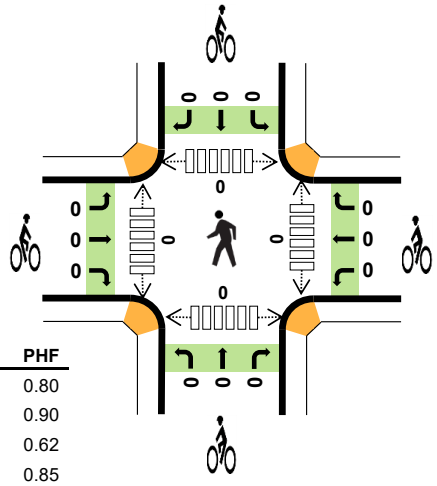
(a) Delay ranges based on Highway Capacity Manual (6th Edition, 2016) criteria.

Existing Traffic Data

S WILCOX ST
PLUM CREEK PKWY

Date: 04-29-2021
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:15 AM to 8:15 AM





	HV %:	PHF
EB	5.1%	0.80
WB	1.5%	0.90
NB	2.7%	0.62
SB	4.6%	0.85
TOTAL	3.3%	0.82

Two-Hour Count Summaries

Interval Start		PLUM CREEK PKWY Eastbound				PLUM CREEK PKWY Westbound				S WILCOX ST Northbound				S WILCOX ST Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	20	85	85	0	12	233	13	0	85	16	7	0	3	11	17	587	0
7:15 AM		**0**	**22**	**123**	**86**	**0**	**19**	**244**	**26**	**0**	**110**	**26**	**4**	**0**	**13**	**24**	**18**	**715**	0
7:30 AM		**0**	**23**	**118**	**128**	**0**	**35**	**257**	**16**	**0**	**98**	**22**	**12**	**0**	**11**	**42**	**23**	**785**	0
7:45 AM		**0**	**41**	**175**	**132**	**0**	**37**	**197**	**28**	**0**	**161**	**64**	**63**	**0**	**13**	**41**	**18**	**970**	3,057
8:00 AM		**0**	**36**	**134**	**90**	**0**	**7**	**206**	**33**	**0**	**97**	**29**	**28**	**0**	**20**	**18**	**18**	**716**	**3,186**
8:15 AM		0	40	147	85	0	13	186	21	0	85	25	7	0	20	18	20	667	3,138
8:30 AM		0	36	155	91	0	13	154	23	0	61	16	6	0	12	18	37	622	2,975
8:45 AM		0	47	134	91	0	8	184	25	0	75	21	10	0	18	14	43	670	2,675
Count Total		0	265	1,071	788	0	144	1,661	185	0	772	219	137	0	110	186	194	5,732	0
Peak Hour	**All**	**0**	**122**	**550**	**436**	**0**	**98**	**904**	**103**	**0**	**466**	**141**	**107**	**0**	**57**	**125**	**77**	**3,186**	**0**
	HV	**0**	**6**	**20**	**30**	**0**	**2**	**15**	**0**	**0**	**10**	**7**	**2**	**0**	**4**	**5**	**3**	**104**	**0**
	HV%	**-**	**5%**	**4%**	**7%**	**-**	**2%**	**2%**	**0%**	**-**	**2%**	**5%**	**2%**	**-**	**7%**	**4%**	**4%**	**3%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	16	4	2	1	*23*	0	0	0	0	*0*	0	0	0	0	*0*
7:15 AM	**12**	**1**	**6**	**6**	***25***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
7:30 AM	**9**	**5**	**3**	**2**	***19***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
7:45 AM	**12**	**7**	**8**	**2**	***29***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:00 AM	**23**	**4**	**2**	**2**	***31***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
8:15 AM	17	7	5	4	*33*	0	1	0	0	*1*	0	1	0	0	*1*
8:30 AM	13	6	4	1	*24*	0	0	0	0	*0*	0	0	0	0	*0*
8:45 AM	5	6	7	2	*20*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	107	40	37	20	*204*	0	1	0	0	*1*	0	1	0	0	*1*
Peak Hour	**56**	**17**	**19**	**12**	***104***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	PLUM CREEK PKWY Eastbound				PLUM CREEK PKWY Westbound				S WILCOX ST Northbound				S WILCOX ST Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	7	9	0	0	4	0	0	1	1	0	0	0	0	1	23	0
7:15 AM	**0**	**0**	**6**	**6**	**0**	**0**	**1**	**0**	**0**	**4**	**2**	**0**	**0**	**1**	**3**	**2**	**25**	0
7:30 AM	**0**	**1**	**3**	**5**	**0**	**0**	**5**	**0**	**0**	**0**	**3**	**0**	**0**	**1**	**0**	**1**	**19**	0
7:45 AM	**0**	**2**	**4**	**6**	**0**	**2**	**5**	**0**	**0**	**5**	**1**	**2**	**0**	**1**	**1**	**0**	**29**	96
8:00 AM	**0**	**3**	**7**	**13**	**0**	**0**	**4**	**0**	**0**	**1**	**1**	**0**	**0**	**1**	**1**	**0**	**31**	**104**
8:15 AM	0	0	3	14	0	1	6	0	0	4	1	0	0	2	1	1	33	112
8:30 AM	0	0	4	9	0	2	3	1	0	4	0	0	0	0	0	1	24	117
8:45 AM	0	0	1	4	0	0	5	1	0	5	2	0	0	0	1	1	20	108
Count Total	0	6	35	66	0	5	33	2	0	24	11	2	0	6	7	7	204	0
Peak Hour	**0**	**6**	**20**	**30**	**0**	**2**	**15**	**0**	**0**	**10**	**7**	**2**	**0**	**4**	**5**	**3**	**104**	**0**

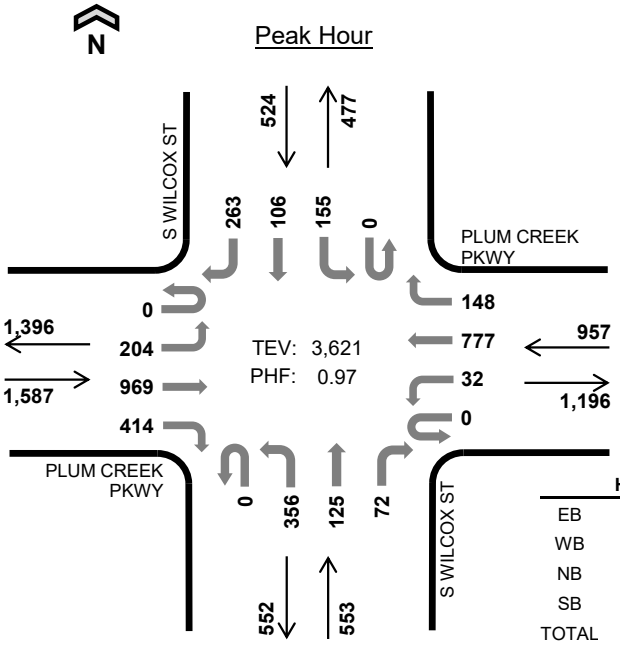
Two-Hour Count Summaries - Bikes

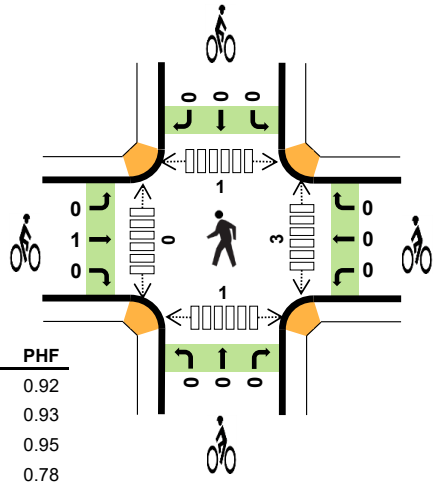
Interval Start	PLUM CREEK PKWY Eastbound			PLUM CREEK PKWY Westbound			S WILCOX ST Northbound			S WILCOX ST Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
8:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Count Total	0	0	0	0	1	0	0	0	0	0	0	0	1	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

S WILCOX ST
PLUM CREEK PKWY

Date: 04-29-2021
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:15 PM to 5:15 PM





	HV %:	PHF
EB	1.6%	0.92
WB	1.6%	0.93
NB	3.1%	0.95
SB	0.2%	0.78
TOTAL	1.6%	0.97

Two-Hour Count Summaries

Interval Start	PLUM CREEK PKWY Eastbound				PLUM CREEK PKWY Westbound				S WILCOX ST Northbound				S WILCOX ST Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	42	229	116	0	20	169	35	0	97	29	20	0	43	28	57	885	0
4:15 PM	**0**	**39**	**270**	**108**	**0**	**8**	**211**	**38**	**0**	**90**	**29**	**19**	**0**	**34**	**27**	**58**	**931**	0
4:30 PM	**0**	**45**	**241**	**105**	**0**	**8**	**194**	**31**	**0**	**77**	**33**	**20**	**0**	**43**	**30**	**60**	**887**	0
4:45 PM	**0**	**66**	**264**	**102**	**0**	**3**	**181**	**42**	**0**	**96**	**36**	**14**	**0**	**37**	**21**	**45**	**907**	3,610
5:00 PM	**0**	**54**	**194**	**99**	**0**	**13**	**191**	**37**	**0**	**93**	**27**	**19**	**0**	**41**	**28**	**100**	**896**	**3,621**
5:15 PM	0	46	233	86	0	11	190	25	0	107	28	22	0	50	29	47	874	3,564
5:30 PM	0	54	190	77	0	9	173	41	0	99	41	10	0	45	19	57	815	3,492
5:45 PM	0	55	227	82	0	7	170	35	0	82	17	13	0	41	31	39	799	3,384
Count Total	0	401	1,848	775	0	79	1,479	284	0	741	240	137	0	334	213	463	6,994	0
Peak Hour All	**0**	**204**	**969**	**414**	**0**	**32**	**777**	**148**	**0**	**356**	**125**	**72**	**0**	**155**	**106**	**263**	**3,621**	**0**
Peak Hour HV	**0**	**1**	**8**	**16**	**0**	**2**	**13**	**0**	**0**	**11**	**3**	**3**	**0**	**1**	**0**	**0**	**58**	**0**
Peak Hour HV%	**-**	**0%**	**1%**	**4%**	**-**	**6%**	**2%**	**0%**	**-**	**3%**	**2%**	**4%**	**-**	**1%**	**0%**	**0%**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	6	3	5	3	*17*	0	0	1	0	*1*	1	0	1	0	*2*
4:15 PM	**6**	**6**	**3**	**1**	***16***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:30 PM	**4**	**4**	**6**	**0**	***14***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:45 PM	**8**	**1**	**5**	**0**	***14***	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	*0*
5:00 PM	**7**	**4**	**3**	**0**	***14***	**0**	**0**	**0**	**0**	***0***	**3**	**0**	**1**	**1**	***5***
5:15 PM	3	2	4	0	*9*	0	0	0	0	*0*	2	1	0	1	*4*
5:30 PM	1	1	4	0	*6*	0	0	0	0	*0*	0	0	0	0	*0*
5:45 PM	1	4	3	3	*11*	0	1	1	0	*2*	0	0	0	0	*0*
Count Total	36	25	33	7	*101*	1	1	2	0	*4*	6	1	2	2	*11*
Peak Hour	**25**	**15**	**17**	**1**	***58***	**1**	**0**	**0**	**0**	***1***	**3**	**0**	**1**	**1**	***5***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	PLUM CREEK PKWY Eastbound				PLUM CREEK PKWY Westbound				S WILCOX ST Northbound				S WILCOX ST Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	4	2	0	0	2	1	0	4	1	0	0	1	0	2	17	0
4:15 PM	**0**	**0**	**4**	**2**	**0**	**1**	**5**	**0**	**0**	**2**	**0**	**1**	**0**	**1**	**0**	**0**	**16**	0
4:30 PM	**0**	**0**	**0**	**4**	**0**	**0**	**4**	**0**	**0**	**3**	**2**	**1**	**0**	**0**	**0**	**0**	**14**	0
4:45 PM	**0**	**1**	**2**	**5**	**0**	**0**	**1**	**0**	**0**	**4**	**0**	**1**	**0**	**0**	**0**	**0**	**14**	61
5:00 PM	**0**	**0**	**2**	**5**	**0**	**1**	**3**	**0**	**0**	**2**	**1**	**0**	**0**	**0**	**0**	**0**	**14**	**58**
5:15 PM	0	0	1	2	0	0	2	0	0	4	0	0	0	0	0	0	9	51
5:30 PM	0	0	0	1	0	0	1	0	0	4	0	0	0	0	0	0	6	43
5:45 PM	0	1	0	0	0	0	3	1	0	3	0	0	0	0	1	2	11	40
Count Total	0	2	13	21	0	2	21	2	0	26	4	3	0	2	1	4	101	0
Peak Hour	**0**	**1**	**8**	**16**	**0**	**2**	**13**	**0**	**0**	**11**	**3**	**3**	**0**	**1**	**0**	**0**	**58**	**0**

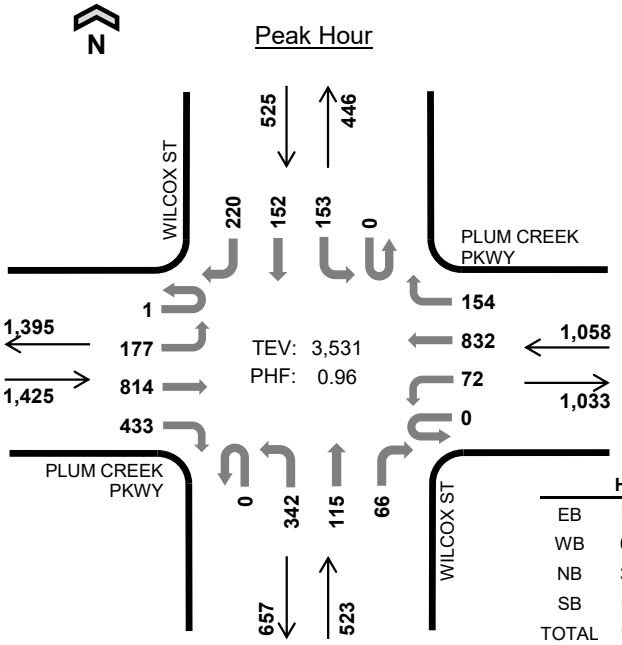
Two-Hour Count Summaries - Bikes

Interval Start	PLUM CREEK PKWY Eastbound			PLUM CREEK PKWY Westbound			S WILCOX ST Northbound			S WILCOX ST Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	1	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	2
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	1	0	0	1	0	0	0	0	2	2
Count Total	0	1	0	0	1	0	1	1	0	0	0	0	4	0
Peak Hour	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**

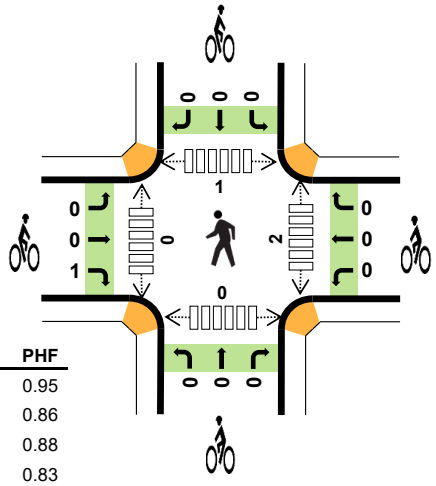
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

WILCOX ST
PLUM CREEK PKWY

Date: 05-01-2021
Count Period: 11:00 AM to 1:00 PM
Peak Hour: 11:15 AM to 12:15 PM



	HV %:	PHF
EB	1.8%	0.95
WB	0.9%	0.86
NB	3.1%	0.88
SB	1.5%	0.83
TOTAL	1.7%	0.96



Two-Hour Count Summaries

Interval Start	PLUM CREEK PKWY Eastbound				PLUM CREEK PKWY Westbound				WILCOX ST Northbound				WILCOX ST Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM	1	36	138	73	0	15	208	31	0	94	32	17	0	61	47	52	805	0
11:15 AM	**0**	**44**	**219**	**91**	**0**	**24**	**191**	**35**	**0**	**80**	**31**	**19**	**0**	**31**	**55**	**72**	**892**	0
11:30 AM	**0**	**52**	**193**	**131**	**0**	**14**	**190**	**40**	**0**	**97**	**34**	**17**	**0**	**36**	**35**	**38**	**877**	0
11:45 AM	**1**	**34**	**200**	**104**	**0**	**13**	**203**	**39**	**0**	**89**	**22**	**16**	**0**	**40**	**29**	**52**	**842**	3,416
12:00 PM	**0**	**47**	**202**	**107**	**0**	**21**	**248**	**40**	**0**	**76**	**28**	**14**	**0**	**46**	**33**	**58**	**920**	**3,531**
12:15 PM	0	40	193	79	0	15	217	29	0	96	35	14	0	45	28	49	840	3,479
12:30 PM	0	48	177	68	0	12	197	38	0	108	26	16	0	37	30	39	796	3,398
12:45 PM	0	45	182	72	0	16	198	38	0	81	33	15	0	42	36	38	796	3,352
Count Total	2	346	1,504	725	0	130	1,652	290	0	721	241	128	0	338	293	398	6,768	0
Peak Hour All	**1**	**177**	**814**	**433**	**0**	**72**	**832**	**154**	**0**	**342**	**115**	**66**	**0**	**153**	**152**	**220**	**3,531**	**0**
Peak Hour HV	**1**	**2**	**14**	**8**	**0**	**0**	**10**	**0**	**0**	**15**	**1**	**0**	**0**	**0**	**2**	**6**	**59**	**0**
Peak Hour HV%	**100%**	**1%**	**2%**	**2%**	**-**	**0%**	**1%**	**0%**	**-**	**4%**	**1%**	**0%**	**-**	**0%**	**1%**	**3%**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
11:00 AM	9	5	3	1	*18*	0	0	0	3	*3*	0	0	0	0	*0*
11:15 AM	**7**	**6**	**3**	**4**	***20***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
11:30 AM	**9**	**1**	**4**	**0**	***14***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**1**	**0**	*2*
11:45 AM	**5**	**2**	**5**	**4**	***16***	**1**	**0**	**0**	**0**	***1***	**1**	**0**	**0**	**0**	*1*
12:00 PM	**4**	**1**	**4**	**0**	***9***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
12:15 PM	3	3	3	1	*10*	1	0	0	0	*1*	0	0	0	0	*0*
12:30 PM	5	6	2	0	*13*	0	0	0	1	*1*	0	0	0	0	*0*
12:45 PM	4	4	0	0	*8*	0	0	2	1	*3*	2	0	0	0	*2*
Count Total	46	28	24	10	*108*	2	0	2	5	*9*	4	0	1	0	*5*
Peak Hour	**25**	**10**	**16**	**8**	***59***	**1**	**0**	**0**	**0**	***1***	**2**	**0**	**1**	**0**	***3***

Project Manager: (416) 310-6469 project.manager.ca@idaxdata.com

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	PLUM CREEK PKWY Eastbound				PLUM CREEK PKWY Westbound				WILCOX ST Northbound				WILCOX ST Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM	0	0	8	1	0	0	5	0	0	1	2	0	0	1	0	0	18	0
11:15 AM	**0**	**1**	**3**	**3**	**0**	**0**	**6**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**2**	**2**	**20**	0
11:30 AM	**0**	**0**	**5**	**4**	**0**	**0**	**1**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	0
11:45 AM	**1**	**1**	**3**	**0**	**0**	**0**	**2**	**0**	**0**	**4**	**1**	**0**	**0**	**0**	**0**	**4**	**16**	68
12:00 PM	**0**	**0**	**3**	**1**	**0**	**0**	**1**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	**59**
12:15 PM	0	0	3	0	0	0	3	0	0	2	1	0	0	0	0	1	10	49
12:30 PM	0	2	1	2	0	1	5	0	0	2	0	0	0	0	0	0	13	48
12:45 PM	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	8	40
Count Total	1	4	30	11	0	1	27	0	0	20	4	0	0	1	2	7	108	0
Peak Hour	**1**	**2**	**14**	**8**	**0**	**0**	**10**	**0**	**0**	**15**	**1**	**0**	**0**	**0**	**2**	**6**	**59**	**0**

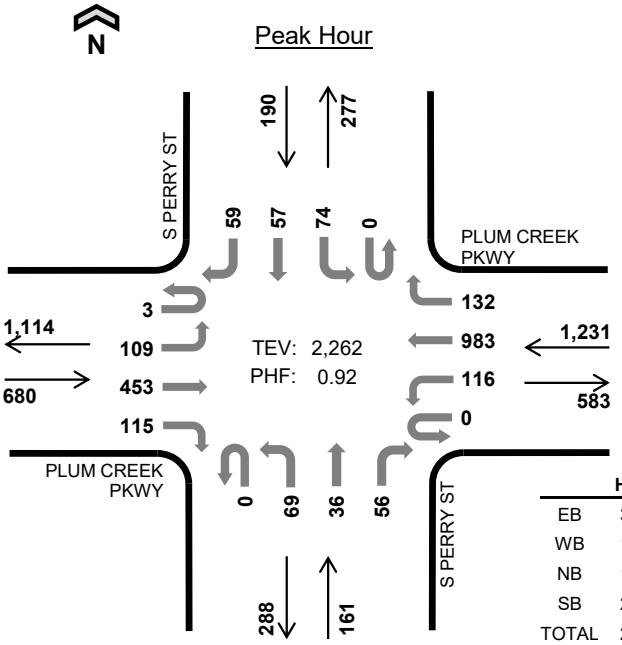
Two-Hour Count Summaries - Bikes

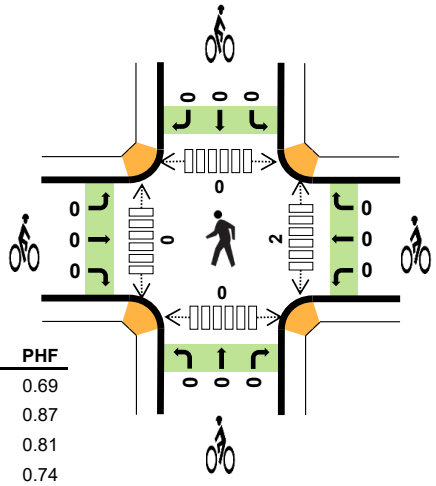
Interval Start	PLUM CREEK PKWY Eastbound			PLUM CREEK PKWY Westbound			WILCOX ST Northbound			WILCOX ST Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
11:00 AM	0	0	0	0	0	0	0	0	0	0	3	0	3	0
11:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
11:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
11:45 AM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	4
12:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
12:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	2
12:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	3
12:45 PM	0	0	0	0	0	0	0	2	0	0	1	0	3	5
Count Total	0	0	2	0	0	0	0	2	0	0	5	0	9	0
Peak Hour	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

S PERRY ST
PLUM CREEK PKWY

Date: 04-29-2021
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:15 AM to 8:15 AM





	HV %:	PHF
EB	3.8%	0.69
WB	1.2%	0.87
NB	1.2%	0.81
SB	2.6%	0.74
TOTAL	2.1%	0.92

Two-Hour Count Summaries

Interval Start		PLUM CREEK PKWY Eastbound				PLUM CREEK PKWY Westbound				S PERRY ST Northbound				S PERRY ST Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	10	56	20	0	22	236	21	0	15	6	9	0	7	7	9	418	0
7:15 AM		**1**	**25**	**100**	**17**	**0**	**25**	**275**	**55**	**0**	**14**	**8**	**12**	**0**	**20**	**7**	**8**	**567**	0
7:30 AM		**0**	**17**	**66**	**22**	**0**	**28**	**273**	**25**	**0**	**18**	**9**	**9**	**0**	**21**	**19**	**24**	**531**	0
7:45 AM		**1**	**35**	**171**	**39**	**0**	**32**	**220**	**27**	**0**	**19**	**7**	**15**	**0**	**14**	**16**	**16**	**612**	2,128
8:00 AM		**1**	**32**	**116**	**37**	**0**	**31**	**215**	**25**	**0**	**18**	**12**	**20**	**0**	**19**	**15**	**11**	**552**	**2,262**
8:15 AM		0	37	103	25	0	19	186	42	0	18	16	12	0	15	20	21	514	2,209
8:30 AM		0	29	90	41	0	31	140	35	0	30	9	24	0	20	21	23	493	2,171
8:45 AM		0	27	98	33	0	28	167	36	0	37	12	17	0	20	24	20	519	2,078
Count Total		3	212	800	234	0	216	1,712	266	0	169	79	118	0	136	129	132	4,206	0
Peak Hour	**All**	**3**	**109**	**453**	**115**	**0**	**116**	**983**	**132**	**0**	**69**	**36**	**56**	**0**	**74**	**57**	**59**	**2,262**	**0**
	HV	**0**	**4**	**21**	**1**	**0**	**0**	**13**	**2**	**0**	**0**	**1**	**1**	**0**	**1**	**0**	**4**	**48**	**0**
	HV%	**0%**	**4%**	**5%**	**1%**	**-**	**0%**	**1%**	**2%**	**-**	**0%**	**3%**	**2%**	**-**	**1%**	**0%**	**7%**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	7	4	2	0	*13*	0	0	0	0	*0*	1	0	0	0	*1*
7:15 AM	**6**	**2**	**0**	**1**	***9***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
7:30 AM	**4**	**3**	**1**	**2**	***10***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**0**	**0**	*1*
7:45 AM	**8**	**5**	**1**	**2**	***16***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**0**	**0**	*1*
8:00 AM	**8**	**5**	**0**	**0**	***13***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
8:15 AM	5	7	2	1	*15*	0	0	1	0	*1*	0	0	0	0	*0*
8:30 AM	4	6	0	2	*12*	0	0	0	0	*0*	0	1	0	0	*1*
8:45 AM	2	3	3	2	*10*	0	0	0	1	*1*	4	0	1	0	*5*
Count Total	44	35	9	10	*98*	0	0	1	1	*2*	7	1	1	0	*9*
Peak Hour	**26**	**15**	**2**	**5**	***48***	**0**	**0**	**0**	**0**	***0***	**2**	**0**	**0**	**0**	***2***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	PLUM CREEK PKWY Eastbound				PLUM CREEK PKWY Westbound				S PERRY ST Northbound				S PERRY ST Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	7	0	0	0	4	0	0	0	2	0	0	0	0	0	13	0
7:15 AM	**0**	**2**	**4**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**9**	0
7:30 AM	**0**	**1**	**3**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**2**	**10**	0
7:45 AM	**0**	**1**	**7**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	**16**	48
8:00 AM	**0**	**0**	**7**	**1**	**0**	**0**	**4**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**13**	**48**
8:15 AM	0	0	5	0	0	0	6	1	0	1	1	0	0	0	0	1	15	54
8:30 AM	0	0	3	1	0	0	6	0	0	0	0	0	0	0	1	1	12	56
8:45 AM	0	0	1	1	0	0	3	0	0	1	0	2	0	1	0	1	10	50
Count Total	0	4	37	3	0	0	32	3	0	2	4	3	0	2	1	7	98	0
Peak Hour	**0**	**4**	**21**	**1**	**0**	**0**	**13**	**2**	**0**	**0**	**1**	**1**	**0**	**1**	**0**	**4**	**48**	**0**

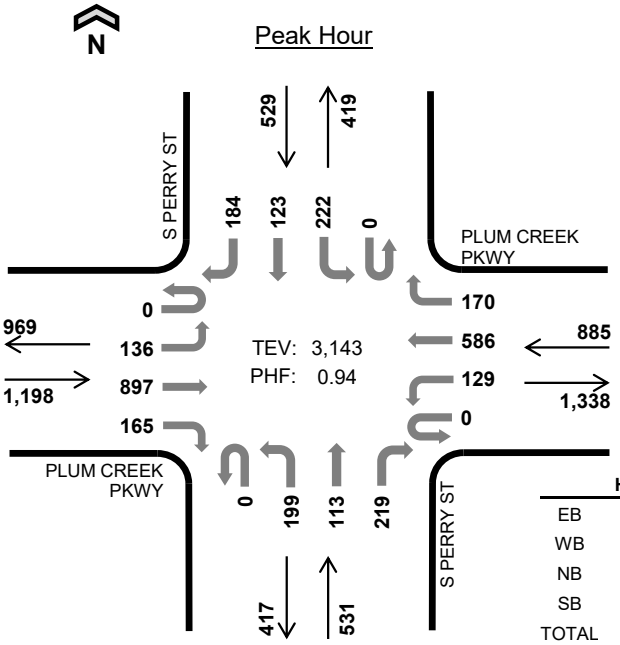
Two-Hour Count Summaries - Bikes

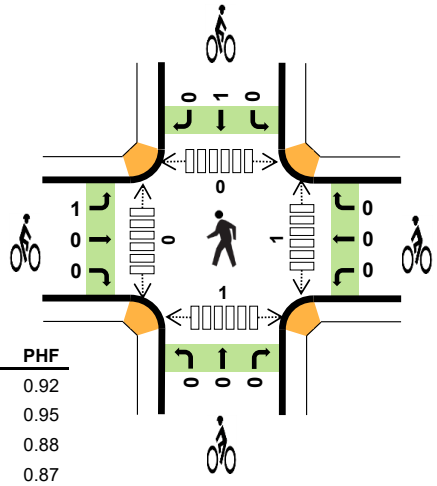
Interval Start	PLUM CREEK PKWY Eastbound			PLUM CREEK PKWY Westbound			S PERRY ST Northbound			S PERRY ST Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
8:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	1	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	1	2
Count Total	0	0	0	0	0	0	0	1	0	0	0	1	2	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

S PERRY ST
PLUM CREEK PKWY

Date: 04-29-2021
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:15 PM to 5:15 PM





	HV %:	PHF
EB	1.1%	0.92
WB	1.2%	0.95
NB	0.8%	0.88
SB	0.4%	0.87
TOTAL	1.0%	0.94

Two-Hour Count Summaries

Interval Start		PLUM CREEK PKWY Eastbound				PLUM CREEK PKWY Westbound				S PERRY ST Northbound				S PERRY ST Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	43	197	43	1	29	128	30	0	58	27	50	0	46	27	56	735	0
4:15 PM		**0**	**51**	**233**	**40**	**0**	**32**	**147**	**53**	**0**	**65**	**37**	**49**	**0**	**52**	**29**	**45**	**833**	0
4:30 PM		**0**	**40**	**225**	**51**	**0**	**33**	**147**	**51**	**0**	**39**	**24**	**51**	**0**	**62**	**40**	**50**	**813**	0
4:45 PM		**0**	**29**	**246**	**32**	**0**	**26**	**146**	**40**	**0**	**38**	**26**	**56**	**0**	**44**	**28**	**44**	**755**	3,136
5:00 PM		**0**	**16**	**193**	**42**	**0**	**38**	**146**	**26**	**0**	**57**	**26**	**63**	**0**	**64**	**26**	**45**	**742**	**3,143**
5:15 PM		0	32	250	37	0	36	148	27	0	49	24	56	0	63	20	32	774	3,084
5:30 PM		0	31	178	20	0	32	153	26	0	55	22	56	0	51	20	25	669	2,940
5:45 PM		0	33	235	25	0	17	149	39	0	35	21	40	0	57	20	35	706	2,891
Count Total		0	275	1,757	290	1	243	1,164	292	0	396	207	421	0	439	210	332	6,027	0
Peak Hour	**All**	**0**	**136**	**897**	**165**	**0**	**129**	**586**	**170**	**0**	**199**	**113**	**219**	**0**	**222**	**123**	**184**	**3,143**	**0**
	HV	**0**	**1**	**12**	**0**	**0**	**1**	**9**	**1**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**2**	**30**	**0**
	HV%	**-**	**1%**	**1%**	**0%**	**-**	**1%**	**2%**	**1%**	**-**	**2%**	**0%**	**0%**	**-**	**0%**	**0%**	**1%**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	5	4	2	0	*11*	0	0	0	0	*0*	1	0	0	1	*2*
4:15 PM	**6**	**4**	**1**	**1**	***12***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**0**	**0**	*1*
4:30 PM	**1**	**3**	**1**	**0**	***5***	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**0**	*0*
4:45 PM	**3**	**2**	**0**	**0**	***5***	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	*0*
5:00 PM	**3**	**2**	**2**	**1**	***8***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**1**	***1***
5:15 PM	1	1	0	1	*3*	0	0	0	0	*0*	0	2	0	4	*6*
5:30 PM	0	2	0	0	*2*	0	0	0	0	*0*	1	0	0	0	*1*
5:45 PM	0	3	2	0	*5*	0	1	0	0	*1*	0	0	0	0	*0*
Count Total	19	21	8	3	*51*	1	1	0	1	*3*	3	2	0	6	*11*
Peak Hour	**13**	**11**	**4**	**2**	***30***	**1**	**0**	**0**	**1**	***2***	**1**	**0**	**0**	**1**	***2***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	PLUM CREEK PKWY Eastbound				PLUM CREEK PKWY Westbound				S PERRY ST Northbound				S PERRY ST Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	5	0	0	0	4	0	0	0	2	0	0	0	0	0	11	0
4:15 PM	**0**	**0**	**6**	**0**	**0**	**0**	**4**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**12**	0
4:30 PM	**0**	**1**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	0
4:45 PM	**0**	**0**	**3**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	33
5:00 PM	**0**	**0**	**3**	**0**	**0**	**0**	**1**	**1**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**1**	**8**	**30**
5:15 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	3	21
5:30 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	18
5:45 PM	0	0	0	0	0	0	3	0	0	1	1	0	0	0	0	0	5	18
Count Total	0	1	18	0	0	1	19	1	0	5	3	0	0	0	0	3	51	0
Peak Hour	**0**	**1**	**12**	**0**	**0**	**1**	**9**	**1**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**2**	**30**	**0**

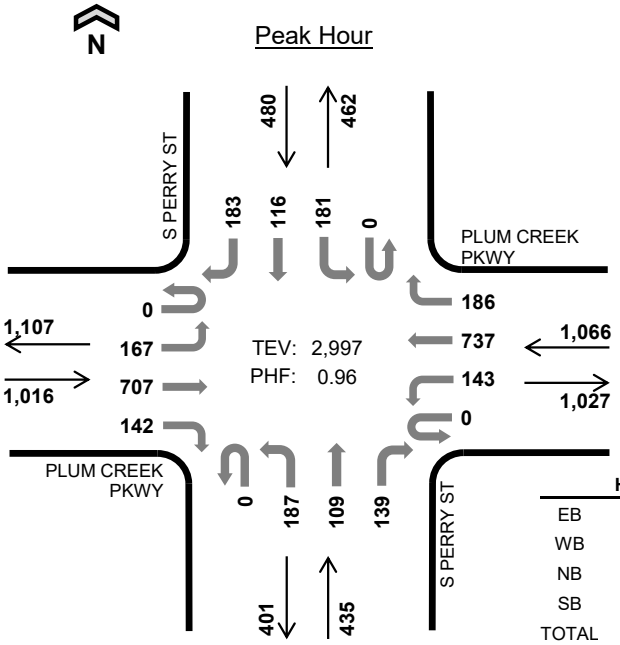
Two-Hour Count Summaries - Bikes

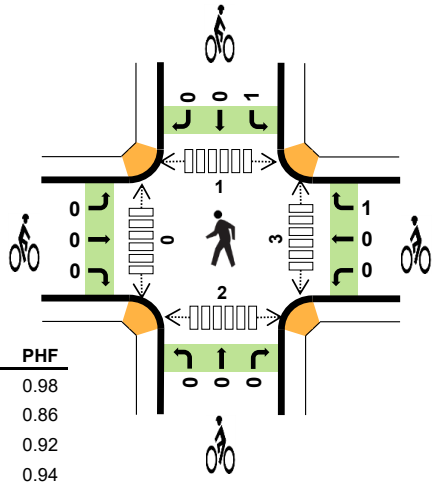
Interval Start	PLUM CREEK PKWY Eastbound			PLUM CREEK PKWY Westbound			S PERRY ST Northbound			S PERRY ST Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	0
4:45 PM	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	2
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	1
Count Total	1	0	0	0	1	0	0	0	0	0	1	0	3	0
Peak Hour	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

S PERRY ST
PLUM CREEK PKWY

Date: 05-01-2021
Count Period: 11:00 AM to 1:00 PM
Peak Hour: 11:15 AM to 12:15 PM





	HV %:	PHF
EB	1.3%	0.98
WB	1.0%	0.86
NB	0.2%	0.92
SB	0.0%	0.94
TOTAL	0.8%	0.96

Two-Hour Count Summaries

Interval Start	PLUM CREEK PKWY Eastbound				PLUM CREEK PKWY Westbound				S PERRY ST Northbound				S PERRY ST Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM	0	38	156	25	0	42	173	39	0	42	26	34	0	51	29	43	698	0
11:15 AM	**0**	**41**	**183**	**34**	**0**	**36**	**170**	**52**	**0**	**56**	**29**	**33**	**0**	**47**	**34**	**46**	**761**	0
11:30 AM	**0**	**39**	**174**	**38**	**0**	**37**	**169**	**41**	**0**	**39**	**24**	**37**	**0**	**48**	**32**	**44**	**722**	0
11:45 AM	**0**	**48**	**172**	**37**	**0**	**29**	**179**	**44**	**0**	**48**	**26**	**34**	**0**	**47**	**26**	**44**	**734**	2,915
12:00 PM	**0**	**39**	**178**	**33**	**0**	**41**	**219**	**49**	**0**	**44**	**30**	**35**	**0**	**39**	**24**	**49**	**780**	**2,997**
12:15 PM	0	22	180	33	0	37	179	48	0	34	39	45	0	53	23	37	730	2,966
12:30 PM	0	33	169	24	0	36	183	45	0	32	25	37	0	45	21	39	689	2,933
12:45 PM	0	19	187	29	0	32	180	38	0	37	15	33	0	58	25	43	696	2,895
Count Total	0	279	1,399	253	0	290	1,452	356	0	332	214	288	0	388	214	345	5,810	0
Peak Hour All	**0**	**167**	**707**	**142**	**0**	**143**	**737**	**186**	**0**	**187**	**109**	**139**	**0**	**181**	**116**	**183**	**2,997**	**0**
Peak Hour HV	**0**	**1**	**12**	**0**	**0**	**0**	**10**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**25**	**0**
Peak Hour HV%	**-**	**1%**	**2%**	**0%**	**-**	**0%**	**1%**	**1%**	**-**	**0%**	**0%**	**1%**	**-**	**0%**	**0%**	**0%**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
11:00 AM	8	2	0	5	*15*	0	0	0	0	*0*	1	0	0	0	*1*
11:15 AM	**3**	**6**	**1**	**0**	***10***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**0**	**0**	*1*
11:30 AM	**5**	**2**	**0**	**0**	***7***	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	*0*
11:45 AM	**2**	**2**	**0**	**0**	***4***	**0**	**0**	**0**	**1**	***1***	**1**	**0**	**0**	**0**	*1*
12:00 PM	**3**	**1**	**0**	**0**	***4***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**1**	**2**	***4***
12:15 PM	3	2	0	0	*5*	0	0	0	0	*0*	0	0	0	0	*0*
12:30 PM	1	6	2	2	*11*	0	0	0	0	*0*	1	0	2	0	*3*
12:45 PM	3	4	0	1	*8*	0	0	0	0	*0*	2	0	0	0	*2*
Count Total	28	25	3	8	*64*	0	1	0	1	*2*	7	0	3	2	*12*
Peak Hour	**13**	**11**	**1**	**0**	***25***	**0**	**1**	**0**	**1**	***2***	**3**	**0**	**1**	**2**	***6***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	PLUM CREEK PKWY Eastbound				PLUM CREEK PKWY Westbound				S PERRY ST Northbound				S PERRY ST Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM	0	0	8	0	0	0	2	0	0	0	0	0	0	1	1	3	15	0
11:15 AM	**0**	**0**	**3**	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**10**	0
11:30 AM	**0**	**1**	**4**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	0
11:45 AM	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	36
12:00 PM	**0**	**0**	**3**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**25**
12:15 PM	0	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	5	20
12:30 PM	0	0	0	1	0	2	4	0	0	0	2	0	0	0	0	2	11	24
12:45 PM	0	0	3	0	0	0	3	1	0	0	0	0	0	0	0	1	8	28
Count Total	0	1	26	1	0	2	21	2	0	0	2	1	0	1	1	6	64	0
Peak Hour	**0**	**1**	**12**	**0**	**0**	**0**	**10**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**25**	**0**

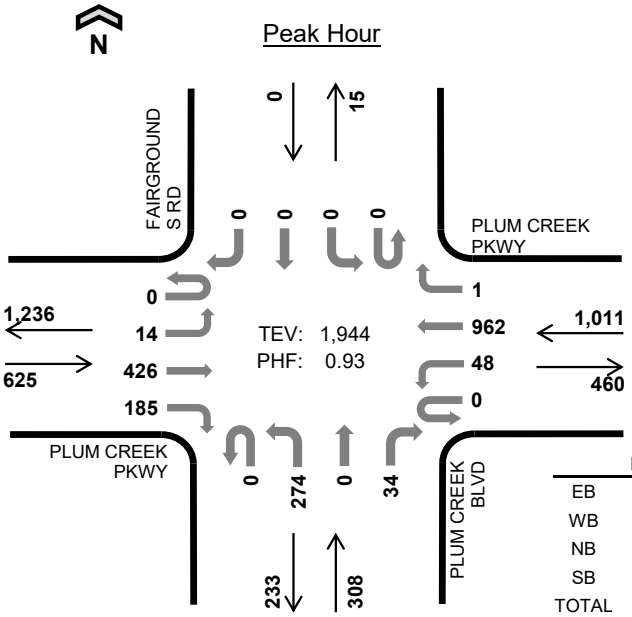
Two-Hour Count Summaries - Bikes

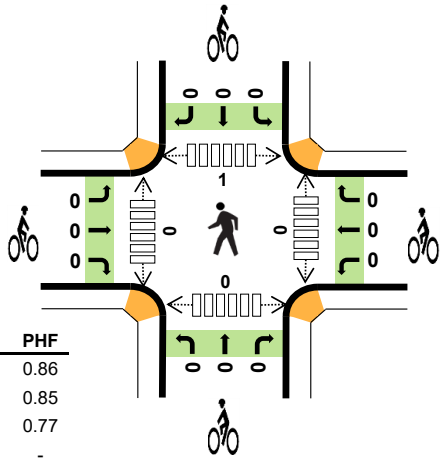
Interval Start	PLUM CREEK PKWY Eastbound			PLUM CREEK PKWY Westbound			S PERRY ST Northbound			S PERRY ST Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
11:30 AM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	0
11:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	2
12:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	1	0	0	0	1	0	0	2	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

PLUM CREEK BLVD
PLUM CREEK PKWY

Date: 05-06-2021
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:15 AM to 8:15 AM





	HV %:	PHF
EB	4.3%	0.86
WB	1.4%	0.85
NB	1.3%	0.77
SB	-	-
TOTAL	2.3%	0.93

Two-Hour Count Summaries

Interval Start	PLUM CREEK PKWY Eastbound				PLUM CREEK PKWY Westbound				PLUM CREEK BLVD Northbound				FAIRGROUNDS RD Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	47	26	0	4	210	1	0	47	0	4	0	0	0	0	339	0
7:15 AM	**0**	**0**	**77**	**48**	**0**	**24**	**271**	**0**	**0**	**89**	**0**	**11**	**0**	**0**	**0**	**0**	**520**	0
7:30 AM	**0**	**3**	**84**	**52**	**0**	**14**	**284**	**0**	**0**	**74**	**0**	**7**	**0**	**0**	**0**	**0**	**518**	0
7:45 AM	**0**	**5**	**133**	**42**	**0**	**3**	**219**	**1**	**0**	**54**	**0**	**5**	**0**	**0**	**0**	**0**	**462**	1,839
8:00 AM	**0**	**6**	**132**	**43**	**0**	**7**	**188**	**0**	**0**	**57**	**0**	**11**	**0**	**0**	**0**	**0**	**444**	**1,944**
8:15 AM	1	4	88	31	0	8	173	1	0	50	0	14	0	1	0	2	373	1,797
8:30 AM	0	4	101	44	0	6	166	2	0	51	0	7	0	0	0	2	383	1,662
8:45 AM	0	3	107	25	0	4	166	0	0	52	0	8	0	1	0	1	367	1,567
Count Total	1	25	769	311	0	70	1,677	5	0	474	0	67	0	2	0	5	3,406	0
Peak Hour All	**0**	**14**	**426**	**185**	**0**	**48**	**962**	**1**	**0**	**274**	**0**	**34**	**0**	**0**	**0**	**0**	**1,944**	**0**
Peak Hour HV	**0**	**0**	**22**	**5**	**0**	**1**	**13**	**0**	**0**	**3**	**0**	**1**	**0**	**0**	**0**	**0**	**45**	**0**
Peak Hour HV%	**-**	**0%**	**5%**	**3%**	**-**	**2%**	**1%**	**0%**	**-**	**1%**	**-**	**3%**	**-**	**-**	**-**	**-**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
7:00 AM	2	2	0	0	*4*	0	0	0	0	*0*	0	0	0	1	*1*
7:15 AM	**8**	**4**	**0**	**0**	***12***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**1**	**0**	***1***
7:30 AM	**3**	**3**	**2**	**0**	***8***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
7:45 AM	**6**	**4**	**0**	**0**	***10***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
8:00 AM	**10**	**3**	**2**	**0**	***15***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
8:15 AM	4	4	2	0	*10*	0	0	0	1	*1*	0	0	0	0	*0*
8:30 AM	3	3	0	1	*7*	0	0	0	0	*0*	0	0	1	0	*1*
8:45 AM	6	5	0	0	*11*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	42	28	6	1	*77*	0	0	0	1	*1*	0	0	2	1	*3*
Peak Hour	**27**	**14**	**4**	**0**	***45***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**1**	**0**	***1***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	PLUM CREEK PKWY Eastbound				PLUM CREEK PKWY Westbound				PLUM CREEK BLVD Northbound				FAIRGROUNDS RD Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	4	0
7:15 AM	**0**	**0**	**6**	**2**	**0**	**1**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**12**	0
7:30 AM	**0**	**0**	**3**	**0**	**0**	**0**	**3**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**8**	0
7:45 AM	**0**	**0**	**5**	**1**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**10**	34
8:00 AM	**0**	**0**	**8**	**2**	**0**	**0**	**3**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**15**	**45**
8:15 AM	0	0	3	1	0	1	3	0	0	0	0	2	0	0	0	0	10	43
8:30 AM	0	1	2	0	0	0	3	0	0	0	0	0	0	0	0	1	7	42
8:45 AM	0	0	4	2	0	0	5	0	0	0	0	0	0	0	0	0	11	43
Count Total	0	1	33	8	0	2	26	0	0	3	0	3	0	0	0	1	77	0
Peak Hour	**0**	**0**	**22**	**5**	**0**	**1**	**13**	**0**	**0**	**3**	**0**	**1**	**0**	**0**	**0**	**0**	**45**	**0**

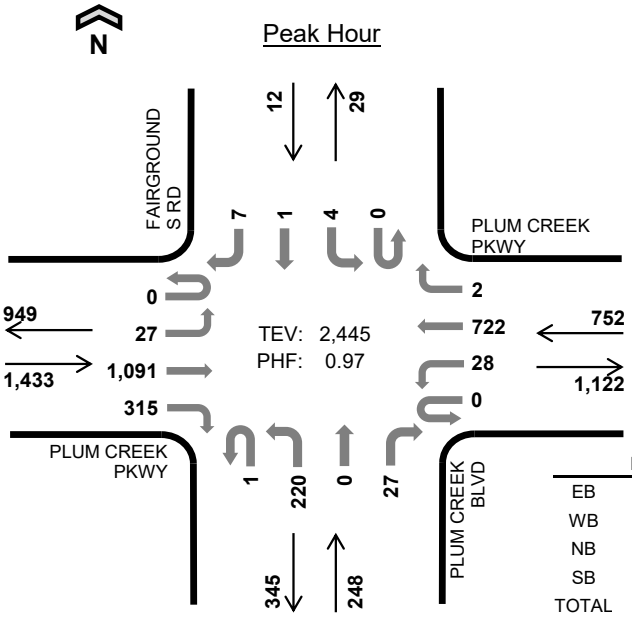
Two-Hour Count Summaries - Bikes

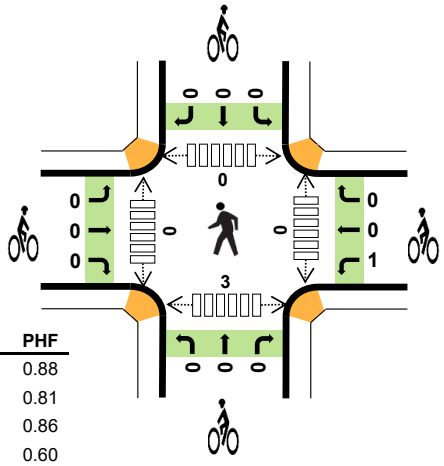
Interval Start	PLUM CREEK PKWY Eastbound			PLUM CREEK PKWY Westbound			PLUM CREEK BLVD Northbound			FAIRGROUNDS RD Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	1	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Count Total	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

PLUM CREEK BLVD
PLUM CREEK PKWY

Date: 05-06-2021
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM





	HV %:	PHF
EB	0.3%	0.88
WB	2.1%	0.81
NB	1.2%	0.86
SB	0.0%	0.60
TOTAL	1.0%	0.97

Two-Hour Count Summaries

Interval Start		PLUM CREEK PKWY Eastbound				PLUM CREEK PKWY Westbound				PLUM CREEK BLVD Northbound				FAIRGROUNDS RD Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	4	236	69	0	8	164	1	0	49	0	9	0	0	0	4	544	0
4:15 PM		0	1	256	65	0	9	202	0	0	55	0	6	0	0	0	4	598	0
4:30 PM		**0**	**2**	**249**	**64**	**0**	**12**	**221**	**0**	**1**	**60**	**0**	**11**	**0**	**1**	**0**	**2**	**623**	0
4:45 PM		**0**	**14**	**314**	**77**	**0**	**2**	**164**	**0**	**0**	**50**	**0**	**7**	**0**	**0**	**0**	**1**	**629**	2,394
5:00 PM		**0**	**5**	**246**	**90**	**0**	**6**	**166**	**2**	**0**	**56**	**0**	**6**	**0**	**3**	**0**	**2**	**582**	2,432
5:15 PM		**0**	**6**	**282**	**84**	**0**	**8**	**171**	**0**	**0**	**54**	**0**	**3**	**0**	**0**	**1**	**2**	**611**	**2,445**
5:30 PM		1	8	287	71	0	4	175	3	0	51	0	10	0	0	0	3	613	2,435
5:45 PM		0	5	276	54	0	8	172	0	0	37	0	12	0	0	0	2	566	2,372
Count Total		1	45	2,146	574	0	57	1,435	6	1	412	0	64	0	4	1	20	4,766	0
Peak Hour	**All**	**0**	**27**	**1,091**	**315**	**0**	**28**	**722**	**2**	**1**	**220**	**0**	**27**	**0**	**4**	**1**	**7**	**2,445**	**0**
	HV	**0**	**0**	**4**	**1**	**0**	**1**	**15**	**0**	**0**	**1**	**0**	**2**	**0**	**0**	**0**	**0**	**24**	**0**
	HV%	**-**	**0%**	**0%**	**0%**	**-**	**4%**	**2%**	**0%**	**0%**	**0%**	**-**	**7%**	**-**	**0%**	**0%**	**0%**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
4:00 PM	7	6	0	0	*13*	0	0	0	0	*0*	0	0	0	0	*0*
4:15 PM	1	9	1	0	*11*	0	0	0	0	*0*	0	0	3	1	*4*
4:30 PM	**3**	**3**	**2**	**0**	***8***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
4:45 PM	**2**	**6**	**1**	**0**	***9***	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**0**	**1**	***1***
5:00 PM	**0**	**2**	**0**	**0**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**1**	*1*
5:15 PM	**0**	**5**	**0**	**0**	***5***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**1**	***1***
5:30 PM	2	5	0	0	*7*	0	0	0	0	*0*	0	0	0	1	*1*
5:45 PM	2	2	0	0	*4*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	17	38	4	0	*59*	0	1	0	0	*1*	0	0	3	5	*8*
Peak Hour	**5**	**16**	**3**	**0**	***24***	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**0**	**3**	***3***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	PLUM CREEK PKWY Eastbound				PLUM CREEK PKWY Westbound				PLUM CREEK BLVD Northbound				FAIRGROUNDS RD Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	7	0	0	0	6	0	0	0	0	0	0	0	0	0	13	0
4:15 PM	0	0	1	0	0	1	8	0	0	1	0	0	0	0	0	0	11	0
4:30 PM	**0**	**0**	**3**	**0**	**0**	**1**	**2**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**8**	0
4:45 PM	**0**	**0**	**1**	**1**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**9**	41
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	30
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**24**
5:30 PM	0	0	2	0	0	0	5	0	0	0	0	0	0	0	0	0	7	23
5:45 PM	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	4	18
Count Total	0	0	16	1	0	2	36	0	0	2	0	2	0	0	0	0	59	0
Peak Hour	**0**	**0**	**4**	**1**	**0**	**1**	**15**	**0**	**0**	**1**	**0**	**2**	**0**	**0**	**0**	**0**	**24**	**0**

Two-Hour Count Summaries - Bikes

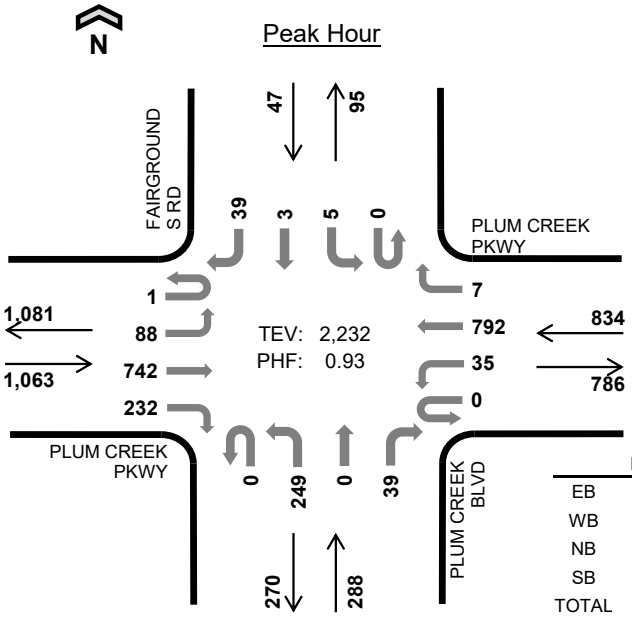
Interval Start	PLUM CREEK PKWY Eastbound			PLUM CREEK PKWY Westbound			PLUM CREEK BLVD Northbound			FAIRGROUNDS RD Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	1
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	1	0	0	0	0	0	0	0	0	1	0
Peak Hour	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

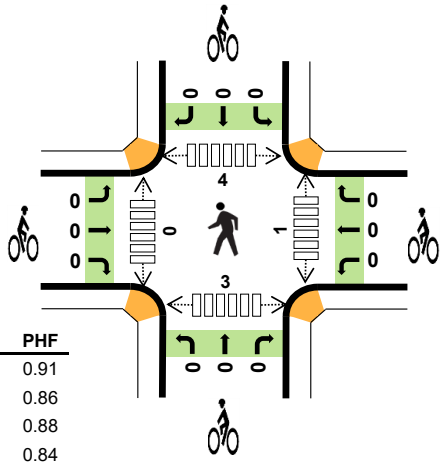
Project Manager: (415) 310-6469 project.manager.ca@idaxdata.com

PLUM CREEK BLVD
PLUM CREEK PKWY

Date: 05-08-2021
Count Period: 11:00 AM to 1:00 PM
Peak Hour: 12:00 PM to 1:00 PM



	HV %:	PHF
EB	0.8%	0.91
WB	1.2%	0.86
NB	0.3%	0.88
SB	0.0%	0.84
TOTAL	0.9%	0.93



Two-Hour Count Summaries

Interval Start	PLUM CREEK PKWY Eastbound				PLUM CREEK PKWY Westbound				PLUM CREEK BLVD Northbound				FAIRGROUNDS RD Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM	0	20	180	49	0	5	244	0	0	73	0	11	0	2	1	16	601	0
11:15 AM	0	19	192	64	0	7	176	0	0	56	0	14	0	1	1	7	537	0
11:30 AM	1	17	183	52	0	15	196	2	0	53	0	10	0	2	0	1	532	0
11:45 AM	0	20	173	60	0	7	192	2	0	63	0	11	0	2	1	3	534	2,204
12:00 PM	**0**	**17**	**171**	**61**	**0**	**5**	**199**	**1**	**0**	**69**	**0**	**8**	**0**	**0**	**0**	**9**	**540**	2,143
12:15 PM	**0**	**17**	**173**	**52**	**0**	**8**	**183**	**1**	**0**	**64**	**0**	**18**	**0**	**1**	**2**	**9**	**528**	2,134
12:30 PM	**1**	**25**	**191**	**64**	**0**	**15**	**225**	**3**	**0**	**55**	**0**	**8**	**0**	**0**	**1**	**11**	**599**	2,201
12:45 PM	**0**	**29**	**207**	**55**	**0**	**7**	**185**	**2**	**0**	**61**	**0**	**5**	**0**	**4**	**0**	**10**	**565**	**2,232**
Count Total	2	164	1,470	457	0	69	1,600	11	0	494	0	85	0	12	6	66	4,436	0
Peak Hour All	**1**	**88**	**742**	**232**	**0**	**35**	**792**	**7**	**0**	**249**	**0**	**39**	**0**	**5**	**3**	**39**	**2,232**	**0**
Peak Hour HV	**0**	**0**	**8**	**0**	**0**	**1**	**9**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**19**	**0**
Peak Hour HV%	**0%**	**0%**	**1%**	**0%**	**-**	**3%**	**1%**	**0%**	**-**	**0%**	**-**	**0%**	**-**	**0%**	**0%**	**0%**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
11:00 AM	4	4	0	0	*8*	0	0	0	0	*0*	0	0	1	1	*2*
11:15 AM	2	3	0	0	*5*	0	0	0	0	*0*	0	0	2	1	*3*
11:30 AM	0	3	0	0	*3*	0	0	1	0	*1*	0	0	0	1	*1*
11:45 AM	2	2	1	0	*5*	0	0	0	0	*0*	3	1	0	0	*4*
12:00 PM	**4**	**6**	**1**	**0**	***11***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**0**	**1**	*2*
12:15 PM	**2**	**1**	**0**	**0**	***3***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
12:30 PM	**1**	**1**	**0**	**0**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**2**	**0**	*2*
12:45 PM	**1**	**2**	**0**	**0**	***3***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**2**	**2**	***4***
Count Total	16	22	2	0	*40*	0	0	1	0	*1*	4	1	7	6	*18*
Peak Hour	**8**	**10**	**1**	**0**	***19***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**4**	**3**	***8***

Project Manager: (415) 310-6469 project.manager.ca@idaxdata.com

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	PLUM CREEK PKWY Eastbound				PLUM CREEK PKWY Westbound				PLUM CREEK BLVD Northbound				FAIRGROUNDS RD Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	8	0
11:15 AM	0	0	2	0	0	0	3	0	0	0	0	0	0	0	0	0	5	0
11:30 AM	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	3	0
11:45 AM	0	0	2	0	0	0	2	0	0	1	0	0	0	0	0	0	5	21
12:00 PM	**0**	**0**	**4**	**0**	**0**	**1**	**5**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**11**	24
12:15 PM	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	22
12:30 PM	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	21
12:45 PM	**0**	**0**	**1**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**19**
Count Total	0	0	16	0	0	1	21	0	0	2	0	0	0	0	0	0	40	0
Peak Hour	**0**	**0**	**8**	**0**	**0**	**1**	**9**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**19**	**0**

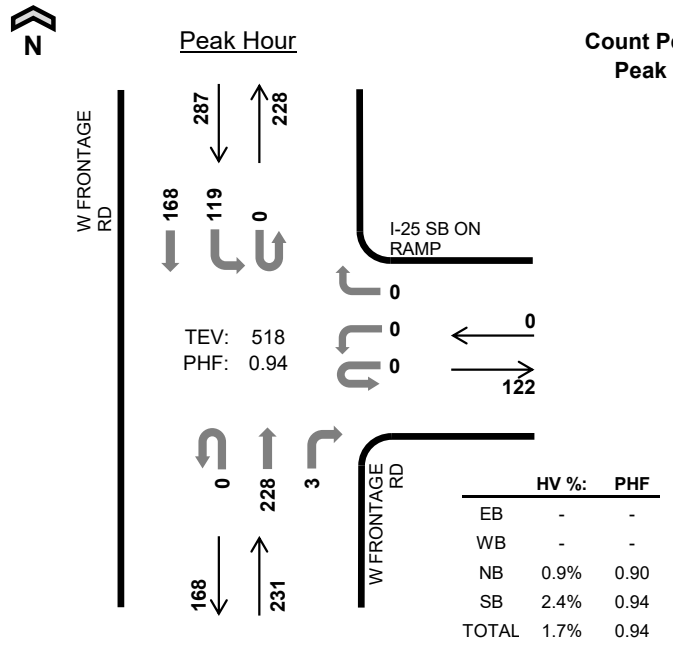
Two-Hour Count Summaries - Bikes

Interval Start	PLUM CREEK PKWY Eastbound			PLUM CREEK PKWY Westbound			PLUM CREEK BLVD Northbound			FAIRGROUNDS RD Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	1	0	0	0	0	0	1	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
12:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
12:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
12:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
12:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Count Total	0	0	0	0	0	0	1	0	0	0	0	0	1	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

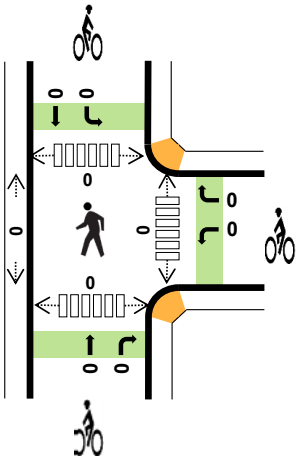
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

W FRONTAGE RD
I-25 SB ON RAMP

Peak Hour



Date: 04-29-2021
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM



	HV %:	PHF
EB	-	-
WB	-	-
NB	0.9%	0.90
SB	2.4%	0.94
TOTAL	1.7%	0.94

Two-Hour Count Summaries

Interval Start		0				I-25 SB ON RAMP				W FRONTAGE RD				W FRONTAGE RD				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	0	0	0	0	0	0	0	0	0	58	0	0	24	22	0	104	0
7:15 AM		0	0	0	0	0	0	0	0	0	0	48	0	0	42	29	0	119	0
7:30 AM		0	0	0	0	0	0	0	0	0	0	48	0	0	23	41	0	112	0
7:45 AM		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**64**	**0**	**0**	**28**	**42**	**0**	**134**	469
8:00 AM		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**49**	**0**	**0**	**27**	**38**	**0**	**114**	479
8:15 AM		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**56**	**0**	**0**	**36**	**40**	**0**	**132**	492
8:30 AM		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**59**	**3**	**0**	**28**	**48**	**0**	**138**	**518**
8:45 AM		0	0	0	0	0	0	0	0	0	0	52	0	0	17	50	0	119	503
Count Total		0	0	0	0	0	0	0	0	0	0	434	3	0	225	310	0	972	0
Peak Hour	**All**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**228**	**3**	**0**	**119**	**168**	**0**	**518**	**0**
	HV	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**2**	**5**	**0**	**9**	**0**
	HV%	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1%**	**0%**	**-**	**2%**	**3%**	**-**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	0	0	2	*2*	0	0	0	0	*0*	0	0	0	0	*0*
7:15 AM	0	0	1	0	*1*	0	0	0	0	*0*	0	0	0	0	*0*
7:30 AM	0	0	1	4	*5*	0	0	0	0	*0*	0	0	0	0	*0*
7:45 AM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:00 AM	**0**	**0**	**0**	**2**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:15 AM	**0**	**0**	**0**	**3**	***3***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:30 AM	**0**	**0**	**2**	**2**	***4***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
8:45 AM	0	0	0	4	*4*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	0	0	4	17	*21*	0	0	0	0	*0*	0	0	0	0	*0*
Peak Hr	**0**	**0**	**2**	**7**	***9***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	0				I-25 SB ON RAMP				W FRONTAGE RD				W FRONTAGE RD				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	2	2	0	5	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	8
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**2**	8
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**0**	**3**	10
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**1**	**1**	**0**	**4**	**9**
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	13
Count Total	0	0	0	0	0	0	0	0	0	0	4	0	0	5	12	0	21	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**2**	**5**	**0**	**9**	**0**

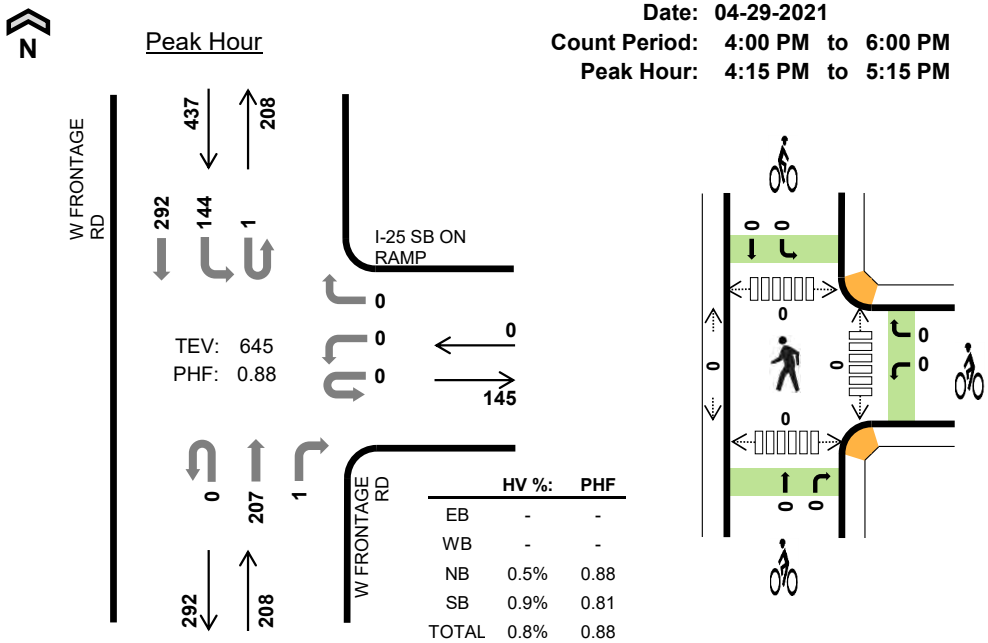
Two-Hour Count Summaries - Bikes

Interval Start	0			I-25 SB ON RAMP			W FRONTAGE RD			W FRONTAGE RD			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

W FRONTAGE RD
I-25 SB ON RAMP

Date: 04-29-2021
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:15 PM to 5:15 PM



Two-Hour Count Summaries

Interval Start		0 Eastbound				I-25 SB ON RAMP Westbound				W FRONTAGE RD Northbound				W FRONTAGE RD Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	0	0	0	0	0	0	0	0	0	36	0	0	27	74	0	137	0
4:15 PM		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**58**	**1**	**0**	**45**	**80**	**0**	**184**	0
4:30 PM		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**55**	**0**	**1**	**32**	**60**	**0**	**148**	0
4:45 PM		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**48**	**0**	**0**	**23**	**61**	**0**	**132**	601
5:00 PM		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**46**	**0**	**0**	**44**	**91**	**0**	**181**	**645**
5:15 PM		0	0	0	0	0	0	0	0	0	0	61	1	0	35	82	0	179	640
5:30 PM		0	0	0	0	0	0	0	0	0	0	44	0	0	20	47	0	111	603
5:45 PM		0	0	0	0	0	0	0	0	0	0	27	0	0	22	73	0	122	593
Count Total		0	0	0	0	0	0	0	0	0	0	375	2	1	248	568	0	1,194	0
Peak Hour	**All**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**207**	**1**	**1**	**144**	**292**	**0**	**645**	**0**
	HV	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**4**	**0**	**5**	**0**
	HV%	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**0%**	**0%**	**0%**	**0%**	**1%**	**-**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
4:15 PM	**0**	**0**	**0**	**2**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:30 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:45 PM	**0**	**0**	**1**	**1**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:00 PM	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
5:15 PM	0	0	0	1	*1*	0	0	0	0	*0*	0	0	0	0	*0*
5:30 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
5:45 PM	0	0	1	1	*2*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	0	0	2	6	*8*	0	0	0	0	*0*	0	0	0	0	*0*
Peak Hr	**0**	**0**	**1**	**4**	***5***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	0				I-25 SB ON RAMP				W FRONTAGE RD				W FRONTAGE RD				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**2**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**2**	4
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**5**
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	4
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
5:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2	4
Count Total	0	0	0	0	0	0	0	0	0	0	2	0	0	2	4	0	8	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**4**	**0**	**5**	**0**

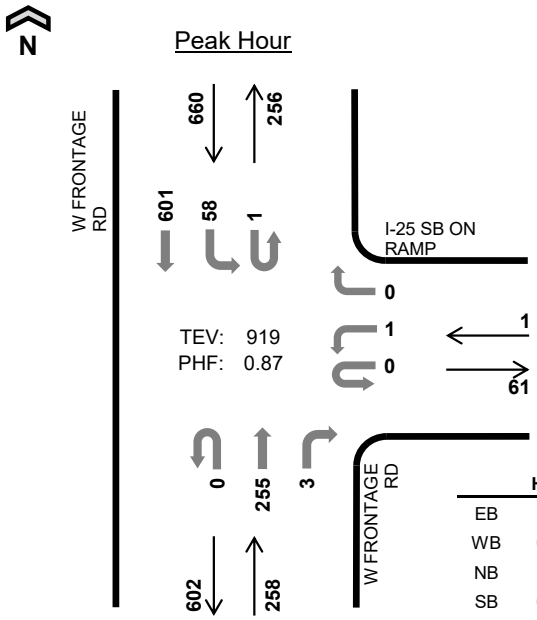
Two-Hour Count Summaries - Bikes

Interval Start	0			I-25 SB ON RAMP			W FRONTAGE RD			W FRONTAGE RD			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

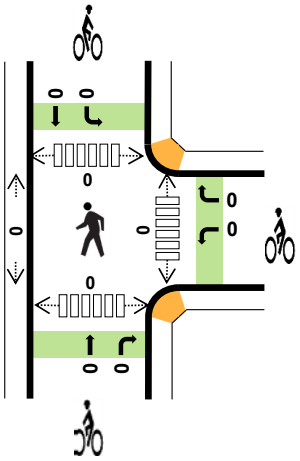
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

W FRONTAGE RD
I-25 SB ON RAMP

Date: 05-01-2021
Count Period: 11:00 AM to 1:00 PM
Peak Hour: 11:00 AM to 12:00 PM



	HV %:	PHF
EB	-	-
WB	0.0%	0.25
NB	1.2%	0.87
SB	0.8%	0.82
TOTAL	0.9%	0.87



Two-Hour Count Summaries

Interval Start		0				I-25 SB ON RAMP				W FRONTAGE RD				W FRONTAGE RD				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**61**	**0**	**0**	**20**	**182**	**0**	**263**	0
11:15 AM		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**66**	**2**	**0**	**12**	**150**	**0**	**230**	0
11:30 AM		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**73**	**1**	**0**	**16**	**114**	**0**	**204**	0
11:45 AM		**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**55**	**0**	**1**	**10**	**155**	**0**	**222**	**919**
12:00 PM		0	0	0	0	0	3	0	1	0	0	44	0	0	9	154	0	211	867
12:15 PM		0	0	0	0	0	0	0	0	0	0	55	0	0	9	174	0	238	875
12:30 PM		0	0	0	0	0	0	0	0	0	0	51	0	0	10	167	0	228	899
12:45 PM		0	0	0	0	0	4	0	0	0	0	50	1	0	4	159	0	218	895
Count Total		0	0	0	0	0	8	0	1	0	0	455	4	1	90	1,255	0	1,814	0
Peak Hour	**All**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**255**	**3**	**1**	**58**	**601**	**0**	**919**	**0**
	HV	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**5**	**0**	**8**	**0**
	HV%	**-**	**-**	**-**	**-**	**-**	**0%**	**-**	**-**	**-**	**-**	**1%**	**0%**	**0%**	**0%**	**1%**	**-**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
11:00 AM	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
11:15 AM	**0**	**0**	**2**	**2**	***4***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
11:30 AM	**0**	**0**	**1**	**1**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
11:45 AM	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
12:00 PM	0	0	1	4	*5*	0	0	0	0	*0*	0	0	0	0	*0*
12:15 PM	0	0	1	1	*2*	0	0	0	0	*0*	0	0	0	0	*0*
12:30 PM	0	0	2	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
12:45 PM	0	0	0	1	*1*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	0	0	7	11	*18*	0	0	0	0	*0*	0	0	0	0	*0*
Peak Hr	**0**	**0**	**3**	**5**	***8***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	0				I-25 SB ON RAMP				W FRONTAGE RD				W FRONTAGE RD				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	0
11:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**0**	**4**	0
11:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**2**	0
11:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**8**
12:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	4	0	5	12
12:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	10
12:30 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	10
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	10
Count Total	0	0	0	0	0	0	0	0	0	0	7	0	0	1	10	0	18	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**5**	**0**	**8**	**0**

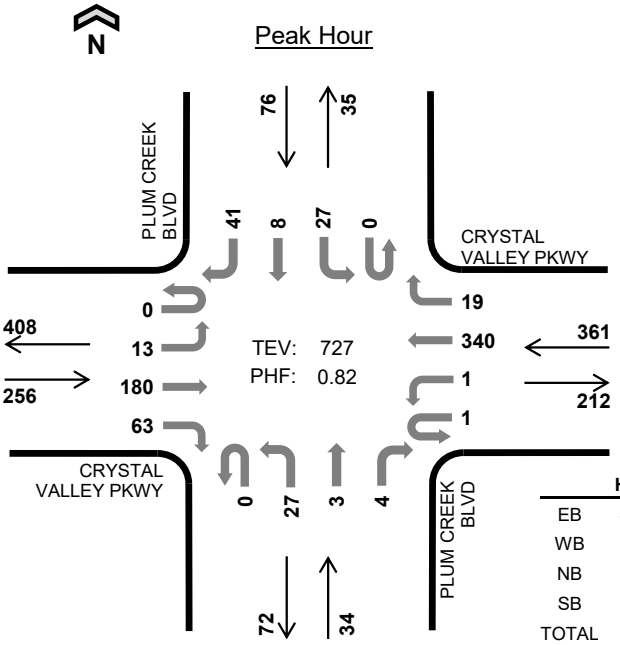
Two-Hour Count Summaries - Bikes

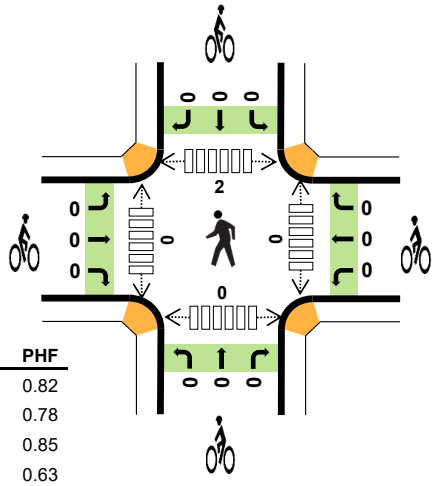
Interval Start	0			I-25 SB ON RAMP			W FRONTAGE RD			W FRONTAGE RD			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
11:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
11:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
11:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
11:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

PLUM CREEK BLVD
CRYSTAL VALLEY PKWY

Date: 04-29-2021
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:15 AM to 8:15 AM





	HV %:	PHF
EB	4.3%	0.82
WB	1.4%	0.78
NB	8.8%	0.85
SB	1.3%	0.63
TOTAL	2.8%	0.82

Two-Hour Count Summaries

Interval Start	CRYSTAL VALLEY PKWY Eastbound				CRYSTAL VALLEY PKWY Westbound				PLUM CREEK BLVD Northbound				PLUM CREEK BLVD Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	6	32	19	0	0	75	5	0	8	1	0	0	1	2	4	153	0
7:15 AM	**0**	**0**	**37**	**15**	**0**	**0**	**87**	**6**	**0**	**7**	**2**	**1**	**0**	**6**	**0**	**7**	**168**	0
7:30 AM	**0**	**4**	**36**	**17**	**0**	**0**	**88**	**5**	**0**	**9**	**0**	**0**	**0**	**5**	**0**	**11**	**175**	0
7:45 AM	**0**	**4**	**51**	**14**	**0**	**0**	**114**	**2**	**0**	**5**	**0**	**1**	**0**	**10**	**1**	**19**	**221**	717
8:00 AM	**0**	**5**	**56**	**17**	**1**	**1**	**51**	**6**	**0**	**6**	**1**	**2**	**0**	**6**	**7**	**4**	**163**	**727**
8:15 AM	1	6	43	8	0	3	61	3	0	8	1	0	0	1	0	6	141	700
8:30 AM	1	5	42	11	0	0	49	5	0	3	1	0	0	3	2	8	130	655
8:45 AM	1	4	50	10	0	0	49	3	0	10	1	1	0	1	1	8	139	573
Count Total	3	34	347	111	1	4	574	35	0	56	7	5	0	33	13	67	1,290	0
Peak Hour All	**0**	**13**	**180**	**63**	**1**	**1**	**340**	**19**	**0**	**27**	**3**	**4**	**0**	**27**	**8**	**41**	**727**	**0**
Peak Hour HV	**0**	**1**	**6**	**4**	**0**	**0**	**5**	**0**	**0**	**1**	**0**	**2**	**0**	**1**	**0**	**0**	**20**	**0**
Peak Hour HV%	**-**	**8%**	**3%**	**6%**	**0%**	**0%**	**1%**	**0%**	**-**	**4%**	**0%**	**50%**	**-**	**4%**	**0%**	**0%**	**3%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	4	1	1	0	*6*	0	0	0	0	*0*	0	0	0	0	*0*
7:15 AM	**1**	**0**	**1**	**0**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
7:30 AM	**4**	**3**	**1**	**0**	***8***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
7:45 AM	**0**	**1**	**1**	**0**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:00 AM	**6**	**1**	**0**	**1**	***8***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**2**	**0**	***2***
8:15 AM	10	3	0	0	*13*	0	0	0	0	*0*	0	0	0	0	*0*
8:30 AM	4	0	1	2	*7*	0	0	0	0	*0*	0	0	0	0	*0*
8:45 AM	7	0	2	1	*10*	0	0	0	0	*0*	0	0	1	0	*1*
Count Total	36	9	7	4	*56*	0	0	0	0	*0*	0	0	3	0	*3*
Peak Hour	**11**	**5**	**3**	**1**	***20***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**2**	**0**	***2***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	CRYSTAL VALLEY PKWY Eastbound				CRYSTAL VALLEY PKWY Westbound				PLUM CREEK BLVD Northbound				PLUM CREEK BLVD Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	1	2	1	0	0	1	0	0	1	0	0	0	0	0	0	6	0
7:15 AM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	0
7:30 AM	**0**	**0**	**2**	**2**	**0**	**0**	**3**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	18
8:00 AM	**0**	**1**	**3**	**2**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**8**	**20**
8:15 AM	1	1	7	1	0	1	2	0	0	0	0	0	0	0	0	0	13	31
8:30 AM	1	1	1	1	0	0	0	0	0	1	0	0	0	0	1	1	7	30
8:45 AM	0	0	3	4	0	0	0	0	0	2	0	0	0	0	1	0	10	38
Count Total	2	4	19	11	0	1	8	0	0	5	0	2	0	1	2	1	56	0
Peak Hour	**0**	**1**	**6**	**4**	**0**	**0**	**5**	**0**	**0**	**1**	**0**	**2**	**0**	**1**	**0**	**0**	**20**	**0**

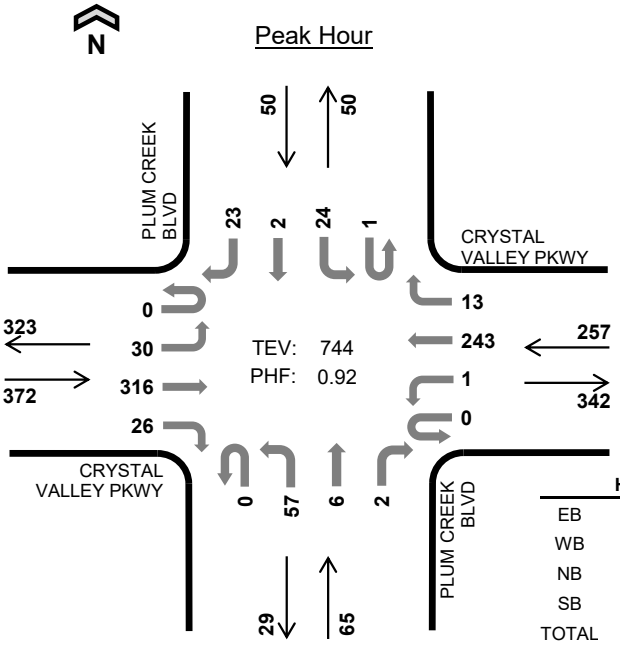
Two-Hour Count Summaries - Bikes

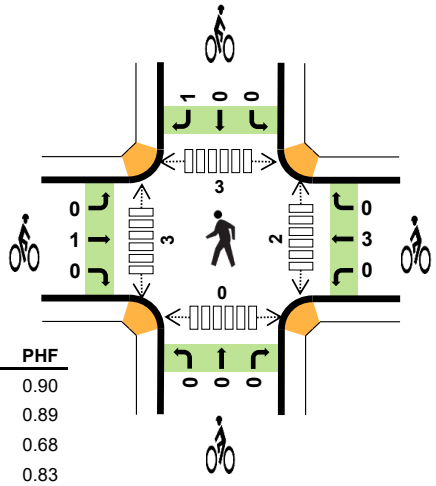
Interval Start	CRYSTAL VALLEY PKWY Eastbound			CRYSTAL VALLEY PKWY Westbound			PLUM CREEK BLVD Northbound			PLUM CREEK BLVD Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

PLUM CREEK BLVD
CRYSTAL VALLEY PKWY

Date: 04-29-2021
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM





	HV %:	PHF
EB	1.3%	0.90
WB	2.3%	0.89
NB	0.0%	0.68
SB	0.0%	0.83
TOTAL	1.5%	0.92

Two-Hour Count Summaries

Interval Start		CRYSTAL VALLEY PKWY Eastbound				CRYSTAL VALLEY PKWY Westbound				PLUM CREEK BLVD Northbound				PLUM CREEK BLVD Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	10	85	10	0	0	69	2	0	8	1	2	0	5	4	7	203	0
4:15 PM		0	9	81	9	0	0	61	4	0	15	2	0	0	8	3	5	197	0
4:30 PM		2	12	73	7	0	0	50	5	0	5	1	0	0	8	3	4	170	0
4:45 PM		**0**	**5**	**68**	**3**	**0**	**0**	**68**	**4**	**0**	**10**	**3**	**1**	**0**	**4**	**1**	**6**	**173**	743
5:00 PM		**0**	**3**	**89**	**11**	**0**	**0**	**58**	**3**	**0**	**23**	**1**	**0**	**0**	**8**	**0**	**6**	**202**	742
5:15 PM		**0**	**9**	**87**	**5**	**0**	**1**	**59**	**4**	**0**	**15**	**2**	**0**	**1**	**8**	**0**	**6**	**197**	742
5:30 PM		**0**	**13**	**72**	**7**	**0**	**0**	**58**	**2**	**0**	**9**	**0**	**1**	**0**	**4**	**1**	**5**	**172**	**744**
5:45 PM		1	8	62	7	0	1	68	3	0	5	0	1	0	4	1	1	162	733
Count Total		3	69	617	59	0	2	491	27	0	90	10	5	1	49	13	40	1,476	0
Peak Hour	**All**	**0**	**30**	**316**	**26**	**0**	**1**	**243**	**13**	**0**	**57**	**6**	**2**	**1**	**24**	**2**	**23**	**744**	**0**
	HV	**0**	**0**	**5**	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**11**	**0**
	HV%	**-**	**0%**	**2%**	**0%**	**-**	**0%**	**2%**	**0%**	**-**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	3	2	1	1	*7*	0	1	0	1	*2*	0	0	0	0	*0*
4:15 PM	2	2	1	0	*5*	0	1	0	0	*1*	1	0	0	0	*1*
4:30 PM	1	2	0	1	*4*	0	0	0	0	*0*	1	0	0	0	*1*
4:45 PM	**1**	**4**	**0**	**0**	***5***	**0**	**2**	**0**	**1**	***3***	**0**	**0**	**0**	**0**	*0*
5:00 PM	**2**	**0**	**0**	**0**	***2***	**1**	**0**	**0**	**0**	***1***	**1**	**0**	**0**	**0**	*1*
5:15 PM	**2**	**2**	**0**	**0**	*4*	**0**	**1**	**0**	**0**	*1*	**1**	**1**	**1**	**0**	*3*
5:30 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**2**	**2**	**0**	***4***
5:45 PM	0	1	0	0	*1*	0	0	0	1	*1*	0	2	0	0	*2*
Count Total	11	13	2	2	*28*	1	5	0	3	*9*	4	5	3	0	*12*
Peak Hour	**5**	**6**	**0**	**0**	***11***	**1**	**3**	**0**	**1**	***5***	**2**	**3**	**3**	**0**	***8***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	CRYSTAL VALLEY PKWY Eastbound				CRYSTAL VALLEY PKWY Westbound				PLUM CREEK BLVD Northbound				PLUM CREEK BLVD Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	1	2	0	0	0	2	0	0	1	0	0	0	0	0	1	7	0
4:15 PM	0	1	1	0	0	0	2	0	0	1	0	0	0	0	0	0	5	0
4:30 PM	0	0	1	0	0	0	2	0	0	0	0	0	0	1	0	0	4	0
4:45 PM	**0**	**0**	**1**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	21
5:00 PM	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	16
5:15 PM	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	15
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**11**
5:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	7
Count Total	0	2	9	0	0	0	13	0	0	2	0	0	0	1	0	1	28	0
Peak Hour	**0**	**0**	**5**	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**11**	**0**

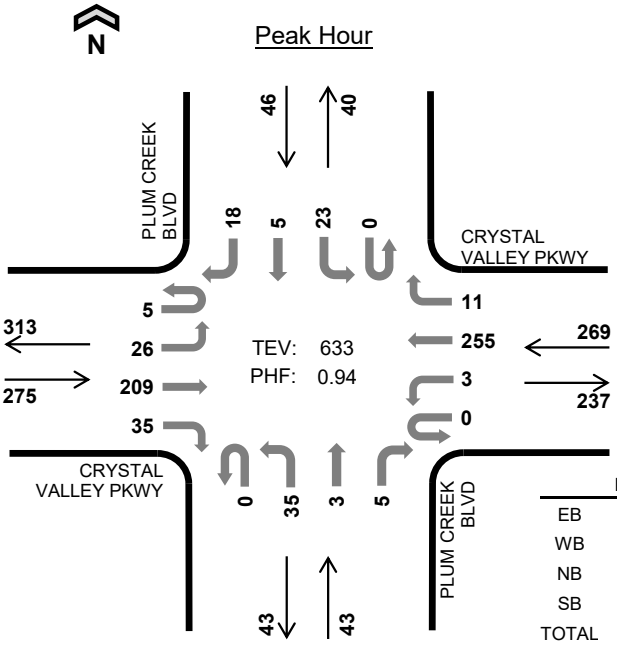
Two-Hour Count Summaries - Bikes

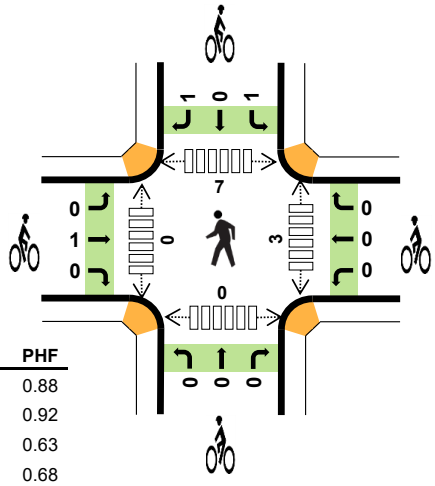
Interval Start	CRYSTAL VALLEY PKWY Eastbound			CRYSTAL VALLEY PKWY Westbound			PLUM CREEK BLVD Northbound			PLUM CREEK BLVD Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	1	0	0	0	0	0	0	1	2	0
4:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**3**	6
5:00 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	5
5:15 PM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	5
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	1	3
Count Total	0	1	0	0	5	0	0	0	0	0	0	3	9	0
Peak Hour	**0**	**1**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**5**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

PLUM CREEK BLVD
CRYSTAL VALLEY PKWY

Date: 05-01-2021
Count Period: 11:00 AM to 1:00 PM
Peak Hour: 11:45 AM to 12:45 PM





	HV %:	PHF
EB	0.7%	0.88
WB	2.2%	0.92
NB	7.0%	0.63
SB	2.2%	0.68
TOTAL	1.9%	0.94

Two-Hour Count Summaries

Interval Start		CRYSTAL VALLEY PKWY Eastbound				CRYSTAL VALLEY PKWY Westbound				PLUM CREEK BLVD Northbound				PLUM CREEK BLVD Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM		2	3	55	3	0	0	69	2	0	7	0	1	0	6	2	11	161	0
11:15 AM		4	9	37	7	0	0	70	5	0	5	1	0	1	4	2	5	150	0
11:30 AM		1	4	54	5	0	0	51	5	0	4	2	0	0	8	2	2	138	0
11:45 AM		**0**	**7**	**49**	**5**	**0**	**0**	**57**	**6**	**0**	**4**	**0**	**1**	**0**	**6**	**3**	**8**	**146**	595
12:00 PM		**2**	**11**	**61**	**4**	**0**	**0**	**58**	**3**	**0**	**9**	**2**	**1**	**0**	**5**	**1**	**6**	**163**	597
12:15 PM		**3**	**6**	**50**	**14**	**0**	**3**	**68**	**1**	**0**	**15**	**0**	**2**	**0**	**4**	**0**	**3**	**169**	616
12:30 PM		**0**	**2**	**49**	**12**	**0**	**0**	**72**	**1**	**0**	**7**	**1**	**1**	**0**	**8**	**1**	**1**	**155**	**633**
12:45 PM		2	6	57	5	0	0	54	4	0	4	1	0	0	4	0	3	140	627
Count Total		14	48	412	55	0	3	499	27	0	55	7	6	1	45	11	39	1,222	0
Peak Hour	**All**	**5**	**26**	**209**	**35**	**0**	**3**	**255**	**11**	**0**	**35**	**3**	**5**	**0**	**23**	**5**	**18**	**633**	**0**
	HV	**0**	**0**	**2**	**0**	**0**	**0**	**5**	**1**	**0**	**3**	**0**	**0**	**0**	**1**	**0**	**0**	**12**	**0**
	HV%	**0%**	**0%**	**1%**	**0%**	**-**	**0%**	**2%**	**9%**	**-**	**9%**	**0%**	**0%**	**-**	**4%**	**0%**	**0%**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
11:00 AM	1	1	1	0	*3*	0	1	0	1	*2*	0	0	2	0	*2*
11:15 AM	2	0	0	0	*2*	2	0	2	1	*5*	0	0	0	0	*0*
11:30 AM	2	2	0	0	*4*	0	0	0	1	*1*	0	0	0	0	*0*
11:45 AM	**1**	**2**	**0**	**1**	***4***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
12:00 PM	**0**	**3**	**2**	**0**	***5***	**1**	**0**	**0**	**0**	***1***	**2**	**0**	**2**	**0**	*4*
12:15 PM	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**0**	**2**	***2***	**1**	**0**	**5**	**0**	*6*
12:30 PM	**1**	**1**	**0**	**0**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
12:45 PM	0	0	0	0	*0*	0	1	0	0	*1*	0	0	0	1	*1*
Count Total	7	9	4	1	*21*	3	2	2	5	*12*	3	0	9	1	*13*
Peak Hour	**2**	**6**	**3**	**1**	***12***	**1**	**0**	**0**	**2**	***3***	**3**	**0**	**7**	**0**	***10***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	CRYSTAL VALLEY PKWY Eastbound				CRYSTAL VALLEY PKWY Westbound				PLUM CREEK BLVD Northbound				PLUM CREEK BLVD Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM	0	0	1	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0
11:15 AM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0
11:30 AM	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	4	0
11:45 AM	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**4**	13
12:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	15
12:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	14
12:30 PM	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**12**
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
Count Total	0	0	5	2	0	0	8	1	0	4	0	0	0	1	0	0	21	0
Peak Hour	**0**	**0**	**2**	**0**	**0**	**0**	**5**	**1**	**0**	**3**	**0**	**0**	**0**	**1**	**0**	**0**	**12**	**0**

Two-Hour Count Summaries - Bikes

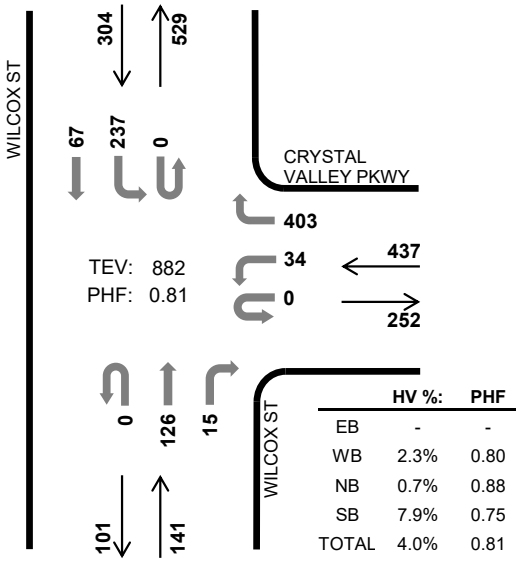
Interval Start	CRYSTAL VALLEY PKWY Eastbound			CRYSTAL VALLEY PKWY Westbound			PLUM CREEK BLVD Northbound			PLUM CREEK BLVD Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
11:00 AM	0	0	0	0	1	0	0	0	0	0	0	1	2	0
11:15 AM	1	1	0	0	0	0	0	1	1	0	0	1	5	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	1	0
11:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	8
12:00 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	7
12:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**2**	4
12:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**
12:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	4
Count Total	1	2	0	0	2	0	0	1	1	1	0	4	12	0
Peak Hour	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**3**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

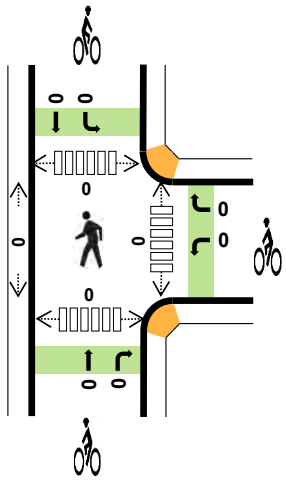
WILCOX ST
CRYSTAL VALLEY PKWY

Peak Hour

Date: 04-29-2021
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:00 AM to 8:00 AM



	HV %:	PHF
EB	-	-
WB	2.3%	0.80
NB	0.7%	0.88
SB	7.9%	0.75
TOTAL	4.0%	0.81



Two-Hour Count Summaries

Interval Start		0 Eastbound				CRYSTAL VALLEY PKWY Westbound				WILCOX ST Northbound				WILCOX ST Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		**0**	**0**	**0**	**0**	**0**	**8**	**0**	**82**	**0**	**0**	**35**	**5**	**0**	**56**	**13**	**0**	**199**	0
7:15 AM		**0**	**0**	**0**	**0**	**0**	**13**	**0**	**91**	**0**	**0**	**33**	**1**	**0**	**57**	**9**	**0**	**204**	0
7:30 AM		**0**	**0**	**0**	**0**	**0**	**9**	**0**	**97**	**0**	**0**	**28**	**5**	**0**	**51**	**16**	**0**	**206**	0
7:45 AM		**0**	**0**	**0**	**0**	**0**	**4**	**0**	**133**	**0**	**0**	**30**	**4**	**0**	**73**	**29**	**0**	**273**	**882**
8:00 AM		0	0	0	0	0	6	0	62	0	0	19	7	0	57	18	0	169	852
8:15 AM		0	0	0	0	0	8	0	62	0	0	20	3	0	63	18	0	174	822
8:30 AM		0	0	0	0	0	7	0	50	0	0	22	5	0	55	19	0	158	774
8:45 AM		0	0	0	0	0	9	0	57	0	0	24	9	0	54	16	0	169	670
Count Total		0	0	0	0	0	64	0	634	0	0	211	39	0	466	138	0	1,552	0
Peak Hour	**All**	**0**	**0**	**0**	**0**	**0**	**34**	**0**	**403**	**0**	**0**	**126**	**15**	**0**	**237**	**67**	**0**	**882**	**0**
	HV	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**9**	**0**	**0**	**1**	**0**	**0**	**11**	**13**	**0**	**35**	**0**
	HV%	**-**	**-**	**-**	**-**	**-**	**3%**	**-**	**2%**	**-**	**-**	**1%**	**0%**	**-**	**5%**	**19%**	**-**	**4%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	**0**	**1**	**0**	**7**	***8***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
7:15 AM	**0**	**1**	**1**	**8**	***10***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
7:30 AM	**0**	**4**	**0**	**4**	***8***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
7:45 AM	**0**	**4**	**0**	**5**	***9***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
8:00 AM	0	1	0	10	*11*	0	0	0	0	*0*	0	0	0	0	*0*
8:15 AM	0	3	2	14	*19*	0	0	0	0	*0*	0	0	0	0	*0*
8:30 AM	0	4	1	9	*14*	0	0	0	0	*0*	0	0	0	0	*0*
8:45 AM	0	2	2	7	*11*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	0	20	6	64	*90*	0	0	0	0	*0*	0	0	0	0	*0*
Peak Hr	**0**	**10**	**1**	**24**	***35***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	0				CRYSTAL VALLEY PKWY				WILCOX ST				WILCOX ST				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**3**	**4**	**0**	**8**	0
7:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**3**	**5**	**0**	**10**	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**3**	**1**	**0**	**8**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**2**	**3**	**0**	**9**	**35**
8:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	6	4	0	11	38
8:15 AM	0	0	0	0	0	0	0	3	0	0	1	1	0	10	4	0	19	47
8:30 AM	0	0	0	0	0	0	0	4	0	0	1	0	0	5	4	0	14	53
8:45 AM	0	0	0	0	0	0	0	2	0	0	2	0	0	5	2	0	11	55
Count Total	0	0	0	0	0	1	0	19	0	0	5	1	0	37	27	0	90	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**9**	**0**	**0**	**1**	**0**	**0**	**11**	**13**	**0**	**35**	**0**

Two-Hour Count Summaries - Bikes

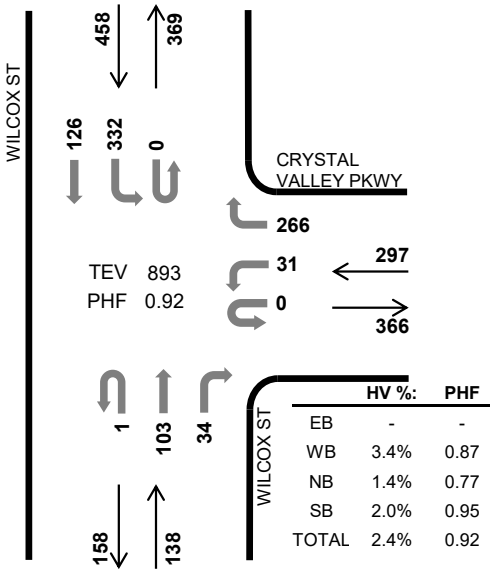
Interval Start	0			CRYSTAL VALLEY PKWY			WILCOX ST			WILCOX ST			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

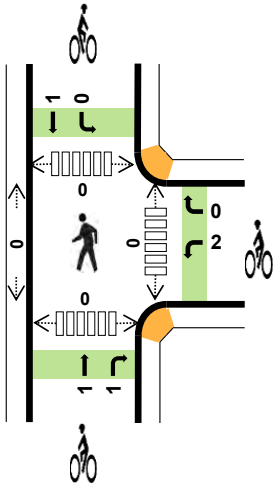
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

WILCOX ST
CRYSTAL VALLEY PKWY

Peak Hour

Date: 04-29-2021
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:15 PM to 5:15 PM





Two-Hour Count Summaries

Interval Start	0 Eastbound				CRYSTAL VALLEY PKWY Westbound				WILCOX ST Northbound				WILCOX ST Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	6	0	82	1	0	25	10	0	87	23	0	234	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**8**	**0**	**66**	**1**	**0**	**17**	**5**	**0**	**92**	**29**	**0**	**218**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**8**	**0**	**49**	**0**	**0**	**35**	**10**	**0**	**80**	**29**	**0**	**211**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**6**	**0**	**75**	**0**	**0**	**19**	**7**	**0**	**83**	**32**	**0**	**222**	885
5:00 PM	**0**	**0**	**0**	**0**	**0**	**9**	**0**	**76**	**0**	**0**	**32**	**12**	**0**	**77**	**36**	**0**	**242**	**893**
5:15 PM	0	0	0	0	0	5	0	74	0	0	20	12	0	74	28	0	213	888
5:30 PM	0	0	0	0	0	8	0	61	0	0	28	20	0	71	23	0	211	888
5:45 PM	0	0	0	0	0	8	0	70	0	0	11	4	0	69	29	0	191	857
Count Total	0	0	0	0	0	58	0	553	2	0	187	80	0	633	229	0	1,742	0
Peak Hour All	**0**	**0**	**0**	**0**	**0**	**31**	**0**	**266**	**1**	**0**	**103**	**34**	**0**	**332**	**126**	**0**	**893**	**0**
Peak Hour HV	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**9**	**0**	**0**	**1**	**1**	**0**	**8**	**1**	**0**	**21**	**0**
Peak Hour HV%	**-**	**-**	**-**	**-**	**-**	**3%**	**-**	**3%**	**0%**	**-**	**1%**	**3%**	**-**	**2%**	**1%**	**-**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	4	1	1	*6*	0	1	0	0	*1*	0	0	0	0	*0*
4:15 PM	**0**	**4**	**1**	**2**	***7***	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	*0*
4:30 PM	**0**	**3**	**1**	**2**	***6***	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**0**	*0*
4:45 PM	**0**	**3**	**0**	**1**	***4***	**0**	**1**	**1**	**0**	***2***	**0**	**0**	**0**	**0**	*0*
5:00 PM	**0**	**0**	**0**	**4**	***4***	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**0**	**0**	***0***
5:15 PM	0	2	2	1	*5*	0	0	0	0	*0*	0	0	0	0	*0*
5:30 PM	0	2	0	0	*2*	0	0	1	0	*1*	0	0	0	0	*0*
5:45 PM	0	0	1	1	*2*	0	1	1	0	*2*	0	0	0	0	*0*
Count Total	0	18	6	12	*36*	0	4	4	1	*9*	0	0	0	0	*0*
Peak Hr	**0**	**10**	**2**	**9**	***21***	**0**	**2**	**2**	**1**	***5***	**0**	**0**	**0**	**0**	***0***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	0				CRYSTAL VALLEY PKWY				WILCOX ST				WILCOX ST				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	1	0	3	0	0	0	1	0	1	0	0	6	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**3**	**0**	**0**	**0**	**1**	**0**	**1**	**1**	**0**	**7**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**0**	**6**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**4**	23
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**4**	**21**
5:15 PM	0	0	0	0	0	0	0	2	0	0	2	0	0	0	1	0	5	19
5:30 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	15
5:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	13
Count Total	0	0	0	0	0	2	0	16	0	0	4	2	0	9	3	0	36	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**9**	**0**	**0**	**1**	**1**	**0**	**8**	**1**	**0**	**21**	**0**

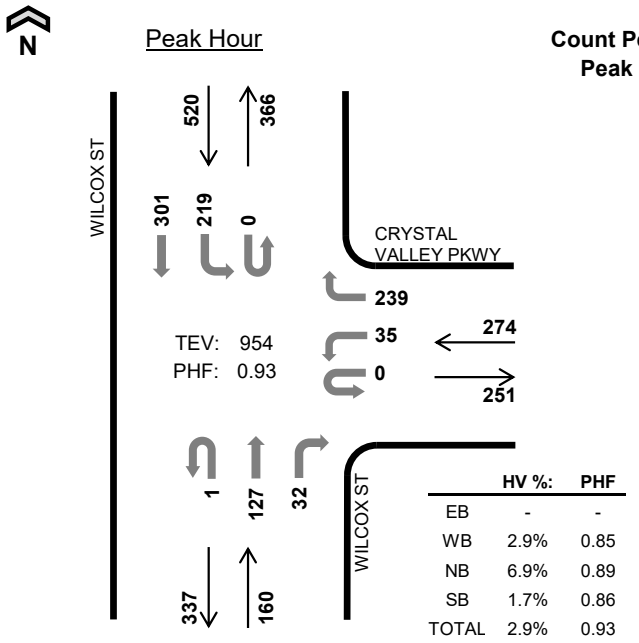
Two-Hour Count Summaries - Bikes

Interval Start	0			CRYSTAL VALLEY PKWY			WILCOX ST			WILCOX ST			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	1	0
4:15 PM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	0
4:45 PM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**2**	5
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**5**
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	4
5:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	1	4
5:45 PM	0	0	0	1	0	0	0	1	0	0	0	0	2	4
Count Total	0	0	0	3	0	1	0	2	2	0	1	0	9	0
Peak Hour	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**1**	**0**	**1**	**0**	**5**	**0**

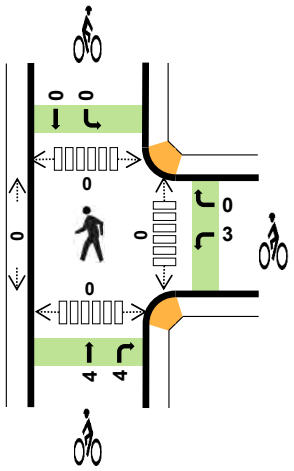
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

WILCOX ST
CRYSTAL VALLEY PKWY

Date: 05-01-2021
Count Period: 11:00 AM to 1:00 PM
Peak Hour: 11:15 AM to 12:15 PM



	HV %:	PHF
EB	-	-
WB	2.9%	0.85
NB	6.9%	0.89
SB	1.7%	0.86
TOTAL	2.9%	0.93



Two-Hour Count Summaries

Interval Start	0 Eastbound				CRYSTAL VALLEY PKWY Westbound				WILCOX ST Northbound				WILCOX ST Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM	0	0	0	0	0	16	0	62	0	0	25	8	0	56	46	0	213	0
11:15 AM	**0**	**0**	**0**	**0**	**0**	**9**	**0**	**72**	**1**	**0**	**28**	**10**	**0**	**44**	**73**	**0**	**237**	0
11:30 AM	**0**	**0**	**0**	**0**	**0**	**7**	**0**	**54**	**0**	**0**	**37**	**8**	**0**	**56**	**95**	**0**	**257**	0
11:45 AM	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**60**	**0**	**0**	**33**	**6**	**0**	**54**	**54**	**0**	**212**	919
12:00 PM	**0**	**0**	**0**	**0**	**0**	**14**	**0**	**53**	**0**	**0**	**29**	**8**	**0**	**65**	**79**	**0**	**248**	**954**
12:15 PM	0	0	0	0	0	5	0	83	0	0	40	12	0	56	40	0	236	953
12:30 PM	0	0	0	0	0	1	0	73	0	0	36	7	0	48	34	0	199	895
12:45 PM	0	0	0	0	0	9	0	50	0	0	24	19	0	50	40	0	192	875
Count Total	0	0	0	0	0	66	0	507	1	0	252	78	0	429	461	0	1,794	0
Peak Hour All	**0**	**0**	**0**	**0**	**0**	**35**	**0**	**239**	**1**	**0**	**127**	**32**	**0**	**219**	**301**	**0**	**954**	**0**
Peak Hour HV	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**5**	**0**	**0**	**8**	**3**	**0**	**3**	**6**	**0**	**28**	**0**
Peak Hour HV%	**-**	**-**	**-**	**-**	**-**	**9%**	**-**	**2%**	**0%**	**-**	**6%**	**9%**	**-**	**1%**	**2%**	**-**	**3%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
11:00 AM	0	2	1	1	*4*	0	1	1	2	*4*	0	0	0	0	*0*
11:15 AM	**0**	**0**	**3**	**4**	***7***	**0**	**1**	**1**	**0**	***2***	**0**	**0**	**0**	**0**	*0*
11:30 AM	**0**	**2**	**4**	**4**	***10***	**0**	**1**	**2**	**0**	***3***	**0**	**0**	**0**	**0**	*0*
11:45 AM	**0**	**1**	**3**	**1**	***5***	**0**	**0**	**5**	**0**	***5***	**0**	**0**	**0**	**0**	*0*
12:00 PM	**0**	**5**	**1**	**0**	***6***	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	***0***
12:15 PM	0	1	1	0	*2*	0	1	1	0	*2*	0	0	0	0	*0*
12:30 PM	0	1	0	1	*2*	0	0	2	0	*2*	1	0	0	0	*1*
12:45 PM	0	0	0	1	*1*	0	1	0	2	*3*	0	0	0	0	*0*
Count Total	0	12	13	12	*37*	0	6	12	4	*22*	1	0	0	0	*1*
Peak Hr	**0**	**8**	**11**	**9**	***28***	**0**	**3**	**8**	**0**	***11***	**0**	**0**	**0**	**0**	***0***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	0				CRYSTAL VALLEY PKWY				WILCOX ST				WILCOX ST				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM	0	0	0	0	0	0	0	2	0	0	1	0	0	1	0	0	4	0
11:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**0**	**1**	**3**	**0**	**7**	0
11:30 AM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**3**	**1**	**0**	**2**	**2**	**0**	**10**	0
11:45 AM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**1**	**0**	**5**	26
12:00 PM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**4**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**6**	**28**
12:15 PM	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2	23
12:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	2	15
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	11
Count Total	0	0	0	0	0	3	0	9	0	0	10	3	0	5	7	0	37	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**5**	**0**	**0**	**8**	**3**	**0**	**3**	**6**	**0**	**28**	**0**

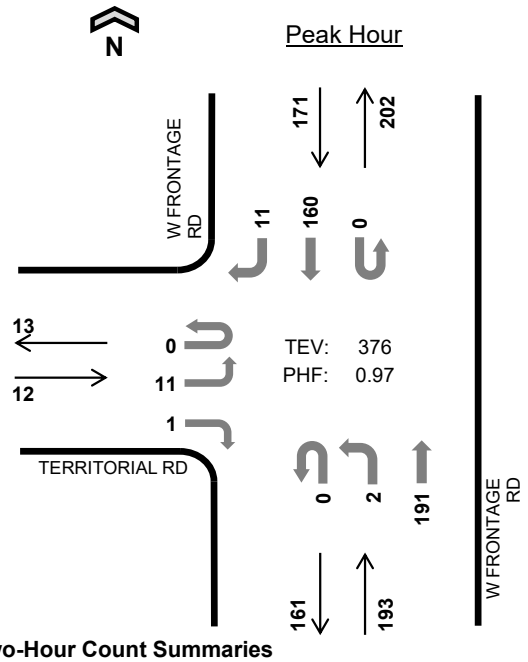
Two-Hour Count Summaries - Bikes

Interval Start	0			CRYSTAL VALLEY PKWY			WILCOX ST			WILCOX ST			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
11:00 AM	0	0	0	1	0	0	0	0	1	0	2	0	4	0
11:15 AM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**2**	0
11:30 AM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**3**	0
11:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**3**	**0**	**0**	**0**	**5**	14
12:00 PM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**11**
12:15 PM	0	0	0	0	0	1	0	0	1	0	0	0	2	11
12:30 PM	0	0	0	0	0	0	0	2	0	0	0	0	2	10
12:45 PM	0	0	0	1	0	0	0	0	0	1	1	0	3	8
Count Total	0	0	0	5	0	1	0	6	6	1	3	0	22	0
Peak Hour	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**4**	**4**	**0**	**0**	**0**	**11**	**0**

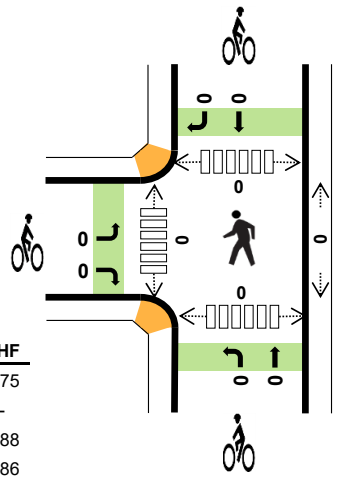
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

W FRONTAGE RD
TERRITORIAL RD

Date: 04-29-2021
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 8:00 AM to 9:00 AM



	HV %:	PHF
EB	0.0%	0.75
WB	-	-
NB	1.6%	0.88
SB	4.7%	0.86
TOTAL	2.9%	0.97



Two-Hour Count Summaries

Interval Start	TERRITORIAL RD Eastbound UT	LT	TH	RT	0 Westbound UT	LT	TH	RT	W FRONTAGE RD Northbound UT	LT	TH	RT	W FRONTAGE RD Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM	0	2	0	0	0	0	0	0	0	0	54	0	0	0	15	2	73	0
7:15 AM	0	1	0	0	0	0	0	0	0	0	44	0	0	0	26	0	71	0
7:30 AM	0	4	0	0	0	0	0	0	0	2	51	0	0	0	39	2	98	0
7:45 AM	0	4	0	0	0	0	0	0	0	0	42	0	0	0	38	0	84	326
8:00 AM	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**55**	**0**	**0**	**0**	**36**	**2**	**97**	350
8:15 AM	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**45**	**0**	**0**	**0**	**42**	**1**	**91**	370
8:30 AM	**0**	**3**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**47**	**0**	**0**	**0**	**38**	**2**	**93**	365
8:45 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**44**	**0**	**0**	**0**	**44**	**6**	**95**	**376**
Count Total	0	22	0	1	0	0	0	0	0	4	382	0	0	0	278	15	702	0
Peak Hour All	**0**	**11**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**191**	**0**	**0**	**0**	**160**	**11**	**376**	**0**
Peak Hour HV	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**8**	**0**	**11**	**0**
Peak Hour HV%	**-**	**0%**	**-**	**0%**	**-**	**-**	**-**	**-**	**-**	**50%**	**1%**	**-**	**-**	**-**	**5%**	**0%**	**3%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
7:00 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
7:15 AM	0	0	1	0	*1*	0	0	0	0	*0*	0	0	0	0	*0*
7:30 AM	0	0	1	2	*3*	0	0	0	0	*0*	0	0	0	0	*0*
7:45 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
8:00 AM	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:15 AM	**0**	**0**	**1**	**3**	***4***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:30 AM	**0**	**0**	**2**	**1**	***3***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:45 AM	**0**	**0**	**0**	**3**	***3***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
Count Total	0	0	5	10	*15*	0	0	0	0	*0*	0	0	0	0	*0*
Peak Hr	**0**	**0**	**3**	**8**	***11***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	TERRITORIAL RD				0				W FRONTAGE RD				W FRONTAGE RD				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	3	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	5
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**3**	**0**	**4**	8
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**1**	**0**	**3**	8
8:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**3**	**11**
Count Total	0	0	0	0	0	0	0	0	0	1	4	0	0	0	10	0	15	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**8**	**0**	**11**	**0**

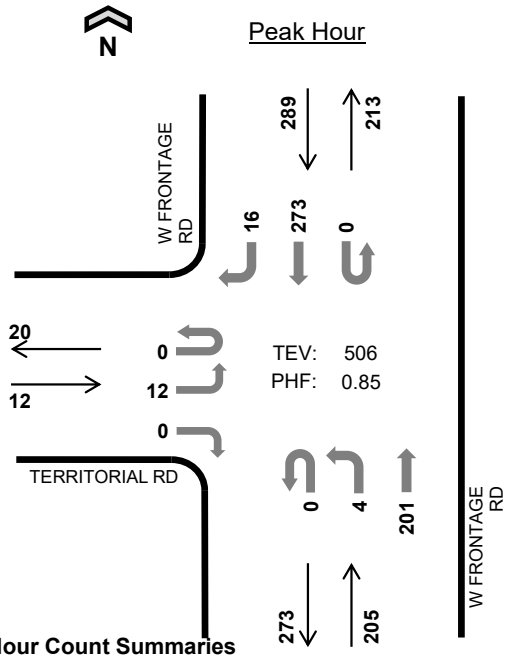
Two-Hour Count Summaries - Bikes

Interval Start	TERRITORIAL RD			0			W FRONTAGE RD			W FRONTAGE RD			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

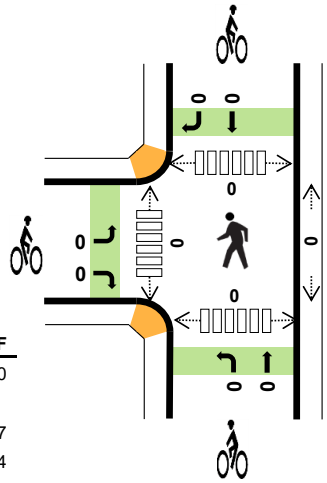
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

W FRONTAGE RD
TERRITORIAL RD

Date: 04-29-2021
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM



	HV %:	PHF
EB	0.0%	0.60
WB	-	-
NB	1.0%	0.87
SB	0.7%	0.84
TOTAL	0.8%	0.85



Two-Hour Count Summaries

Interval Start	TERRITORIAL RD Eastbound UT	LT	TH	RT	0 Westbound UT	LT	TH	RT	W FRONTAGE RD Northbound UT	LT	TH	RT	W FRONTAGE RD Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM	0	3	0	1	0	0	0	0	0	2	44	0	0	0	60	5	115	0
4:15 PM	0	3	0	2	0	0	0	0	0	1	41	0	0	0	70	3	120	0
4:30 PM	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**52**	**0**	**0**	**0**	**62**	**4**	**120**	0
4:45 PM	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**49**	**0**	**0**	**0**	**52**	**6**	**111**	466
5:00 PM	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**42**	**0**	**0**	**0**	**76**	**3**	**127**	478
5:15 PM	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**58**	**0**	**0**	**0**	**83**	**3**	**148**	**506**
5:30 PM	0	5	0	1	0	0	0	0	0	0	30	0	0	0	42	4	82	468
5:45 PM	0	0	0	0	0	0	0	0	0	0	34	0	0	0	67	3	104	461
Count Total	0	23	0	4	0	0	0	0	0	7	350	0	0	0	512	31	927	0
Peak Hour All	**0**	**12**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**201**	**0**	**0**	**0**	**273**	**16**	**506**	**0**
Peak Hour HV	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**2**	**0**	**4**	**0**
Peak Hour HV%	**-**	**0%**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**25%**	**0%**	**-**	**-**	**-**	**1%**	**0%**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
4:00 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
4:15 PM	0	0	0	2	*2*	0	0	0	0	*0*	0	0	0	0	*0*
4:30 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:45 PM	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:00 PM	**0**	**0**	**1**	**1**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:15 PM	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
5:30 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
5:45 PM	0	0	1	0	*1*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	0	0	3	4	*7*	0	0	0	0	*0*	0	0	0	0	*0*
Peak Hr	**0**	**0**	**2**	**2**	***4***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	TERRITORIAL RD				0				W FRONTAGE RD				W FRONTAGE RD				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	3
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	5
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**4**
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
5:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	4
Count Total	0	0	0	0	0	0	0	0	0	1	2	0	0	0	4	0	7	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**2**	**0**	**4**	**0**

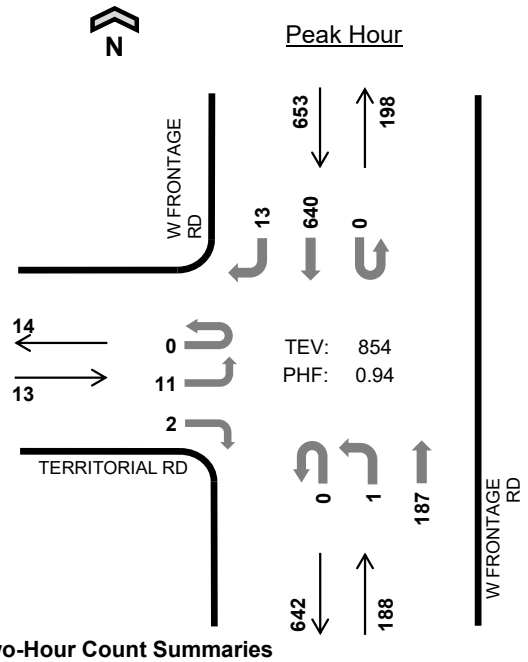
Two-Hour Count Summaries - Bikes

Interval Start	TERRITORIAL RD			0			W FRONTAGE RD			W FRONTAGE RD			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

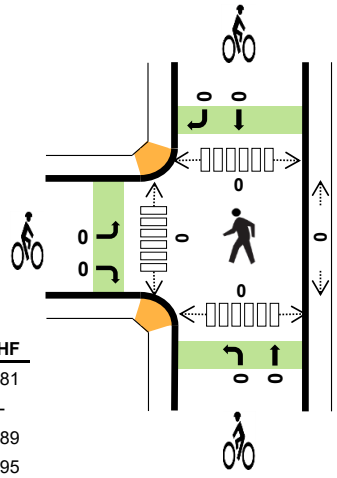
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

W FRONTAGE RD
TERRITORIAL RD

Date: 05-01-2021
Count Period: 11:00 AM to 1:00 PM
Peak Hour: 12:00 PM to 1:00 PM



	HV %:	PHF
EB	7.7%	0.81
WB	-	-
NB	2.7%	0.89
SB	0.9%	0.95
TOTAL	1.4%	0.94



Two-Hour Count Summaries

Interval Start	TERRITORIAL RD Eastbound				0 Westbound				W FRONTAGE RD Northbound				W FRONTAGE RD Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM	0	4	0	0	0	0	0	0	0	0	61	0	0	0	182	4	251	0
11:15 AM	0	0	0	1	0	0	0	0	0	0	61	0	0	0	143	3	208	0
11:30 AM	0	4	0	1	0	0	0	0	0	0	58	0	0	0	111	3	177	0
11:45 AM	0	2	0	1	0	0	0	0	0	1	45	0	0	0	155	2	206	842
12:00 PM	**0**	**2**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**45**	**0**	**0**	**0**	**148**	**3**	**199**	790
12:15 PM	**0**	**3**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**43**	**0**	**0**	**0**	**165**	**3**	**215**	797
12:30 PM	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**52**	**0**	**0**	**0**	**166**	**5**	**226**	846
12:45 PM	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**47**	**0**	**0**	**0**	**161**	**2**	**214**	**854**
Count Total	0	21	0	5	0	0	0	0	0	2	412	0	0	0	1,231	25	1,696	0
Peak Hour All	**0**	**11**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**1**	**187**	**0**	**0**	**0**	**640**	**13**	**854**	**0**
Peak Hour HV	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**6**	**0**	**12**	**0**
Peak Hour HV%	**-**	**0%**	**-**	**50%**	**-**	**-**	**-**	**-**	**-**	**0%**	**3%**	**-**	**-**	**-**	**1%**	**0%**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
11:00 AM	0	0	0	2	*2*	0	0	0	0	*0*	0	0	0	0	*0*
11:15 AM	0	0	2	1	*3*	0	0	0	0	*0*	0	0	0	0	*0*
11:30 AM	0	0	0	1	*1*	0	0	0	0	*0*	0	0	0	0	*0*
11:45 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
12:00 PM	**1**	**0**	**1**	**5**	***7***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
12:15 PM	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
12:30 PM	**0**	**0**	**2**	**1**	***3***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
12:45 PM	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
Count Total	1	0	7	10	*18*	0	0	0	0	*0*	0	0	0	0	*0*
Peak Hr	**1**	**0**	**5**	**6**	***12***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	TERRITORIAL RD				0				W FRONTAGE RD				W FRONTAGE RD				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	3	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
12:00 PM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**5**	**0**	**7**	11
12:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	9
12:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**3**	11
12:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**12**
Count Total	0	0	0	1	0	0	0	0	0	0	7	0	0	0	10	0	18	0
Peak Hour	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**6**	**0**	**12**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	TERRITORIAL RD			0			W FRONTAGE RD			W FRONTAGE RD			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
12:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
12:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
12:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Location: 01_PLUM CREEK BLVD S-O PLUM CREEK PKWY
Date Range: 5/5/2021 - 5/11/2021
Site Code: 01

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	5/5/2021			5/6/2021			5/7/2021			5/8/2021			5/9/2021			5/10/2021			5/11/2021					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	3	9	12	5	6	11	8	7	15	7	17	24	9	15	24	-	-	-	-	-	-	4	8	12
1:00 AM	0	3	3	2	6	8	0	4	4	6	9	15	6	10	16	-	-	-	-	-	-	1	5	6
2:00 AM	3	3	6	4	4	8	1	4	5	4	2	6	1	2	3	-	-	-	-	-	-	4	4	7
3:00 AM	3	0	3	8	1	9	7	4	11	3	2	5	7	2	9	-	-	-	-	-	-	6	1	6
4:00 AM	16	2	18	16	3	19	11	2	13	8	1	9	6	2	8	-	-	-	-	-	-	16	3	19
5:00 AM	39	11	50	39	12	51	32	21	53	17	10	27	11	4	15	-	-	-	-	-	-	39	12	51
6:00 AM	117	45	162	96	45	141	58	48	106	40	24	64	33	13	46	-	-	-	-	-	-	107	45	152
7:00 AM	252	197	449	282	214	496	70	232	302	99	59	158	65	35	100	-	-	-	-	-	-	267	206	473
8:00 AM	225	156	381	232	170	402	123	159	282	184	129	313	132	73	205	-	-	-	-	-	-	229	163	392
9:00 AM	183	158	341	215	152	367	30	208	238	222	181	403	142	100	242	-	-	-	-	-	-	199	155	354
10:00 AM	209	182	391	202	203	405	28	207	235	236	237	473	236	208	444	-	-	-	-	-	-	206	193	398
11:00 AM	244	235	479	237	241	478	47	236	283	286	266	552	197	181	378	-	-	-	-	-	-	241	238	479
12:00 PM	216	268	484	202	243	445	6	262	268	284	278	562	189	219	408	-	-	-	-	-	-	209	256	465
1:00 PM	223	212	435	239	229	468	5	253	258	223	282	505	193	271	464	-	-	-	-	-	-	231	221	452
2:00 PM	272	244	516	279	250	529	44	281	325	246	282	528	174	207	381	-	-	-	-	-	-	276	247	523
3:00 PM	242	337	579	221	328	549	250	319	569	193	261	454	163	198	361	-	-	-	-	-	-	232	333	564
4:00 PM	251	369	620	208	306	514	271	330	601	205	232	437	144	178	322	-	-	-	-	-	-	230	338	567
5:00 PM	197	297	494	185	329	514	204	272	476	183	213	396	149	163	312	-	-	-	-	-	-	191	313	504
6:00 PM	171	197	368	71	235	306	153	205	358	140	176	316	100	135	235	-	-	-	-	-	-	121	216	337
7:00 PM	158	184	342	84	187	271	114	173	287	112	147	259	95	92	187	-	-	-	-	-	-	121	186	307
8:00 PM	90	133	223	63	111	174	88	142	230	70	116	186	47	80	127	-	-	-	-	-	-	77	122	199
9:00 PM	33	83	116	34	84	118	44	75	119	50	70	120	27	47	74	-	-	-	-	-	-	34	84	117
10:00 PM	16	43	59	28	33	61	14	50	64	34	50	84	14	22	36	-	-	-	-	-	-	22	38	60
11:00 PM	7	19	26	6	13	19	15	22	37	28	17	45	3	10	13	-	-	-	-	-	-	7	16	23
Total	**3,170**	**3,387**	**6,557**	**2,958**	**3,405**	**6,363**	**1,623**	**3,516**	**5,139**	**2,880**	**3,061**	**5,941**	**2,143**	**2,267**	**4,410**	-	-	-	-	-	-	**3,064**	**3,396**	**6,460**
Percent	**48%**	**52%**	-	**46%**	**54%**	-	**32%**	**68%**	-	**48%**	**52%**	-	**49%**	**51%**	-	-	-	-	-	-	-	**47%**	**53%**	-

1. Mid-week average includes data between Tuesday and Thursday.

Mark Skaggs:425-250-0777
mark.skaggs@daxdata.com

Location: 02_PLUM CREEK BLVD S-O CHERRY PLUM WAY
Date Range: 4/28/2021 - 5/4/2021
Site Code: 02

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	4/28/2021			4/29/2021			4/30/2021			5/1/2021			5/2/2021			5/3/2021			5/4/2021					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	1	1	2	0	3	3	0	3	3	1	1	2	5	8	13	-	-	-	-	-	-	1	2	3
1:00 AM	0	1	1	2	1	3	2	2	4	1	0	1	2	2	4	-	-	-	-	-	-	1	1	2
2:00 AM	0	0	0	0	0	0	1	0	1	1	0	1	1	1	2	-	-	-	-	-	-	0	0	0
3:00 AM	0	0	0	0	2	2	1	1	2	1	0	1	0	0	0	-	-	-	-	-	-	0	1	1
4:00 AM	1	1	2	2	1	3	2	1	3	1	1	2	0	1	1	-	-	-	-	-	-	2	1	3
5:00 AM	1	4	5	5	6	11	4	5	9	3	4	7	2	2	4	-	-	-	-	-	-	3	5	8
6:00 AM	22	10	32	17	12	29	14	15	29	12	10	22	7	5	12	-	-	-	-	-	-	20	11	31
7:00 AM	48	55	103	44	61	105	50	41	91	21	10	31	10	8	18	-	-	-	-	-	-	46	58	104
8:00 AM	36	42	78	48	43	91	49	44	93	40	27	67	25	25	50	-	-	-	-	-	-	42	43	85
9:00 AM	19	25	44	47	51	98	54	47	101	49	49	98	42	38	80	-	-	-	-	-	-	33	38	71
10:00 AM	32	31	63	40	36	76	50	51	101	60	62	122	41	49	90	-	-	-	-	-	-	36	34	70
11:00 AM	45	33	78	55	44	99	70	50	120	51	73	124	60	45	105	-	-	-	-	-	-	50	39	89
12:00 PM	32	46	78	41	49	90	103	70	173	58	56	114	45	72	117	-	-	-	-	-	-	37	48	84
1:00 PM	33	35	68	52	57	109	62	76	138	52	64	116	68	37	105	-	-	-	-	-	-	43	46	89
2:00 PM	52	36	88	64	53	117	57	54	111	66	61	127	40	47	87	-	-	-	-	-	-	58	45	103
3:00 PM	59	83	142	45	95	140	61	77	138	45	68	113	32	59	91	-	-	-	-	-	-	52	89	141
4:00 PM	55	55	110	55	71	126	68	64	132	39	48	87	30	45	75	-	-	-	-	-	-	55	63	118
5:00 PM	45	65	110	48	61	109	66	66	132	47	50	97	36	40	76	-	-	-	-	-	-	47	63	110
6:00 PM	40	55	95	42	56	98	47	57	104	27	33	60	30	17	47	-	-	-	-	-	-	41	56	97
7:00 PM	26	27	53	21	29	50	15	41	56	25	33	58	14	28	42	-	-	-	-	-	-	24	28	52
8:00 PM	12	27	39	14	18	32	23	28	51	21	28	49	4	10	14	-	-	-	-	-	-	13	23	36
9:00 PM	8	12	20	6	7	13	8	16	24	13	18	31	6	7	13	-	-	-	-	-	-	7	10	17
10:00 PM	2	3	5	5	2	7	6	10	16	8	12	20	3	2	5	-	-	-	-	-	-	4	3	6
11:00 PM	2	1	3	0	0	0	4	2	6	5	8	13	4	2	6	-	-	-	-	-	-	1	1	2
Total	**571**	**648**	**1,219**	**653**	**758**	**1,411**	**817**	**821**	**1,638**	**647**	**716**	**1,363**	**507**	**550**	**1,057**	-	-	-	-	-	-	**612**	**703**	**1,315**
Percent	**47%**	**53%**	-	**46%**	**54%**	-	**50%**	**50%**	-	**47%**	**53%**	-	**48%**	**52%**	-	-	-	-	-	-	-	**47%**	**53%**	-

1. Mid-week average includes data between Tuesday and Thursday.

Mark Skaggs:425-250-0777
mark.skaggs@daxdata.com

Location: 03_CRYSTAL VALLEY PKWY E-O WILCOX ST
Date Range: 5/5/2021 - 5/11/2021
Site Code: 03

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	5/5/2021			5/6/2021			5/7/2021			5/8/2021			5/9/2021			5/10/2021			5/11/2021					
Time	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	2	13	15	3	7	10	4	10	14	9	26	35	7	13	20	-	-	-	-	-	-	3	10	13
1:00 AM	2	4	6	3	3	6	2	6	8	0	11	11	2	10	12	-	-	-	-	-	-	3	4	6
2:00 AM	2	4	6	1	4	5	1	4	5	2	6	8	4	0	4	-	-	-	-	-	-	2	4	6
3:00 AM	8	2	10	9	2	11	7	3	10	6	4	10	4	4	8	-	-	-	-	-	-	9	2	11
4:00 AM	35	7	42	25	3	28	29	6	35	16	6	22	7	0	7	-	-	-	-	-	-	30	5	35
5:00 AM	89	25	114	83	24	107	88	23	111	25	14	39	17	0	17	-	-	-	-	-	-	86	25	111
6:00 AM	229	170	399	244	164	408	218	194	412	75	76	151	44	0	44	-	-	-	-	-	-	237	167	404
7:00 AM	458	226	684	423	248	671	415	228	643	170	152	322	89	0	89	-	-	-	-	-	-	441	237	678
8:00 AM	254	240	494	264	265	529	243	240	483	229	147	376	177	0	177	-	-	-	-	-	-	259	253	512
9:00 AM	213	208	421	237	201	438	260	220	480	293	161	454	189	0	189	-	-	-	-	-	-	225	205	430
10:00 AM	239	168	407	234	161	395	296	206	502	282	250	532	246	0	246	-	-	-	-	-	-	237	165	401
11:00 AM	255	214	469	286	233	519	284	233	517	308	240	548	219	14	233	-	-	-	-	-	-	271	224	494
12:00 PM	262	234	496	286	276	562	279	297	576	332	293	625	236	217	453	-	-	-	-	-	-	274	255	529
1:00 PM	223	198	421	222	242	464	270	251	521	270	264	534	171	222	393	-	-	-	-	-	-	223	220	443
2:00 PM	233	219	452	260	230	490	279	240	519	260	245	505	166	197	363	-	-	-	-	-	-	247	225	471
3:00 PM	360	324	684	370	332	702	341	340	681	240	248	488	160	184	344	-	-	-	-	-	-	365	328	693
4:00 PM	299	371	670	325	410	735	310	343	653	252	192	444	162	197	359	-	-	-	-	-	-	312	391	703
5:00 PM	256	354	610	339	378	717	293	339	632	201	240	441	155	177	332	-	-	-	-	-	-	298	366	664
6:00 PM	274	302	576	265	288	553	252	226	478	153	210	363	126	145	271	-	-	-	-	-	-	270	295	565
7:00 PM	160	184	344	134	213	347	141	196	337	103	161	264	107	136	243	-	-	-	-	-	-	147	199	346
8:00 PM	63	165	228	82	192	274	94	145	239	97	134	231	69	118	187	-	-	-	-	-	-	73	179	251
9:00 PM	41	99	140	39	112	151	54	125	179	49	107	156	49	81	130	-	-	-	-	-	-	40	106	146
10:00 PM	14	52	66	19	55	74	28	64	92	30	73	103	12	40	52	-	-	-	-	-	-	17	54	70
11:00 PM	8	20	28	7	24	31	16	48	64	18	43	61	10	16	26	-	-	-	-	-	-	8	22	30
Total	**3,979**	**3,803**	**7,782**	**4,160**	**4,067**	**8,227**	**4,204**	**3,987**	**8,191**	**3,420**	**3,303**	**6,723**	**2,428**	**1,771**	**4,199**	-	-	-	-	-	-	**4,070**	**3,935**	**8,005**
Percent	**51%**	**49%**	-	**51%**	**49%**	-	**51%**	**49%**	-	**51%**	**49%**	-	**58%**	**42%**	-	-	-	-	-	-	-	**51%**	**49%**	-

1. Mid-week average includes data between Tuesday and Thursday.

Mark Skaggs:425-250-0777
mark.skaggs@daxdata.com

Location: 04_TERRITORIAL RD W-O FRONTAGE RD
Date Range: 4/28/2021 - 5/4/2021
Site Code: 04

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday					
	4/28/2021			4/29/2021			4/30/2021			5/1/2021			5/2/2021			5/3/2021			5/4/2021			Mid-Week Average		
Time	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	0	1	1	1	1	2	0	2	2	0	2	2	2	2	4	-	-	-	-	-	-	1	1	2
1:00 AM	1	0	1	0	0	0	0	0	0	1	3	4	1	1	2	-	-	-	-	-	-	1	0	1
2:00 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	-	-	-	-	-	-	0	0	0
3:00 AM	1	0	1	0	0	0	0	0	0	2	0	2	1	0	1	-	-	-	-	-	-	1	0	1
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	-	-	-	-	-	-	0	0	0
5:00 AM	0	2	2	2	0	2	3	0	3	0	0	0	1	0	1	-	-	-	-	-	-	1	1	2
6:00 AM	11	2	13	12	0	12	7	1	8	6	2	8	3	2	5	-	-	-	-	-	-	12	1	13
7:00 AM	10	3	13	11	6	17	16	7	23	8	2	10	6	5	11	-	-	-	-	-	-	11	5	15
8:00 AM	9	8	17	12	13	25	13	6	19	20	7	27	12	4	16	-	-	-	-	-	-	11	11	21
9:00 AM	10	14	24	16	13	29	12	6	18	13	14	27	8	7	15	-	-	-	-	-	-	13	14	27
10:00 AM	13	11	24	16	12	28	11	9	20	15	5	20	16	18	34	-	-	-	-	-	-	15	12	26
11:00 AM	9	12	21	9	13	22	9	14	23	13	13	26	18	7	25	-	-	-	-	-	-	9	13	22
12:00 PM	5	11	16	16	13	29	21	20	41	12	13	25	18	10	28	-	-	-	-	-	-	11	12	23
1:00 PM	14	17	31	9	14	23	13	12	25	7	9	16	10	17	27	-	-	-	-	-	-	12	16	27
2:00 PM	15	13	28	13	9	22	12	19	31	11	5	16	8	6	14	-	-	-	-	-	-	14	11	25
3:00 PM	23	13	36	10	23	33	9	18	27	13	16	29	11	23	34	-	-	-	-	-	-	17	18	35
4:00 PM	16	28	44	12	22	34	11	16	27	13	12	25	12	16	28	-	-	-	-	-	-	14	25	39
5:00 PM	17	16	33	14	15	29	6	24	30	6	14	20	10	11	21	-	-	-	-	-	-	16	16	31
6:00 PM	10	18	28	7	14	21	16	10	26	9	12	21	7	7	14	-	-	-	-	-	-	9	16	25
7:00 PM	9	8	17	3	12	15	13	9	22	5	6	11	4	8	12	-	-	-	-	-	-	6	10	16
8:00 PM	6	10	16	9	3	12	6	7	13	9	6	15	0	3	3	-	-	-	-	-	-	8	7	14
9:00 PM	2	6	8	3	6	9	2	9	11	4	8	12	6	5	11	-	-	-	-	-	-	3	6	9
10:00 PM	0	1	1	0	3	3	1	4	5	4	5	9	0	1	1	-	-	-	-	-	-	0	2	2
11:00 PM	2	0	2	0	0	0	3	2	5	1	1	2	3	5	8	-	-	-	-	-	-	1	0	1
Total	**183**	**194**	**377**	**175**	**192**	**367**	**184**	**195**	**379**	**172**	**156**	**328**	**158**	**158**	**316**	-	-	-	-	-	-	**179**	**193**	**372**
Percent	**49%**	**51%**	-	**48%**	**52%**	-	**49%**	**51%**	-	**52%**	**48%**	-	**50%**	**50%**	-	-	-	-	-	-	-	**48%**	**52%**	-

1. Mid-week average includes data between Tuesday and Thursday.

Location: 05_FRONTAGE RD N-O TERRITORIAL RD
Date Range: 5/5/2021 - 5/11/2021
Site Code: 05

	Wednesday			Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Mid-Week Average		
	5/5/2021			5/6/2021			5/7/2021			5/8/2021			5/9/2021			5/10/2021			5/11/2021					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	1	9	10	2	11	13	2	9	11	5	12	17	7	15	22	-	-	-	-	-	-	2	10	12
1:00 AM	1	6	7	0	5	5	2	3	5	1	11	12	5	8	13	-	-	-	-	-	-	1	6	6
2:00 AM	2	0	2	2	1	3	2	4	6	2	5	7	4	10	14	-	-	-	-	-	-	2	1	3
3:00 AM	5	1	6	9	0	9	8	1	9	2	2	4	5	5	10	-	-	-	-	-	-	7	1	8
4:00 AM	12	1	13	10	1	11	8	1	9	7	2	9	5	3	8	-	-	-	-	-	-	11	1	12
5:00 AM	57	9	66	58	11	69	46	9	55	14	7	21	15	3	18	-	-	-	-	-	-	58	10	68
6:00 AM	137	46	183	130	49	179	149	45	194	54	32	86	30	20	50	-	-	-	-	-	-	134	48	181
7:00 AM	252	119	371	245	99	344	238	132	370	91	69	160	55	33	88	-	-	-	-	-	-	249	109	358
8:00 AM	196	153	349	187	152	339	193	160	353	153	85	238	109	53	162	-	-	-	-	-	-	192	153	344
9:00 AM	190	150	340	177	142	319	208	166	374	203	142	345	148	80	228	-	-	-	-	-	-	184	146	330
10:00 AM	201	158	359	194	124	318	191	161	352	236	185	421	151	137	288	-	-	-	-	-	-	198	141	339
11:00 AM	168	175	343	179	149	328	194	212	406	211	354	565	191	188	379	-	-	-	-	-	-	174	162	336
12:00 PM	187	192	379	193	210	403	203	234	437	209	382	591	167	200	367	-	-	-	-	-	-	190	201	391
1:00 PM	165	174	339	162	193	355	185	221	406	212	297	509	158	219	377	-	-	-	-	-	-	164	184	347
2:00 PM	164	193	357	189	225	414	237	294	531	161	255	416	153	203	356	-	-	-	-	-	-	177	209	386
3:00 PM	180	251	431	175	259	434	196	337	533	207	323	530	139	178	317	-	-	-	-	-	-	178	255	433
4:00 PM	168	291	459	196	286	482	203	345	548	160	260	420	149	204	353	-	-	-	-	-	-	182	289	471
5:00 PM	176	313	489	150	286	436	178	340	518	144	198	342	133	132	265	-	-	-	-	-	-	163	300	463
6:00 PM	117	197	314	142	218	360	132	251	383	97	162	259	105	105	210	-	-	-	-	-	-	130	208	337
7:00 PM	55	167	222	96	176	272	105	159	264	88	155	243	91	93	184	-	-	-	-	-	-	76	172	247
8:00 PM	38	132	170	59	120	179	81	125	206	52	104	156	68	70	138	-	-	-	-	-	-	49	126	175
9:00 PM	24	92	116	20	104	124	34	132	166	44	75	119	28	60	88	-	-	-	-	-	-	22	98	120
10:00 PM	12	38	50	20	36	56	24	68	92	36	45	81	18	23	41	-	-	-	-	-	-	16	37	53
11:00 PM	5	20	25	5	19	24	23	35	58	22	29	51	5	8	13	-	-	-	-	-	-	5	20	25
Total	**2,513**	**2,887**	**5,400**	**2,600**	**2,876**	**5,476**	**2,842**	**3,444**	**6,286**	**2,411**	**3,191**	**5,602**	**1,939**	**2,050**	**3,989**	-	-	-	-	-	-	**2,557**	**2,882**	**5,438**
Percent	**47%**	**53%**	-	**47%**	**53%**	-	**45%**	**55%**	-	**43%**	**57%**	-	**49%**	**51%**	-	-	-	-	-	-	-	**47%**	**53%**	-

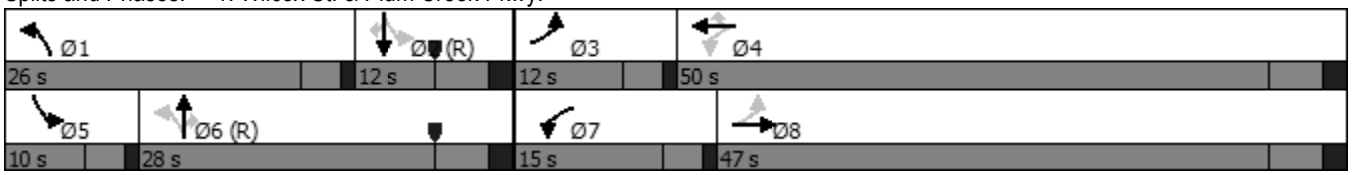
1. Mid-week average includes data between Tuesday and Thursday.

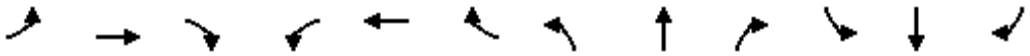
Intersection Capacity Worksheets: 2021 Existing

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	122	550	436	98	904	103	466	141	107	57	125	77
Future Volume (vph)	122	550	436	98	904	103	466	141	107	57	125	77
Turn Type	pm+pt	NA	Free	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		Free	4		4	6		6	2		2
Detector Phase	3	8		7	4	4	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	5.0	10.0	10.0	5.0	4.0	4.0
Minimum Split (s)	9.5	31.0		14.5	31.0	31.0	9.5	16.0	16.0	9.5	10.0	10.0
Total Split (s)	12.0	47.0		15.0	50.0	50.0	26.0	28.0	28.0	10.0	12.0	12.0
Total Split (%)	12.0%	47.0%		15.0%	50.0%	50.0%	26.0%	28.0%	28.0%	10.0%	12.0%	12.0%
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	2.0		1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	44.5	34.8	100.0	49.2	37.2	37.2	41.2	30.9	30.9	23.2	15.2	15.2
Actuated g/C Ratio	0.44	0.35	1.00	0.49	0.37	0.37	0.41	0.31	0.31	0.23	0.15	0.15
v/c Ratio	0.68	0.57	0.35	0.30	0.76	0.16	0.73	0.40	0.29	0.23	0.54	0.24

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 32 (32%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 26.6
Intersection Capacity Utilization 68.3%
Analysis Period (min) 15

Splits and Phases: 1: Wilcox St. & Plum Creek Pkwy.





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	153	688	545	109	1004	114	752	227	173	67	147	91
v/c Ratio	0.68	0.57	0.35	0.30	0.76	0.16	0.73	0.40	0.29	0.23	0.54	0.24
Control Delay	29.9	27.9	0.6	19.2	41.1	8.5	28.3	32.9	6.4	24.7	53.2	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.9	27.9	0.6	19.2	41.3	8.5	28.3	32.9	6.4	24.7	53.2	1.6
Queue Length 50th (ft)	49	183	0	50	361	9	185	119	0	26	90	0
Queue Length 95th (ft)	63	184	0	m89	426	m59	167	133	8	57	#230	0
Internal Link Dist (ft)		553			473			812			658	
Turn Bay Length (ft)	280		250	185			190		195	130		130
Base Capacity (vph)	230	1416	1538	381	1557	788	1081	570	604	301	274	372
Starvation Cap Reductn	0	0	0	0	109	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.49	0.35	0.29	0.69	0.14	0.70	0.40	0.29	0.22	0.54	0.24

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Twin Mesa Metropolitan District New Service Plan
SV2023-003
Planning Commission Supplemental Memo Page 238 of 1222

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	122	550	436	98	904	103	466	141	107	57	125	77
Future Volume (veh/h)	122	550	436	98	904	103	466	141	107	57	125	77
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1870	1870	1870	1856	1856	1856	1826	1826	1826
Adj Flow Rate, veh/h	152	688	0	109	1004	114	752	227	173	67	147	91
Peak Hour Factor	0.80	0.80	0.80	0.90	0.90	0.90	0.62	0.62	0.62	0.85	0.85	0.85
Percent Heavy Veh, %	5	5	5	2	2	2	3	3	3	5	5	5
Cap, veh/h	244	1173		373	1273	568	1032	600	508	311	310	263
Arrive On Green	0.08	0.34	0.00	0.03	0.12	0.12	0.20	0.32	0.32	0.04	0.17	0.17
Sat Flow, veh/h	1739	3469	1547	1781	3554	1585	3428	1856	1572	1739	1826	1547
Grp Volume(v), veh/h	152	688	0	109	1004	114	752	227	173	67	147	91
Grp Sat Flow(s),veh/h/ln	1739	1735	1547	1781	1777	1585	1714	1856	1572	1739	1826	1547
Q Serve(g_s), s	5.6	16.4	0.0	3.8	27.5	6.5	17.2	9.4	8.4	3.2	7.3	5.2
Cycle Q Clear(g_c), s	5.6	16.4	0.0	3.8	27.5	6.5	17.2	9.4	8.4	3.2	7.3	5.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	244	1173		373	1273	568	1032	600	508	311	310	263
V/C Ratio(X)	0.62	0.59		0.29	0.79	0.20	0.73	0.38	0.34	0.22	0.47	0.35
Avail Cap(c_a), veh/h	252	1422		400	1564	697	1112	600	508	340	310	263
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.82	0.82	0.82	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.5	27.3	0.0	20.0	40.4	31.2	24.7	26.1	25.7	32.2	37.5	36.6
Incr Delay (d2), s/veh	3.2	0.5	0.0	0.1	1.9	0.1	1.9	1.8	1.8	0.1	5.1	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	6.6	0.0	1.6	13.3	2.6	7.2	4.5	3.3	1.3	3.7	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.7	27.8	0.0	20.2	42.3	31.3	26.6	27.9	27.6	32.3	42.6	40.2
LnGrp LOS	C	C		C	D	C	C	C	C	C	D	D
Approach Vol, veh/h		840	A		1227			1152			305	
Approach Delay, s/veh		27.6			39.3			27.0			39.6	
Approach LOS		C			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.7	23.0	11.5	41.8	8.4	38.3	13.5	39.8
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	22.0	6.0	8.0	44.0	6.0	22.0	11.0	41.0
Max Q Clear Time (g_c+I1), s	19.2	9.3	7.6	29.5	5.2	11.4	5.8	18.4
Green Ext Time (p_c), s	0.5	0.0	0.0	6.3	0.0	2.0	0.0	4.7

Intersection Summary	
HCM 6th Ctrl Delay	32.5
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

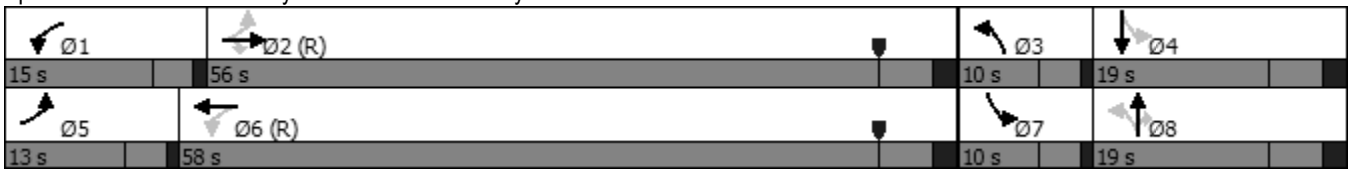
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Twin Mesa Metropolitan District New Service Plan
SV2023-003
Planning Commission Supplemental Memo Page 239 of 1222

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	112	495	115	116	988	69	36	56	74	57	59
Future Volume (vph)	112	495	115	116	988	69	36	56	74	57	59
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Free
Protected Phases	5	2		1	6	3	8		7	4	
Permitted Phases	2		2	6		8		8	4		Free
Detector Phase	5	2	2	1	6	3	8	8	7	4	
Switch Phase											
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0	3.0	5.0	5.0	3.0	5.0	
Minimum Split (s)	9.5	32.0	32.0	9.5	32.0	9.5	11.0	11.0	9.5	11.0	
Total Split (s)	13.0	56.0	56.0	15.0	58.0	10.0	19.0	19.0	10.0	19.0	
Total Split (%)	13.0%	56.0%	56.0%	15.0%	58.0%	10.0%	19.0%	19.0%	10.0%	19.0%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	6.0	4.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None	None	
Act Effct Green (s)	72.0	63.1	63.1	70.8	62.5	15.1	8.8	8.8	15.2	8.9	100.0
Actuated g/C Ratio	0.72	0.63	0.63	0.71	0.62	0.15	0.09	0.09	0.15	0.09	1.00
v/c Ratio	0.54	0.33	0.16	0.24	0.59	0.37	0.27	0.28	0.43	0.46	0.05

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 41 (41%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.59
Intersection Signal Delay: 13.2
Intersection Capacity Utilization 62.4%
Analysis Period (min) 15

Splits and Phases: 2: Perry St. & Plum Creek Pkwy.





Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	162	717	167	133	1288	85	44	69	100	77	80
v/c Ratio	0.54	0.33	0.16	0.24	0.59	0.37	0.27	0.28	0.43	0.46	0.05
Control Delay	10.6	13.4	7.3	4.5	9.4	37.6	45.4	4.2	39.2	51.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.6	13.4	7.3	4.5	9.4	37.6	45.4	4.2	39.2	51.2	0.1
Queue Length 50th (ft)	29	198	54	17	183	45	27	0	54	47	0
Queue Length 95th (ft)	45	178	64	m32	226	75	52	1	78	73	0
Internal Link Dist (ft)		473			1330		455			497	
Turn Bay Length (ft)	170		70	100		185		65	120		120
Base Capacity (vph)	336	2190	1024	623	2201	232	244	309	238	247	1615
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.33	0.16	0.21	0.59	0.37	0.18	0.22	0.42	0.31	0.05

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	495	115	116	988	132	69	36	56	74	57	59
Future Volume (veh/h)	112	495	115	116	988	132	69	36	56	74	57	59
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1885	1885	1885	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	162	717	167	133	1136	152	85	44	69	100	77	0
Peak Hour Factor	0.69	0.69	0.69	0.87	0.87	0.87	0.81	0.81	0.81	0.74	0.74	0.74
Percent Heavy Veh, %	4	4	4	1	1	1	1	1	1	0	0	0
Cap, veh/h	425	2188	976	442	1970	263	216	127	107	239	133	
Arrive On Green	0.02	0.21	0.21	0.09	1.00	1.00	0.06	0.07	0.07	0.06	0.07	0.00
Sat Flow, veh/h	1753	3497	1560	1795	3176	424	1795	1885	1583	1810	1900	1610
Grp Volume(v), veh/h	162	717	167	133	639	649	85	44	69	100	77	0
Grp Sat Flow(s),veh/h/ln	1753	1749	1560	1795	1791	1809	1795	1885	1583	1810	1900	1610
Q Serve(g_s), s	3.2	17.4	8.8	2.8	0.0	0.0	4.3	2.2	4.2	5.1	3.9	0.0
Cycle Q Clear(g_c), s	3.2	17.4	8.8	2.8	0.0	0.0	4.3	2.2	4.2	5.1	3.9	0.0
Prop In Lane	1.00		1.00	1.00		0.23	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	425	2188	976	442	1111	1122	216	127	107	239	133	
V/C Ratio(X)	0.38	0.33	0.17	0.30	0.58	0.58	0.39	0.35	0.65	0.42	0.58	
Avail Cap(c_a), veh/h	491	2188	976	555	1111	1122	220	245	206	239	247	
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.86	0.86	0.86	0.78	0.78	0.78	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	6.1	21.8	18.3	7.4	0.0	0.0	40.3	44.5	45.5	40.3	45.1	0.0
Incr Delay (d2), s/veh	0.2	0.3	0.3	0.1	1.7	1.7	0.4	1.2	4.8	0.4	2.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	8.2	3.4	0.8	0.5	0.5	1.9	1.1	1.8	2.3	1.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.3	22.1	18.7	7.5	1.7	1.7	40.7	45.7	50.2	40.8	48.0	0.0
LnGrp LOS	A	C	B	A	A	A	D	D	D	D	D	
Approach Vol, veh/h		1046			1421			198			177	A
Approach Delay, s/veh		19.1			2.2			45.1			43.9	
Approach LOS		B			A			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.7	68.6	9.7	13.0	9.2	68.0	10.0	12.7
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	11.0	50.0	6.0	13.0	9.0	52.0	6.0	13.0
Max Q Clear Time (g_c+I1), s	4.8	19.4	6.3	5.9	5.2	2.0	7.1	6.2
Green Ext Time (p_c), s	0.0	6.0	0.0	0.1	0.0	11.9	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	14.0
HCM 6th LOS	B

Notes

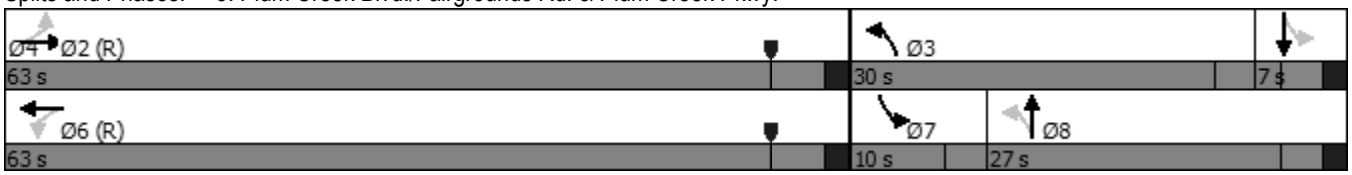
User approved pedestrian interval to be less than phase max green.

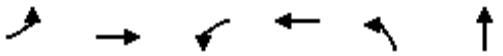
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	Ø4	Ø7
Lane Configurations								
Traffic Volume (vph)	14	426	48	962	274	0		
Future Volume (vph)	14	426	48	962	274	0		
Turn Type	Perm	NA	Perm	NA	pm+pt	NA		
Protected Phases		2		6	3	8	4	7
Permitted Phases	2		6		8			
Detector Phase	2	2	6	6	3	8		
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0	2.0	3.0
Minimum Split (s)	33.0	33.0	28.0	28.0	14.5	10.0	7.0	9.5
Total Split (s)	63.0	63.0	63.0	63.0	30.0	27.0	7.0	10.0
Total Split (%)	63.0%	63.0%	63.0%	63.0%	30.0%	27.0%	7%	10%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	6.0	6.0	6.0	6.0	3.0	5.0		
Lead/Lag					Lead	Lag	Lag	Lead
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	Max	Max	None
Act Effct Green (s)	57.0	57.0	57.0	57.0	34.0	32.0		
Actuated g/C Ratio	0.57	0.57	0.57	0.57	0.34	0.32		
v/c Ratio	0.08	0.37	0.15	0.56	0.70	0.05		

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 44 (44%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 14.2
Intersection Capacity Utilization 64.2%
Analysis Period (min) 15

Splits and Phases: 3: Plum Creek Blvd./Fairgrounds Rd. & Plum Creek Pkwy.





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT
Lane Group Flow (vph)	16	710	56	1133	356	44
v/c Ratio	0.08	0.37	0.15	0.56	0.70	0.05
Control Delay	5.6	3.6	11.5	14.9	35.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.6	3.6	11.5	14.9	35.6	0.1
Queue Length 50th (ft)	2	10	16	224	185	0
Queue Length 95th (ft)	m6	21	34	258	227	0
Internal Link Dist (ft)		1330		637		613
Turn Bay Length (ft)	70		55			
Base Capacity (vph)	191	1938	371	2037	555	807
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.37	0.15	0.56	0.64	0.05

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	426	185	48	962	1	274	0	34	0	0	0
Future Volume (veh/h)	14	426	185	48	962	1	274	0	34	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1885	1885	1885	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	16	495	215	56	1132	1	356	0	44	0	0	0
Peak Hour Factor	0.86	0.86	0.86	0.85	0.85	0.85	0.77	0.77	0.77	0.25	0.25	0.25
Percent Heavy Veh, %	4	4	4	1	1	1	1	1	1	0	0	0
Cap, veh/h	300	1500	648	542	2317	2	476	0	414	101	38	0
Arrive On Green	1.00	1.00	1.00	0.63	0.63	0.63	0.21	0.00	0.26	0.00	0.00	0.00
Sat Flow, veh/h	489	2377	1027	745	3672	3	1795	0	1598	1810	1900	0
Grp Volume(v), veh/h	16	363	347	56	552	581	356	0	44	0	0	0
Grp Sat Flow(s),veh/h/ln	489	1749	1655	745	1791	1885	1795	0	1598	1810	1900	0
Q Serve(g_s), s	0.9	0.0	0.0	3.0	16.4	16.4	18.6	0.0	2.1	0.0	0.0	0.0
Cycle Q Clear(g_c), s	17.3	0.0	0.0	3.0	16.4	16.4	18.6	0.0	2.1	0.0	0.0	0.0
Prop In Lane	1.00		0.62	1.00		0.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	300	1103	1044	542	1130	1189	476	0	414	101	38	0
V/C Ratio(X)	0.05	0.33	0.33	0.10	0.49	0.49	0.75	0.00	0.11	0.00	0.00	0.00
Avail Cap(c_a), veh/h	300	1103	1044	542	1130	1189	585	0	414	226	38	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	2.3	0.0	0.0	7.4	9.8	9.8	35.2	0.0	28.2	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.8	0.8	0.4	1.5	1.4	3.1	0.0	0.5	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.2	0.2	0.5	6.2	6.5	8.4	0.0	0.9	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	2.6	0.8	0.8	7.7	11.4	11.3	38.2	0.0	28.7	0.0	0.0	0.0
LnGrp LOS	A	A	A	A	B	B	D	A	C	A	A	A
Approach Vol, veh/h		726			1189			400			0	
Approach Delay, s/veh		0.8			11.2			37.2			0.0	
Approach LOS		A			B			D				

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	69.1	23.9	7.0	69.1	0.0	30.9
Change Period (Y+Rc), s	6.0	3.0	5.0	6.0	3.0	5.0
Max Green Setting (Gmax), s	57.0	27.0	2.0	57.0	7.0	22.0
Max Q Clear Time (g_c+I1), s	19.3	20.6	0.0	18.4	0.0	4.1
Green Ext Time (p_c), s	5.2	0.3	0.0	9.7	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	12.4
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑	↱	↰	↑
Traffic Volume (veh/h)	0	0	228	3	119	168
Future Volume (Veh/h)	0	0	228	3	119	168
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.90	0.90	0.94	0.94
Hourly flow rate (vph)	0	0	253	3	127	179
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	686	253			256	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	686	253			256	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			90	
cM capacity (veh/h)	373	786			1309	

Direction, Lane #	NB 1	NB 2	SB 1	SB 2
Volume Total	253	3	127	179
Volume Left	0	0	127	0
Volume Right	0	3	0	0
cSH	1700	1700	1309	1700
Volume to Capacity	0.15	0.00	0.10	0.11
Queue Length 95th (ft)	0	0	8	0
Control Delay (s)	0.0	0.0	8.0	0.0
Lane LOS			A	
Approach Delay (s)	0.0		3.3	
Approach LOS				

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	25.3%	ICU Level of Service	A
Analysis Period (min)	15		

Twin Mesa Metropolitan District New Service Plan
SV2023-003
Planning Commission Supplemental Memo Page 246 of 1222

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	180	63	2	364	19	27	3	4	27	8	41
Future Vol, veh/h	13	180	63	2	364	19	27	3	4	27	8	41
Conflicting Peds, #/hr	2	0	0	0	0	2	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	450	-	315	295	-	230	270	-	120	185	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	78	78	78	85	85	85	63	63	63
Heavy Vehicles, %	4	4	4	1	1	1	9	9	9	1	1	1
Mvmt Flow	16	220	77	3	467	24	32	4	5	43	13	65

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	493	0	0	297	0	0	498	751	110	619	804	236
Stage 1	-	-	-	-	-	-	252	252	-	475	475	-
Stage 2	-	-	-	-	-	-	246	499	-	144	329	-
Critical Hdwy	4.18	-	-	4.12	-	-	7.68	6.68	7.08	7.52	6.52	6.92
Critical Hdwy Stg 1	-	-	-	-	-	-	6.68	5.68	-	6.52	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.68	5.68	-	6.52	5.52	-
Follow-up Hdwy	2.24	-	-	2.21	-	-	3.59	4.09	3.39	3.51	4.01	3.31
Pot Cap-1 Maneuver	1053	-	-	1268	-	-	440	325	900	375	317	769
Stage 1	-	-	-	-	-	-	710	680	-	542	558	-
Stage 2	-	-	-	-	-	-	716	525	-	847	647	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1051	-	-	1268	-	-	385	319	900	364	311	768
Mov Cap-2 Maneuver	-	-	-	-	-	-	385	319	-	364	311	-
Stage 1	-	-	-	-	-	-	699	670	-	533	556	-
Stage 2	-	-	-	-	-	-	639	523	-	825	637	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0	14.6	13
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	385	319	900	1051	-	-	1268	-	-	364	311	768
HCM Lane V/C Ratio	0.083	0.011	0.005	0.015	-	-	0.002	-	-	0.118	0.041	0.085
HCM Control Delay (s)	15.2	16.4	9	8.5	-	-	7.8	-	-	16.2	17.1	10.1
HCM Lane LOS	C	C	A	A	-	-	A	-	-	C	C	B
HCM 95th %tile Q(veh)	0.3	0	0	0	-	-	0	-	-	0.4	0.1	0.3

Intersection	
Int Delay, s/veh	9.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	34	403	126	15	237	67
Future Vol, veh/h	34	403	126	15	237	67
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	0	0	-	-	545	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	88	75	75
Heavy Vehicles, %	2	2	1	1	8	8
Mvmt Flow	43	504	158	17	316	89

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	888	167	0	0	175	0
Stage 1	167	-	-	-	-	-
Stage 2	721	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.18	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.272	-
Pot Cap-1 Maneuver	314	877	-	-	1366	-
Stage 1	863	-	-	-	-	-
Stage 2	482	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	241	877	-	-	1366	-
Mov Cap-2 Maneuver	241	-	-	-	-	-
Stage 1	863	-	-	-	-	-
Stage 2	371	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.2	0	6.6
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	241	877	1366	-
HCM Lane V/C Ratio	-	-	0.176	0.574	0.231	-
HCM Control Delay (s)	-	-	23.1	14.5	8.4	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.6	3.7	0.9	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	1	2	211	160	11
Future Vol, veh/h	11	1	2	211	160	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	75	75	88	88	86	86
Heavy Vehicles, %	0	0	2	2	5	5
Mvmt Flow	15	1	2	240	186	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	437	193	199	0	-	0
Stage 1	193	-	-	-	-	-
Stage 2	244	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.12	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.218	-	-	-
Pot Cap-1 Maneuver	581	854	1373	-	-	-
Stage 1	845	-	-	-	-	-
Stage 2	801	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	580	854	1373	-	-	-
Mov Cap-2 Maneuver	580	-	-	-	-	-
Stage 1	843	-	-	-	-	-
Stage 2	801	-	-	-	-	-

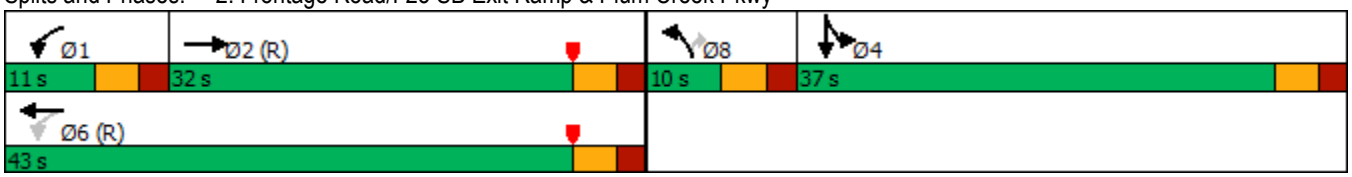
Approach	EB	NB	SB
HCM Control Delay, s	11.2	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1373	-	596	-	-
HCM Lane V/C Ratio	0.002	-	0.027	-	-
HCM Control Delay (s)	7.6	0	11.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	212	134	225	16	234	655	130
Future Volume (vph)	212	134	225	16	234	655	130
Turn Type	NA	pm+pt	NA	Prot	Perm	Split	NA
Protected Phases	2	1	6	8		4	4
Permitted Phases		6			8		
Detector Phase	2	1	6	8	8	4	4
Switch Phase							
Minimum Initial (s)	10.0	5.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	30.0	10.0	30.0	10.0	10.0	10.0	10.0
Total Split (s)	32.0	11.0	43.0	10.0	10.0	37.0	37.0
Total Split (%)	35.6%	12.2%	47.8%	11.1%	11.1%	41.1%	41.1%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead		Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes
Recall Mode	C-Max	None	C-Max	None	None	None	None
Act Effct Green (s)	32.0	44.9	44.9	5.0	5.0	25.1	25.1
Actuated g/C Ratio	0.36	0.50	0.50	0.06	0.06	0.28	0.28
v/c Ratio	0.16	0.28	0.14	0.18	0.78	0.67	0.67

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 20 (22%), Referenced to phase 2:EBT and 6:WBTL, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 27.1
Intersection Capacity Utilization 50.4%
Analysis Period (min) 15

Splits and Phases: 2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

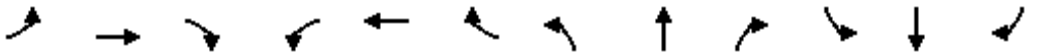




Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	284	149	250	18	260	604	307
v/c Ratio	0.16	0.28	0.14	0.18	0.78	0.67	0.67
Control Delay	17.9	23.0	20.4	45.1	23.3	32.2	34.6
Queue Delay	0.0	1.6	0.0	0.0	0.0	0.0	0.0
Total Delay	17.9	24.6	20.4	45.1	23.3	32.2	34.6
Queue Length 50th (ft)	34	52	45	10	0	166	163
Queue Length 95th (ft)	57	126	98	32	#109	202	234
Internal Link Dist (ft)	437		181				388
Turn Bay Length (ft)				350			
Base Capacity (vph)	1795	534	1767	98	333	1145	585
Starvation Cap Reductn	0	244	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.51	0.14	0.18	0.78	0.53	0.52

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	212	43	134	225	0	16	0	234	655	130	35
Future Volume (vph)	0	212	43	134	225	0	16	0	234	655	130	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0		5.0		5.0	5.0	5.0	
Lane Util. Factor		0.91		1.00	0.95		1.00		1.00	0.91	0.91	
Frt		0.97		1.00	1.00		1.00		0.85	1.00	0.98	
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95	0.98	
Satd. Flow (prot)		4956		1770	3539		1770		1583	3221	1630	
Flt Permitted		1.00		0.49	1.00		0.95		1.00	0.95	0.98	
Satd. Flow (perm)		4956		919	3539		1770		1583	3221	1630	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	236	48	149	250	0	18	0	260	728	144	39
RTOR Reduction (vph)	0	31	0	0	0	0	0	0	246	0	6	0
Lane Group Flow (vph)	0	253	0	149	250	0	18	0	14	604	301	0
Turn Type		NA		pm+pt	NA		Prot		Perm	Split	NA	
Protected Phases		2		1	6		8			4	4	
Permitted Phases				6					8			
Actuated Green, G (s)		32.0		44.9	44.9		5.0		5.0	25.1	25.1	
Effective Green, g (s)		32.0		44.9	44.9		5.0		5.0	25.1	25.1	
Actuated g/C Ratio		0.36		0.50	0.50		0.06		0.06	0.28	0.28	
Clearance Time (s)		5.0		5.0	5.0		5.0		5.0	5.0	5.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		1762		533	1765		98		87	898	454	
v/s Ratio Prot		0.05		c0.02	0.07		c0.01			c0.19	0.18	
v/s Ratio Perm				c0.11					0.01			
v/c Ratio		0.14		0.28	0.14		0.18		0.17	0.67	0.66	
Uniform Delay, d1		19.7		12.5	12.2		40.6		40.5	28.8	28.7	
Progression Factor		1.00		1.54	1.51		1.00		1.00	1.00	1.00	
Incremental Delay, d2		0.2		0.3	0.1		0.9		0.9	2.0	3.6	
Delay (s)		19.9		19.5	18.5		41.5		41.4	30.8	32.3	
Level of Service		B		B	B		D		D	C	C	
Approach Delay (s)		19.9			18.9			41.4			31.3	
Approach LOS		B			B			D			C	

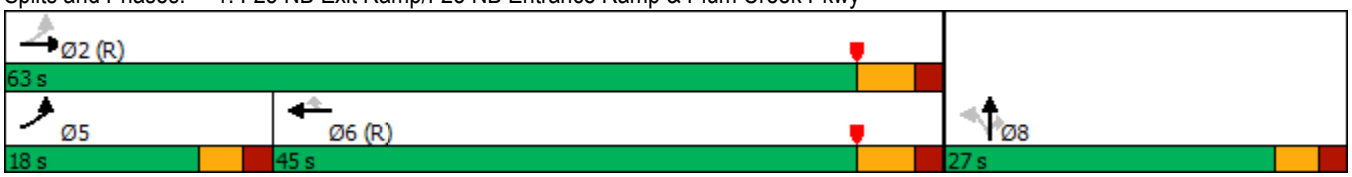
Intersection Summary			
HCM 2000 Control Delay	28.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	183	918	340	1012	25	2	103
Future Volume (vph)	183	918	340	1012	25	2	103
Turn Type	pm+pt	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6			8	
Permitted Phases	2			6	8		8
Detector Phase	5	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0	5.0
Minimum Split (s)	10.0	31.0	24.0	24.0	40.0	40.0	40.0
Total Split (s)	18.0	63.0	45.0	45.0	27.0	27.0	27.0
Total Split (%)	20.0%	70.0%	50.0%	50.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max
Act Effct Green (s)	58.0	57.0	42.4	42.4	22.0	22.0	22.0
Actuated g/C Ratio	0.64	0.63	0.47	0.47	0.24	0.24	0.24
v/c Ratio	0.53	0.31	0.53	0.57	0.06	0.15	0.13

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 53 (59%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.57
Intersection Signal Delay: 8.3
Intersection Capacity Utilization 69.4%
Analysis Period (min) 15

Splits and Phases: 1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy





Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	199	998	920	550	24	59	58
v/c Ratio	0.53	0.31	0.53	0.57	0.06	0.15	0.13
Control Delay	20.3	7.8	8.1	4.0	26.7	10.0	2.7
Queue Delay	0.5	0.5	0.0	0.0	0.0	0.0	0.0
Total Delay	20.7	8.2	8.1	4.0	26.7	10.0	2.7
Queue Length 50th (ft)	57	57	71	0	11	2	0
Queue Length 95th (ft)	m98	95	136	62	32	35	11
Internal Link Dist (ft)		181	431			480	
Turn Bay Length (ft)					350		150
Base Capacity (vph)	429	3220	1731	969	410	397	440
Starvation Cap Reductn	49	1623	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.62	0.53	0.57	0.06	0.15	0.13

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	183	918	0	0	340	1012	25	2	103	0	0	0
Future Volume (veh/h)	183	918	0	0	340	1012	25	2	103	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	199	998	0	0	370	1100	19	0	122			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	354	3234	0	0	936	1586	435	0	775			
Arrive On Green	0.15	1.00	0.00	0.00	0.50	0.50	0.24	0.00	0.24			
Sat Flow, veh/h	1781	5274	0	0	1870	3170	1781	0	3170			
Grp Volume(v), veh/h	199	998	0	0	370	1100	19	0	122			
Grp Sat Flow(s),veh/h/ln	1781	1702	0	0	1870	1585	1781	0	1585			
Q Serve(g_s), s	4.7	0.0	0.0	0.0	11.1	23.9	0.7	0.0	2.7			
Cycle Q Clear(g_c), s	4.7	0.0	0.0	0.0	11.1	23.9	0.7	0.0	2.7			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	354	3234	0	0	936	1586	435	0	775			
V/C Ratio(X)	0.56	0.31	0.00	0.00	0.40	0.69	0.04	0.00	0.16			
Avail Cap(c_a), veh/h	473	3234	0	0	936	1586	435	0	775			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.80	0.80	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	9.2	0.0	0.0	0.0	14.0	17.2	26.0	0.0	26.7			
Incr Delay (d2), s/veh	1.1	0.2	0.0	0.0	1.3	2.5	0.2	0.0	0.4			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.5	0.1	0.0	0.0	4.8	8.6	0.3	0.0	1.1			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.4	0.2	0.0	0.0	15.3	19.7	26.2	0.0	27.2			
LnGrp LOS	B	A	A	A	B	B	C	A	C			
Approach Vol, veh/h		1197			1470			141				
Approach Delay, s/veh		1.9			18.6			27.0				
Approach LOS		A			B			C				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		63.0			12.0	51.0		27.0				
Change Period (Y+Rc), s		6.0			5.0	6.0		5.0				
Max Green Setting (Gmax), s		57.0			13.0	39.0		22.0				
Max Q Clear Time (g_c+I1), s		2.0			6.7	25.9		4.7				
Green Ext Time (p_c), s		9.2			0.3	6.3		0.4				

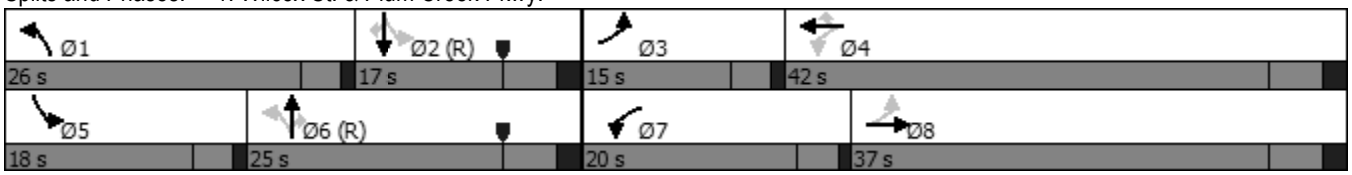
Intersection Summary	
HCM 6th Ctrl Delay	11.9
HCM 6th LOS	B

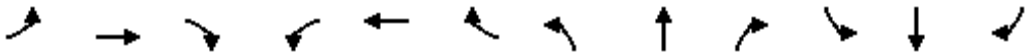
Notes
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	204	986	414	39	827	163	356	125	82	165	106	263
Future Volume (vph)	204	986	414	39	827	163	356	125	82	165	106	263
Turn Type	pm+pt	NA	Free	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		Free	4		4	6		6	2		2
Detector Phase	3	8		7	4	4	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	5.0	10.0	10.0	5.0	4.0	4.0
Minimum Split (s)	9.5	31.0		14.5	31.0	31.0	9.5	16.0	16.0	9.5	10.0	10.0
Total Split (s)	15.0	37.0		20.0	42.0	42.0	26.0	25.0	25.0	18.0	17.0	17.0
Total Split (%)	15.0%	37.0%		20.0%	42.0%	42.0%	26.0%	25.0%	25.0%	18.0%	17.0%	17.0%
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	2.0		1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	47.3	38.7	100.0	44.7	32.7	32.7	38.9	25.6	25.6	38.9	25.6	25.6
Actuated g/C Ratio	0.47	0.39	1.00	0.45	0.33	0.33	0.39	0.26	0.26	0.39	0.26	0.26
v/c Ratio	0.79	0.78	0.29	0.16	0.77	0.28	0.36	0.28	0.17	0.39	0.28	0.54

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 69 (69%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 27.5
Intersection Capacity Utilization 86.4%
Analysis Period (min) 15

Splits and Phases: 1: Wilcox St. & Plum Creek Pkwy.





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	222	1072	450	42	889	175	375	132	86	212	136	337
v/c Ratio	0.79	0.78	0.29	0.16	0.77	0.28	0.36	0.28	0.17	0.39	0.28	0.54
Control Delay	37.7	32.2	0.5	19.8	47.1	14.2	20.6	34.8	0.7	22.3	34.8	10.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.7	32.2	0.5	19.8	47.1	14.2	20.6	34.8	0.7	22.4	34.8	10.5
Queue Length 50th (ft)	72	320	0	18	304	23	82	72	0	92	74	23
Queue Length 95th (ft)	#172	405	0	m39	377	98	118	131	0	126	116	63
Internal Link Dist (ft)		553			473			812			658	
Turn Bay Length (ft)	280		250	185			190		195	130		130
Base Capacity (vph)	292	1369	1564	363	1274	681	1244	472	517	591	481	627
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	9	17	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.78	0.29	0.12	0.70	0.26	0.30	0.28	0.17	0.37	0.28	0.54

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	204	986	414	39	827	163	356	125	82	165	106	263
Future Volume (veh/h)	204	986	414	39	827	163	356	125	82	165	106	263
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1856	1856	1856	1885	1885	1885
Adj Flow Rate, veh/h	222	1072	0	42	889	175	375	132	86	212	136	337
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.95	0.95	0.95	0.78	0.78	0.78
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	1	1	1
Cap, veh/h	288	1218		226	1100	490	899	531	449	527	544	461
Arrive On Green	0.10	0.34	0.00	0.02	0.10	0.10	0.10	0.29	0.29	0.10	0.29	0.29
Sat Flow, veh/h	1781	3554	1585	1781	3554	1582	3428	1856	1571	1795	1885	1596
Grp Volume(v), veh/h	222	1072	0	42	889	175	375	132	86	212	136	337
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1582	1714	1856	1571	1795	1885	1596
Q Serve(g_s), s	8.2	28.4	0.0	1.6	24.5	10.3	7.5	5.5	4.1	8.2	5.5	19.0
Cycle Q Clear(g_c), s	8.2	28.4	0.0	1.6	24.5	10.3	7.5	5.5	4.1	8.2	5.5	19.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	288	1218		226	1100	490	899	531	449	527	544	461
V/C Ratio(X)	0.77	0.88		0.19	0.81	0.36	0.42	0.25	0.19	0.40	0.25	0.73
Avail Cap(c_a), veh/h	302	1218		388	1279	570	1312	531	449	595	544	461
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.88	0.88	0.88	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.6	30.9	0.0	24.4	42.0	35.6	21.4	27.4	27.0	21.4	27.3	32.1
Incr Delay (d2), s/veh	9.8	7.7	0.0	0.1	3.1	0.4	0.1	1.1	0.9	0.2	1.1	9.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	12.9	0.0	0.6	12.1	4.3	3.0	2.6	1.6	3.5	2.7	8.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.4	38.7	0.0	24.5	45.0	36.0	21.5	28.6	27.9	21.6	28.4	41.9
LnGrp LOS	C	D		C	D	D	C	C	C	C	C	D
Approach Vol, veh/h		1294	A		1106			593			685	
Approach Delay, s/veh		37.8			42.8			24.0			32.9	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	34.9	14.2	37.0	14.2	34.6	10.9	40.3
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	22.0	11.0	11.0	36.0	14.0	19.0	16.0	31.0
Max Q Clear Time (g_c+I1), s	9.5	21.0	10.2	26.5	10.2	7.5	3.6	30.4
Green Ext Time (p_c), s	0.4	0.0	0.0	4.5	0.1	1.0	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	36.2
HCM 6th LOS	D

Notes

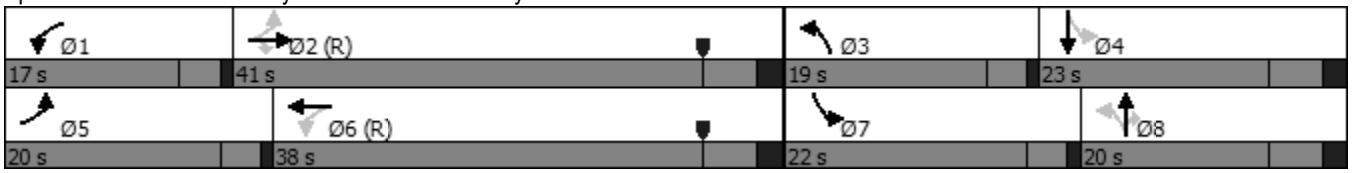
User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	136	992	165	129	651	199	113	219	222	123	184
Future Volume (vph)	136	992	165	129	651	199	113	219	222	123	184
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Free
Protected Phases	5	2		1	6	3	8		7	4	
Permitted Phases	2		2	6		8		8	4		Free
Detector Phase	5	2	2	1	6	3	8	8	7	4	
Switch Phase											
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0	3.0	5.0	5.0	3.0	5.0	
Minimum Split (s)	9.5	32.0	32.0	9.5	32.0	9.5	11.0	11.0	9.5	11.0	
Total Split (s)	20.0	41.0	41.0	17.0	38.0	19.0	20.0	20.0	22.0	23.0	
Total Split (%)	20.0%	41.0%	41.0%	17.0%	38.0%	19.0%	20.0%	20.0%	22.0%	23.0%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	6.0	4.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None	None	
Act Effct Green (s)	56.2	46.3	46.3	56.0	46.2	26.2	11.2	11.2	29.6	12.9	100.0
Actuated g/C Ratio	0.56	0.46	0.46	0.56	0.46	0.26	0.11	0.11	0.30	0.13	1.00
v/c Ratio	0.41	0.65	0.23	0.48	0.53	0.57	0.61	0.63	0.61	0.58	0.13

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 60 (60%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.65
Intersection Signal Delay: 20.5
Intersection Capacity Utilization 70.1%
Analysis Period (min) 15

Splits and Phases: 2: Perry St. & Plum Creek Pkwy.





Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	148	1078	179	136	864	226	128	249	255	141	211
v/c Ratio	0.41	0.65	0.23	0.48	0.53	0.57	0.61	0.63	0.61	0.58	0.13
Control Delay	7.0	19.1	5.9	20.1	18.0	31.6	54.4	12.8	32.6	49.8	0.2
Queue Delay	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.0	19.5	5.9	20.1	18.0	31.6	54.4	12.8	32.6	49.8	0.2
Queue Length 50th (ft)	6	326	25	35	126	110	79	0	126	86	0
Queue Length 95th (ft)	m21	439	m68	m89	193	157	132	64	174	136	0
Internal Link Dist (ft)		473			1330		455			497	
Turn Bay Length (ft)	170		70	100		185		65	120		120
Base Capacity (vph)	485	1653	787	369	1617	430	263	435	464	323	1615
Starvation Cap Reductn	0	178	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.73	0.23	0.37	0.53	0.53	0.49	0.57	0.55	0.44	0.13

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	136	992	165	129	651	170	199	113	219	222	123	184
Future Volume (veh/h)	136	992	165	129	651	170	199	113	219	222	123	184
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	148	1078	179	136	685	179	226	128	249	255	141	0
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.88	0.88	0.88	0.87	0.87	0.87
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	0	0	0
Cap, veh/h	454	1653	736	258	1289	337	405	264	223	403	291	
Arrive On Green	0.02	0.15	0.15	0.12	0.92	0.92	0.13	0.14	0.14	0.14	0.15	0.00
Sat Flow, veh/h	1795	3582	1596	1795	2809	734	1795	1885	1594	1810	1900	1610
Grp Volume(v), veh/h	148	1078	179	136	437	427	226	128	249	255	141	0
Grp Sat Flow(s),veh/h/ln	1795	1791	1596	1795	1791	1752	1795	1885	1594	1810	1900	1610
Q Serve(g_s), s	4.2	28.3	9.9	4.0	3.9	3.9	10.6	6.3	14.0	11.8	6.8	0.0
Cycle Q Clear(g_c), s	4.2	28.3	9.9	4.0	3.9	3.9	10.6	6.3	14.0	11.8	6.8	0.0
Prop In Lane	1.00		1.00	1.00		0.42	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	454	1653	736	258	822	804	405	264	223	403	291	
V/C Ratio(X)	0.33	0.65	0.24	0.53	0.53	0.53	0.56	0.48	1.12	0.63	0.48	
Avail Cap(c_a), veh/h	630	1653	736	385	822	804	448	264	223	477	323	
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.67	0.67	0.67	0.89	0.89	0.89	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	13.2	34.8	27.0	16.9	2.4	2.4	31.0	39.7	43.0	30.5	38.7	0.0
Incr Delay (d2), s/veh	0.1	1.4	0.5	0.6	2.2	2.2	0.5	1.0	94.8	1.1	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	13.8	4.2	1.4	1.3	1.3	4.5	2.9	11.3	5.1	3.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.3	36.2	27.5	17.5	4.6	4.6	31.5	40.7	137.8	31.6	39.7	0.0
LnGrp LOS	B	D	C	B	A	A	C	D	F	C	D	
Approach Vol, veh/h		1405			1000			603			396	A
Approach Delay, s/veh		32.7			6.4			77.3			34.5	
Approach LOS		C			A			E			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.9	52.1	16.6	21.3	10.2	51.9	17.9	20.0
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	13.0	35.0	15.0	17.0	16.0	32.0	18.0	14.0
Max Q Clear Time (g_c+I1), s	6.0	30.3	12.6	8.8	6.2	5.9	13.8	16.0
Green Ext Time (p_c), s	0.1	3.0	0.1	0.3	0.1	5.9	0.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	33.1
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

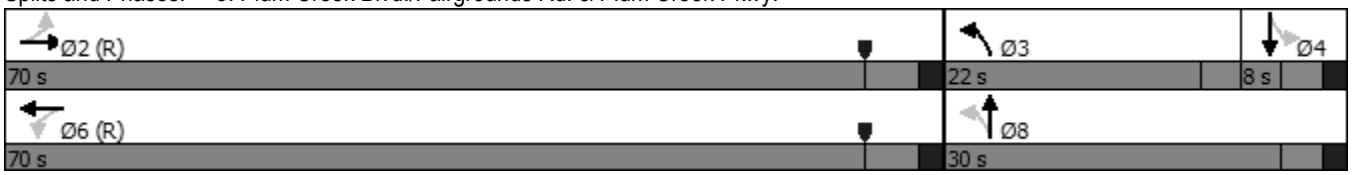
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

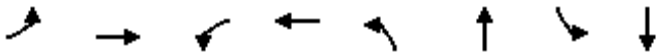
Twin Mesa Metropolitan District New Service Plan
SV2023-003
Planning Commission Supplemental Memo Page 261 of 1222

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	27	1091	28	722	221	0	4	1
Future Volume (vph)	27	1091	28	722	221	0	4	1
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases		2		6	3	8		4
Permitted Phases	2		6		8		4	
Detector Phase	2	2	6	6	3	8	4	4
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0	2.0	2.0
Minimum Split (s)	33.0	33.0	28.0	28.0	14.5	10.0	7.0	7.0
Total Split (s)	70.0	70.0	70.0	70.0	22.0	30.0	8.0	8.0
Total Split (%)	70.0%	70.0%	70.0%	70.0%	22.0%	30.0%	8.0%	8.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	3.0	5.0	5.0	5.0
Lead/Lag					Lead		Lag	Lag
Lead-Lag Optimize?					Yes		Yes	Yes
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	Max	Max	Max
Act Effct Green (s)	64.0	64.0	64.0	64.0	27.0	25.0	6.2	6.2
Actuated g/C Ratio	0.64	0.64	0.64	0.64	0.27	0.25	0.06	0.06
v/c Ratio	0.09	0.72	0.31	0.39	0.66	0.07	0.08	0.12

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 85 (85%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 12.0
Intersection Capacity Utilization 68.4%
Analysis Period (min) 15

Splits and Phases: 3: Plum Creek Blvd./Fairgrounds Rd. & Plum Creek Pkwy.





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	31	1598	35	893	257	31	7	14
v/c Ratio	0.09	0.72	0.31	0.39	0.66	0.07	0.08	0.12
Control Delay	5.3	8.9	17.2	9.3	40.3	0.3	49.2	28.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.3	8.9	17.2	9.3	40.3	0.3	49.2	28.6
Queue Length 50th (ft)	5	126	9	131	140	0	4	1
Queue Length 95th (ft)	m8	192	27	145	208	0	13	12
Internal Link Dist (ft)		1330		637		613		434
Turn Bay Length (ft)	70		55				110	
Base Capacity (vph)	343	2223	112	2264	415	461	86	113
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.72	0.31	0.39	0.62	0.07	0.08	0.12

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	1091	315	28	722	2	221	0	27	4	1	7
Future Volume (veh/h)	27	1091	315	28	722	2	221	0	27	4	1	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1870	1870	1870	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	31	1240	358	35	891	2	257	0	31	7	2	12
Peak Hour Factor	0.88	0.88	0.88	0.81	0.81	0.81	0.86	0.86	0.86	0.60	0.60	0.60
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	0	0	0
Cap, veh/h	400	1763	499	276	2328	5	428	0	399	172	17	101
Arrive On Green	1.00	1.00	1.00	0.64	0.64	0.64	0.15	0.00	0.25	0.07	0.07	0.07
Sat Flow, veh/h	628	2755	779	318	3638	8	1795	0	1598	1400	235	1411
Grp Volume(v), veh/h	31	797	801	35	435	458	257	0	31	7	0	14
Grp Sat Flow(s),veh/h/ln	628	1791	1743	318	1777	1869	1795	0	1598	1400	0	1646
Q Serve(g_s), s	1.0	0.0	0.0	4.4	11.7	11.7	12.7	0.0	1.5	0.5	0.0	0.8
Cycle Q Clear(g_c), s	12.7	0.0	0.0	4.4	11.7	11.7	12.7	0.0	1.5	0.5	0.0	0.8
Prop In Lane	1.00		0.45	1.00		0.00	1.00		1.00	1.00		0.86
Lane Grp Cap(c), veh/h	400	1146	1115	276	1137	1196	428	0	399	172	0	118
V/C Ratio(X)	0.08	0.70	0.72	0.13	0.38	0.38	0.60	0.00	0.08	0.04	0.00	0.12
Avail Cap(c_a), veh/h	400	1146	1115	276	1137	1196	503	0	399	172	0	118
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.72	0.72	0.72	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	1.2	0.0	0.0	7.3	8.6	8.6	33.8	0.0	28.7	43.3	0.0	43.5
Incr Delay (d2), s/veh	0.3	2.5	2.9	0.9	1.0	0.9	0.6	0.0	0.4	0.4	0.0	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.8	0.9	0.3	4.3	4.5	5.5	0.0	0.6	0.2	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	1.4	2.5	2.9	8.2	9.6	9.5	34.4	0.0	29.1	43.8	0.0	45.5
LnGrp LOS	A	A	A	A	A	A	C	A	C	D	A	D
Approach Vol, veh/h		1629			928			288			21	
Approach Delay, s/veh		2.7			9.5			33.8			44.9	
Approach LOS		A			A			C			D	

Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		70.0	17.8	12.2		70.0		30.0				
Change Period (Y+Rc), s		6.0	3.0	5.0		6.0		5.0				
Max Green Setting (Gmax), s		64.0	19.0	3.0		64.0		25.0				
Max Q Clear Time (g_c+I1), s		14.7	14.7	2.8		13.7		3.5				
Green Ext Time (p_c), s		18.8	0.2	0.0		7.7		0.1				

Intersection Summary	
HCM 6th Ctrl Delay	8.3
HCM 6th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑	↗	↰	↑
Traffic Volume (veh/h)	0	0	207	1	145	292
Future Volume (Veh/h)	0	0	207	1	145	292
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.88	0.88	0.88	0.88	0.81	0.81
Hourly flow rate (vph)	0	0	235	1	179	360
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	953	235			236	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	953	235			236	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			87	
cM capacity (veh/h)	249	804			1337	

Direction, Lane #	NB 1	NB 2	SB 1	SB 2
Volume Total	235	1	179	360
Volume Left	0	0	179	0
Volume Right	0	1	0	0
cSH	1700	1700	1337	1700
Volume to Capacity	0.14	0.00	0.13	0.21
Queue Length 95th (ft)	0	0	12	0
Control Delay (s)	0.0	0.0	8.1	0.0
Lane LOS			A	
Approach Delay (s)	0.0		2.7	
Approach LOS				

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	25.6%	ICU Level of Service	A
Analysis Period (min)	15		

Twin Mesa Metropolitan District New Service Plan
SV2023-003
Planning Commission Supplemental Memo Page 265 of 1222

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	316	26	1	243	13	57	6	2	25	2	23
Future Vol, veh/h	30	316	26	1	243	13	57	6	2	25	2	23
Conflicting Peds, #/hr	3	0	0	0	0	3	3	0	2	2	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	450	-	315	295	-	230	270	-	120	185	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	89	89	89	68	68	68	83	83	83
Heavy Vehicles, %	1	1	1	2	2	2	0	0	0	0	0	0
Mvmt Flow	33	351	29	1	273	15	84	9	3	30	2	28

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	291	0	0	380	0	0	560	710	178	526	724	143
Stage 1	-	-	-	-	-	-	417	417	-	278	278	-
Stage 2	-	-	-	-	-	-	143	293	-	248	446	-
Critical Hdwy	4.12	-	-	4.14	-	-	7.5	6.5	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.21	-	-	2.22	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1275	-	-	1175	-	-	415	361	841	439	354	885
Stage 1	-	-	-	-	-	-	589	595	-	711	684	-
Stage 2	-	-	-	-	-	-	851	674	-	740	577	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1271	-	-	1175	-	-	391	350	839	418	343	880
Mov Cap-2 Maneuver	-	-	-	-	-	-	391	350	-	418	343	-
Stage 1	-	-	-	-	-	-	574	580	-	690	681	-
Stage 2	-	-	-	-	-	-	818	671	-	706	562	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0	16.4	12
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	391	350	839	1271	-	-	1175	-	-	418	343	880
HCM Lane V/C Ratio	0.214	0.025	0.004	0.026	-	-	0.001	-	-	0.072	0.007	0.031
HCM Control Delay (s)	16.7	15.6	9.3	7.9	-	-	8.1	-	-	14.3	15.6	9.2
HCM Lane LOS	C	C	A	A	-	-	A	-	-	B	C	A
HCM 95th %tile Q(veh)	0.8	0.1	0	0.1	-	-	0	-	-	0.2	0	0.1

Intersection	
Int Delay, s/veh	7.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	33	290	104	34	332	126
Future Vol, veh/h	33	290	104	34	332	126
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	0	0	-	-	545	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	77	77	95	95
Heavy Vehicles, %	3	3	1	1	2	2
Mvmt Flow	38	333	135	44	349	133

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	988	157	0	0	179	0
Stage 1	157	-	-	-	-	-
Stage 2	831	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.12	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.218	-
Pot Cap-1 Maneuver	273	886	-	-	1397	-
Stage 1	869	-	-	-	-	-
Stage 2	426	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	205	886	-	-	1397	-
Mov Cap-2 Maneuver	205	-	-	-	-	-
Stage 1	869	-	-	-	-	-
Stage 2	320	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13	0	6.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	205	886	1397	-
HCM Lane V/C Ratio	-	-	0.185	0.376	0.25	-
HCM Control Delay (s)	-	-	26.5	11.5	8.4	-
HCM Lane LOS	-	-	D	B	A	-
HCM 95th %tile Q(veh)	-	-	0.7	1.8	1	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	12	0	4	201	273	16
Future Vol, veh/h	12	0	4	201	273	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	60	60	87	87	84	84
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	20	0	5	231	325	19

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	576	335	344	0	-	0
Stage 1	335	-	-	-	-	-
Stage 2	241	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.11	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.209	-	-	-
Pot Cap-1 Maneuver	482	712	1221	-	-	-
Stage 1	729	-	-	-	-	-
Stage 2	804	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	480	712	1221	-	-	-
Mov Cap-2 Maneuver	480	-	-	-	-	-
Stage 1	725	-	-	-	-	-
Stage 2	804	-	-	-	-	-

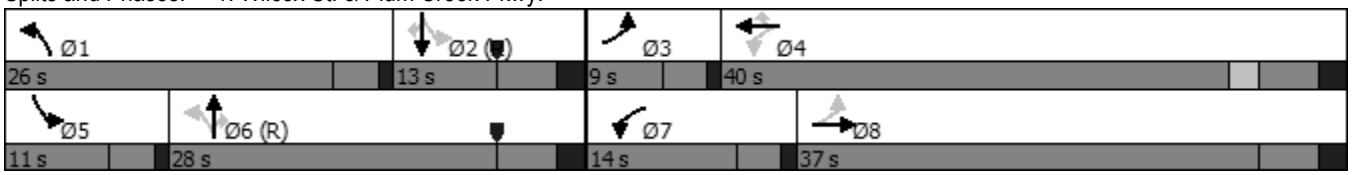
Approach	EB	NB	SB
HCM Control Delay, s	12.8	0.2	0
HCM LOS	B		

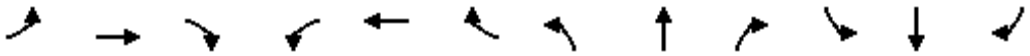
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1221	-	480	-	-
HCM Lane V/C Ratio	0.004	-	0.042	-	-
HCM Control Delay (s)	8	0	12.8	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	178	814	433	72	832	154	342	115	66	153	152	220
Future Volume (vph)	178	814	433	72	832	154	342	115	66	153	152	220
Turn Type	pm+pt	NA	Free	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		Free	4		4	6		6	2		2
Detector Phase	3	8		7	4	4	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	5.0	10.0	10.0	5.0	4.0	4.0
Minimum Split (s)	9.5	31.0		14.5	31.0	31.0	9.5	16.0	16.0	9.5	10.0	10.0
Total Split (s)	9.0	37.0		14.0	40.0	40.0	26.0	28.0	28.0	11.0	13.0	13.0
Total Split (%)	10.0%	41.1%		15.6%	44.4%	44.4%	28.9%	31.1%	31.1%	12.2%	14.4%	14.4%
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	2.0		1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	36.2	30.2	90.0	43.4	32.4	32.4	36.8	25.0	25.0	31.4	21.8	21.8
Actuated g/C Ratio	0.40	0.34	1.00	0.48	0.36	0.36	0.41	0.28	0.28	0.35	0.24	0.24
v/c Ratio	0.92	0.72	0.29	0.27	0.75	0.26	0.42	0.26	0.13	0.38	0.41	0.48

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 32 (36%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 24.0
Intersection Capacity Utilization 83.0%
Analysis Period (min) 15

Splits and Phases: 1: Wilcox St. & Plum Creek Pkwy.





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	187	857	456	84	967	179	389	131	75	184	183	265
v/c Ratio	0.92	0.72	0.29	0.27	0.75	0.26	0.42	0.26	0.13	0.38	0.41	0.48
Control Delay	64.5	30.4	0.5	14.3	30.3	9.6	19.0	28.5	0.5	22.2	34.6	10.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.5	30.4	0.5	14.3	30.3	9.6	19.0	28.5	0.5	22.2	34.6	10.3
Queue Length 50th (ft)	57	227	0	34	278	34	73	61	0	67	90	16
Queue Length 95th (ft)	#146	287	0	m51	323	77	108	108	0	108	152	69
Internal Link Dist (ft)		553			473			812			658	
Turn Bay Length (ft)	280		250	185			190		195	130		130
Base Capacity (vph)	204	1242	1564	311	1429	734	1166	511	560	482	450	557
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.69	0.29	0.27	0.68	0.24	0.33	0.26	0.13	0.38	0.41	0.48

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Twin Mesa Metropolitan District New Service Plan
SV2023-003
Planning Commission Supplemental Memo Page 270 of 1222

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	178	814	433	72	832	154	342	115	66	153	152	220
Future Volume (veh/h)	178	814	433	72	832	154	342	115	66	153	152	220
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1885	1885	1885	1856	1856	1856	1870	1870	1870
Adj Flow Rate, veh/h	187	857	0	84	967	179	389	131	75	184	183	265
Peak Hour Factor	0.95	0.95	0.95	0.86	0.86	0.86	0.88	0.88	0.88	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2	1	1	1	3	3	3	2	2	2
Cap, veh/h	214	1040		299	1198	534	892	575	486	521	529	447
Arrive On Green	0.06	0.29	0.00	0.03	0.11	0.11	0.10	0.31	0.31	0.08	0.28	0.28
Sat Flow, veh/h	1781	3554	1585	1795	3582	1595	3428	1856	1569	1781	1870	1582
Grp Volume(v), veh/h	187	857	0	84	967	179	389	131	75	184	183	265
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1795	1791	1595	1714	1856	1569	1781	1870	1582
Q Serve(g_s), s	5.0	20.2	0.0	2.7	23.7	9.3	7.0	4.7	3.1	6.6	7.0	13.0
Cycle Q Clear(g_c), s	5.0	20.2	0.0	2.7	23.7	9.3	7.0	4.7	3.1	6.6	7.0	13.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	214	1040		299	1198	534	892	575	486	521	529	447
V/C Ratio(X)	0.88	0.82		0.28	0.81	0.34	0.44	0.23	0.15	0.35	0.35	0.59
Avail Cap(c_a), veh/h	214	1224		323	1353	603	1370	575	486	521	529	447
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.81	0.81	0.81	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.2	29.7	0.0	21.0	37.2	30.8	19.1	23.1	22.5	20.6	25.7	27.8
Incr Delay (d2), s/veh	29.7	4.1	0.0	0.2	2.7	0.3	0.1	0.9	0.7	0.2	1.8	5.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	8.8	0.0	1.1	11.7	3.8	2.8	2.2	1.2	2.7	3.4	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.9	33.8	0.0	21.2	39.9	31.1	19.2	24.0	23.2	20.7	27.4	33.5
LnGrp LOS	E	C		C	D	C	B	C	C	C	C	C
Approach Vol, veh/h		1044	A		1230			595			632	
Approach Delay, s/veh		38.3			37.4			20.8			28.0	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.4	31.5	9.0	36.1	11.0	33.9	12.8	32.3
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	22.0	7.0	5.0	34.0	7.0	22.0	10.0	31.0
Max Q Clear Time (g_c+I1), s	9.0	15.0	7.0	25.7	8.6	6.7	4.7	22.2
Green Ext Time (p_c), s	0.5	0.0	0.0	4.4	0.0	1.2	0.0	3.7

Intersection Summary	
HCM 6th Ctrl Delay	33.1
HCM 6th LOS	C

Notes

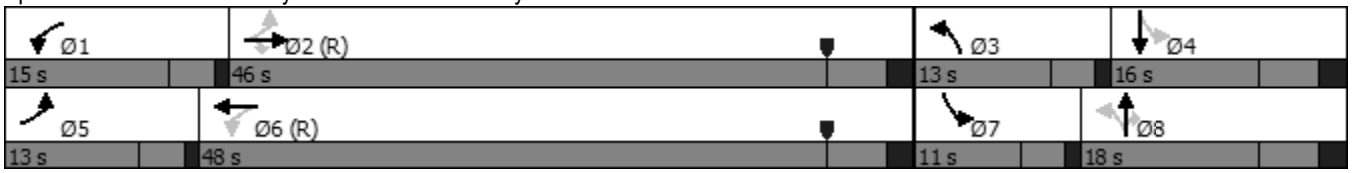
User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	167	743	142	143	751	187	109	139	181	116	183
Future Volume (vph)	167	743	142	143	751	187	109	139	181	116	183
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Free
Protected Phases	5	2		1	6	3	8		7	4	
Permitted Phases	2		2	6		8		8	4		Free
Detector Phase	5	2	2	1	6	3	8	8	7	4	
Switch Phase											
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0	3.0	5.0	5.0	3.0	5.0	
Minimum Split (s)	9.5	32.0	32.0	9.5	32.0	9.5	11.0	11.0	9.5	11.0	
Total Split (s)	13.0	46.0	46.0	15.0	48.0	13.0	18.0	18.0	11.0	16.0	
Total Split (%)	14.4%	51.1%	51.1%	16.7%	53.3%	14.4%	20.0%	20.0%	12.2%	17.8%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	6.0	4.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None	None	
Act Effct Green (s)	54.1	44.9	44.9	54.3	45.0	21.5	10.8	10.8	18.1	9.1	90.0
Actuated g/C Ratio	0.60	0.50	0.50	0.60	0.50	0.24	0.12	0.12	0.20	0.10	1.00
v/c Ratio	0.54	0.43	0.17	0.37	0.62	0.62	0.52	0.47	0.65	0.64	0.12

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 41 (46%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.65
Intersection Signal Delay: 25.0
Intersection Capacity Utilization 67.0%
Analysis Period (min) 15

Splits and Phases: 2: Perry St. & Plum Creek Pkwy.





Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	170	758	145	166	1089	203	118	151	193	123	195
v/c Ratio	0.54	0.43	0.17	0.37	0.62	0.62	0.52	0.47	0.65	0.64	0.12
Control Delay	11.1	19.5	9.3	16.0	30.6	36.9	45.6	11.6	39.4	54.5	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.1	19.5	9.3	16.0	30.6	36.9	45.6	11.6	39.4	54.5	0.2
Queue Length 50th (ft)	43	203	40	58	273	94	63	0	89	68	0
Queue Length 95th (ft)	m55	270	m80	103	335	158	117	53	150	#126	0
Internal Link Dist (ft)		473			1330		455			497	
Turn Bay Length (ft)	170		70	100		185		65	120		120
Base Capacity (vph)	350	1782	845	517	1747	331	250	340	299	211	1595
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.43	0.17	0.32	0.62	0.61	0.47	0.44	0.65	0.58	0.12

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	167	743	142	143	751	186	187	109	139	181	116	183
Future Volume (veh/h)	167	743	142	143	751	186	187	109	139	181	116	183
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	0.99		0.99	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	170	758	145	166	873	216	203	118	151	193	123	0
Peak Hour Factor	0.98	0.98	0.98	0.86	0.86	0.86	0.92	0.92	0.92	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	0	0	0
Cap, veh/h	465	1849	823	402	1465	362	302	222	187	287	182	
Arrive On Green	0.02	0.17	0.17	0.13	1.00	1.00	0.10	0.12	0.12	0.08	0.10	0.00
Sat Flow, veh/h	1795	3582	1595	1795	2831	700	1795	1885	1585	1810	1900	1610
Grp Volume(v), veh/h	170	758	145	166	552	537	203	118	151	193	123	0
Grp Sat Flow(s),veh/h/ln	1795	1791	1595	1795	1791	1740	1795	1885	1585	1810	1900	1610
Q Serve(g_s), s	3.9	17.0	7.0	4.0	0.0	0.0	9.0	5.3	8.4	7.0	5.6	0.0
Cycle Q Clear(g_c), s	3.9	17.0	7.0	4.0	0.0	0.0	9.0	5.3	8.4	7.0	5.6	0.0
Prop In Lane	1.00		1.00	1.00		0.40	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	465	1849	823	402	927	900	302	222	187	287	182	
V/C Ratio(X)	0.37	0.41	0.18	0.41	0.60	0.60	0.67	0.53	0.81	0.67	0.68	
Avail Cap(c_a), veh/h	529	1849	823	503	927	900	302	251	211	287	211	
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.74	0.74	0.74	0.76	0.76	0.76	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	9.1	25.1	21.0	10.1	0.0	0.0	33.2	37.3	38.7	35.3	39.3	0.0
Incr Delay (d2), s/veh	0.1	0.5	0.3	0.2	2.2	2.2	4.7	1.5	17.5	4.9	5.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	8.2	2.7	1.3	0.6	0.6	4.3	2.5	4.1	4.4	2.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.3	25.6	21.3	10.3	2.2	2.2	37.9	38.8	56.2	40.3	45.3	0.0
LnGrp LOS	A	C	C	B	A	A	D	D	E	D	D	
Approach Vol, veh/h		1073			1255			472			316	A
Approach Delay, s/veh		22.4			3.3			44.0			42.2	
Approach LOS		C			A			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.9	52.5	13.0	14.6	9.8	52.6	11.0	16.6
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	11.0	40.0	9.0	10.0	9.0	42.0	7.0	12.0
Max Q Clear Time (g_c+I1), s	6.0	19.0	11.0	7.6	5.9	2.0	9.0	10.4
Green Ext Time (p_c), s	0.1	5.7	0.0	0.1	0.0	8.9	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	20.0
HCM 6th LOS	B

Notes

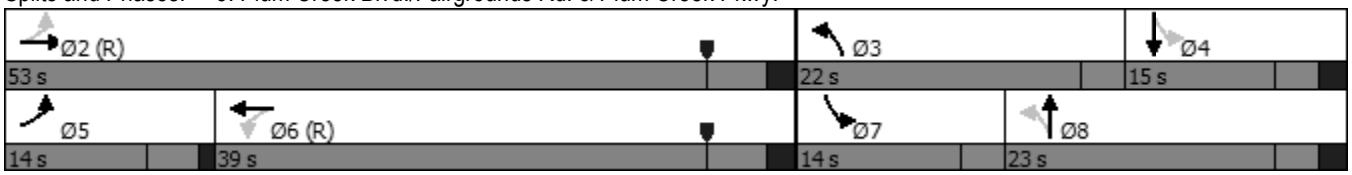
User approved pedestrian interval to be less than phase max green.

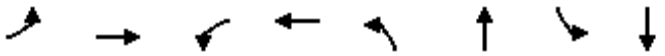
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	89	742	35	792	249	0	5	3
Future Volume (vph)	89	742	35	792	249	0	5	3
Turn Type	pm+pt	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases	5	2		6	3	8	7	4
Permitted Phases	2		6		8		4	
Detector Phase	5	2	6	6	3	8	7	4
Switch Phase								
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0	3.0	2.0
Minimum Split (s)	9.5	33.0	28.0	28.0	14.5	10.0	9.5	7.0
Total Split (s)	14.0	53.0	39.0	39.0	22.0	23.0	14.0	15.0
Total Split (%)	15.6%	58.9%	43.3%	43.3%	24.4%	25.6%	15.6%	16.7%
Yellow Time (s)	3.5	4.0	4.0	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	6.0	6.0	3.0	5.0	3.0	5.0
Lead/Lag	Lead		Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	C-Max	None	Max	None	Max
Act Effct Green (s)	48.5	47.0	36.8	36.8	34.0	30.3	21.0	14.3
Actuated g/C Ratio	0.54	0.52	0.41	0.41	0.38	0.34	0.23	0.16
v/c Ratio	0.35	0.59	0.22	0.64	0.53	0.06	0.02	0.17

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 44 (49%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.64
Intersection Signal Delay: 16.7
Intersection Capacity Utilization 71.0%
Analysis Period (min) 15

Splits and Phases: 3: Plum Creek Blvd./Fairgrounds Rd. & Plum Creek Pkwy.





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	98	1070	41	929	283	44	6	50
v/c Ratio	0.35	0.59	0.22	0.64	0.53	0.06	0.02	0.17
Control Delay	15.2	8.4	23.6	24.7	24.8	0.2	19.2	14.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.2	8.4	23.6	24.7	24.8	0.2	19.2	14.1
Queue Length 50th (ft)	15	77	16	226	117	0	2	2
Queue Length 95th (ft)	m54	190	42	285	181	0	9	31
Internal Link Dist (ft)		1330		637		613		434
Turn Bay Length (ft)	70		55				110	
Base Capacity (vph)	309	1821	183	1459	569	748	470	298
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.59	0.22	0.64	0.50	0.06	0.01	0.17

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	742	232	35	792	7	249	0	39	5	3	39
Future Volume (veh/h)	89	742	232	35	792	7	249	0	39	5	3	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	98	815	255	41	921	8	283	0	44	6	4	46
Peak Hour Factor	0.91	0.91	0.91	0.86	0.86	0.86	0.88	0.88	0.88	0.84	0.84	0.84
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	0	0	0
Cap, veh/h	352	1546	483	332	1730	15	475	0	421	242	14	166
Arrive On Green	0.10	1.00	1.00	0.48	0.48	0.48	0.16	0.00	0.26	0.00	0.11	0.11
Sat Flow, veh/h	1795	2683	839	531	3639	32	1795	0	1596	1810	130	1496
Grp Volume(v), veh/h	98	544	526	41	453	476	283	0	44	6	0	50
Grp Sat Flow(s),veh/h/ln	1795	1791	1731	531	1791	1879	1795	0	1596	1810	0	1626
Q Serve(g_s), s	2.4	0.0	0.0	4.0	16.0	16.0	11.9	0.0	1.9	0.3	0.0	2.5
Cycle Q Clear(g_c), s	2.4	0.0	0.0	4.0	16.0	16.0	11.9	0.0	1.9	0.3	0.0	2.5
Prop In Lane	1.00		0.48	1.00		0.02	1.00		1.00	1.00		0.92
Lane Grp Cap(c), veh/h	352	1032	997	332	851	893	475	0	421	242	0	181
V/C Ratio(X)	0.28	0.53	0.53	0.12	0.53	0.53	0.60	0.00	0.10	0.02	0.00	0.28
Avail Cap(c_a), veh/h	450	1032	997	332	851	893	572	0	421	455	0	181
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.88	0.88	0.88	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.2	0.0	0.0	13.4	16.6	16.6	27.0	0.0	25.1	35.3	0.0	36.7
Incr Delay (d2), s/veh	0.4	1.7	1.8	0.8	2.4	2.3	0.4	0.0	0.5	0.0	0.0	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.5	0.5	0.5	6.6	6.9	5.0	0.0	0.8	0.1	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.6	1.7	1.8	14.2	19.0	18.9	27.5	0.0	25.6	35.3	0.0	40.5
LnGrp LOS	B	A	A	B	B	B	C	A	C	D	A	D
Approach Vol, veh/h		1168			970			327			56	
Approach Delay, s/veh		2.6			18.7			27.2			39.9	
Approach LOS		A			B			C			D	

Timer - Assigned Phs	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	57.9	17.1	15.0	9.1	48.8	3.4	28.7
Change Period (Y+Rc), s	6.0	3.0	5.0	4.5	6.0	3.0	5.0
Max Green Setting (Gmax), s	47.0	19.0	10.0	9.5	33.0	11.0	18.0
Max Q Clear Time (g_c+I1), s	2.0	13.9	4.5	4.4	18.0	2.3	3.9
Green Ext Time (p_c), s	8.8	0.2	0.0	0.1	5.5	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	12.8
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑	↱	↰	↑
Traffic Volume (veh/h)	0	0	255	3	59	648
Future Volume (Veh/h)	0	0	255	3	59	648
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.87	0.87	0.82	0.82
Hourly flow rate (vph)	0	0	293	3	72	790
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1227	293			296	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1227	293			296	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			94	
cM capacity (veh/h)	186	746			1271	

Direction, Lane #	NB 1	NB 2	SB 1	SB 2
Volume Total	293	3	72	790
Volume Left	0	0	72	0
Volume Right	0	3	0	0
cSH	1700	1700	1271	1700
Volume to Capacity	0.17	0.00	0.06	0.46
Queue Length 95th (ft)	0	0	4	0
Control Delay (s)	0.0	0.0	8.0	0.0
Lane LOS			A	
Approach Delay (s)	0.0		0.7	
Approach LOS				

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	37.4%	ICU Level of Service	A
Analysis Period (min)	15		

Twin Mesa Metropolitan District New Service Plan
SV2023-003
Planning Commission Supplemental Memo Page 278 of 1222

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	31	209	35	3	255	11	35	3	5	23	5	18
Future Vol, veh/h	31	209	35	3	255	11	35	3	5	23	5	18
Conflicting Peds, #/hr	7	0	0	0	0	7	0	0	3	3	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	450	-	315	295	-	230	270	-	120	185	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	92	92	92	63	63	63	68	68	68
Heavy Vehicles, %	1	1	1	2	2	2	7	7	7	2	2	2
Mvmt Flow	35	238	40	3	277	12	56	5	8	34	7	26

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	296	0	0	278	0	0	456	610	122	485	638	146
Stage 1	-	-	-	-	-	-	308	308	-	290	290	-
Stage 2	-	-	-	-	-	-	148	302	-	195	348	-
Critical Hdwy	4.12	-	-	4.14	-	-	7.64	6.64	7.04	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.64	5.64	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.64	5.64	-	6.54	5.54	-
Follow-up Hdwy	2.21	-	-	2.22	-	-	3.57	4.07	3.37	3.52	4.02	3.32
Pot Cap-1 Maneuver	1270	-	-	1282	-	-	476	397	890	465	393	875
Stage 1	-	-	-	-	-	-	663	646	-	694	671	-
Stage 2	-	-	-	-	-	-	825	651	-	788	633	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1262	-	-	1282	-	-	444	382	887	442	378	869
Mov Cap-2 Maneuver	-	-	-	-	-	-	444	382	-	442	378	-
Stage 1	-	-	-	-	-	-	644	628	-	670	665	-
Stage 2	-	-	-	-	-	-	789	645	-	751	615	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0.1	13.7	12.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	444	382	887	1262	-	-	1282	-	-	442	378	869
HCM Lane V/C Ratio	0.125	0.012	0.009	0.028	-	-	0.003	-	-	0.077	0.019	0.03
HCM Control Delay (s)	14.3	14.5	9.1	7.9	-	-	7.8	-	-	13.8	14.7	9.3
HCM Lane LOS	B	B	A	A	-	-	A	-	-	B	B	A
HCM 95th %tile Q(veh)	0.4	0	0	0.1	-	-	0	-	-	0.2	0.1	0.1

Intersection	
Int Delay, s/veh	5.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	35	239	128	32	219	301
Future Vol, veh/h	35	239	128	32	219	301
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	0	0	-	-	545	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	89	89	86	86
Heavy Vehicles, %	3	3	7	7	2	2
Mvmt Flow	41	281	144	36	255	350

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1022	162	0	0	180	0
Stage 1	162	-	-	-	-	-
Stage 2	860	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.12	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.218	-
Pot Cap-1 Maneuver	260	880	-	-	1396	-
Stage 1	865	-	-	-	-	-
Stage 2	413	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	212	880	-	-	1396	-
Mov Cap-2 Maneuver	212	-	-	-	-	-
Stage 1	865	-	-	-	-	-
Stage 2	337	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.9	0	3.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	212	880	1396	-
HCM Lane V/C Ratio	-	-	0.194	0.32	0.182	-
HCM Control Delay (s)	-	-	26	11	8.2	-
HCM Lane LOS	-	-	D	B	A	-
HCM 95th %tile Q(veh)	-	-	0.7	1.4	0.7	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	2	1	242	640	13
Future Vol, veh/h	11	2	1	242	640	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	89	89	95	95
Heavy Vehicles, %	3	3	3	3	1	1
Mvmt Flow	14	2	1	272	674	14

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	955	681	688	0	-	0
Stage 1	681	-	-	-	-	-
Stage 2	274	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	285	449	901	-	-	-
Stage 1	501	-	-	-	-	-
Stage 2	770	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	285	449	901	-	-	-
Mov Cap-2 Maneuver	285	-	-	-	-	-
Stage 1	500	-	-	-	-	-
Stage 2	770	-	-	-	-	-

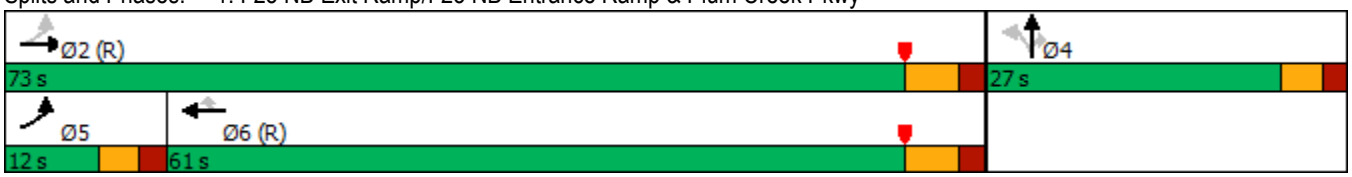
Approach	EB	NB	SB
HCM Control Delay, s	17.6	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	901	-	302	-	-
HCM Lane V/C Ratio	0.001	-	0.053	-	-
HCM Control Delay (s)	9	0	17.6	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	103	1385	490	880	31	3	164
Future Volume (vph)	103	1385	490	880	31	3	164
Turn Type	pm+pt	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6			4	
Permitted Phases	2			6	4		4
Detector Phase	5	2	6	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0	5.0
Minimum Split (s)	10.0	31.0	24.0	24.0	40.0	40.0	40.0
Total Split (s)	12.0	73.0	61.0	61.0	27.0	27.0	27.0
Total Split (%)	12.0%	73.0%	61.0%	61.0%	27.0%	27.0%	27.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max
Act Effct Green (s)	68.0	67.0	57.4	57.4	22.0	22.0	22.0
Actuated g/C Ratio	0.68	0.67	0.57	0.57	0.22	0.22	0.22
v/c Ratio	0.29	0.41	0.48	0.44	0.08	0.23	0.22

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 83 (83%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.48
Intersection Signal Delay: 5.8
Intersection Capacity Utilization 59.5%
Analysis Period (min) 15

Splits and Phases: 1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy





Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	105	1413	949	449	29	86	87
v/c Ratio	0.29	0.41	0.48	0.44	0.08	0.23	0.22
Control Delay	4.1	3.5	8.6	2.6	31.8	13.6	8.6
Queue Delay	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Total Delay	4.1	3.8	8.6	2.6	31.8	13.6	8.6
Queue Length 50th (ft)	15	79	114	0	15	12	0
Queue Length 95th (ft)	m20	86	165	47	41	56	41
Internal Link Dist (ft)		181	431			480	
Turn Bay Length (ft)					350		150
Base Capacity (vph)	362	3406	1961	1018	369	370	398
Starvation Cap Reductn	0	1086	0	0	0	0	0
Spillback Cap Reductn	0	0	36	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.61	0.49	0.44	0.08	0.23	0.22

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	1385	0	0	490	880	31	3	164	0	0	0
Future Volume (veh/h)	103	1385	0	0	490	880	31	3	164	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	105	1413	0	0	500	898	22	0	179			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	317	3421	0	0	1071	1816	392	0	697			
Arrive On Green	0.05	0.67	0.00	0.00	0.57	0.57	0.22	0.00	0.22			
Sat Flow, veh/h	1781	5274	0	0	1870	3170	1781	0	3170			
Grp Volume(v), veh/h	105	1413	0	0	500	898	22	0	179			
Grp Sat Flow(s),veh/h/ln	1781	1702	0	0	1870	1585	1781	0	1585			
Q Serve(g_s), s	2.3	12.6	0.0	0.0	15.6	16.9	1.0	0.0	4.7			
Cycle Q Clear(g_c), s	2.3	12.6	0.0	0.0	15.6	16.9	1.0	0.0	4.7			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	317	3421	0	0	1071	1816	392	0	697			
V/C Ratio(X)	0.33	0.41	0.00	0.00	0.47	0.49	0.06	0.00	0.26			
Avail Cap(c_a), veh/h	358	3421	0	0	1071	1816	392	0	697			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.77	0.77	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	9.0	7.5	0.0	0.0	12.5	12.7	30.8	0.0	32.2			
Incr Delay (d2), s/veh	0.5	0.3	0.0	0.0	1.5	1.0	0.3	0.0	0.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.8	4.2	0.0	0.0	6.6	5.9	0.4	0.0	4.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.5	7.8	0.0	0.0	13.9	13.7	31.1	0.0	33.1			
LnGrp LOS	A	A	A	A	B	B	C	A	C			
Approach Vol, veh/h		1518			1398			201				
Approach Delay, s/veh		7.9			13.8			32.9				
Approach LOS		A			B			C				

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	73.0	27.0	9.7	63.3
Change Period (Y+Rc), s	6.0	5.0	5.0	6.0
Max Green Setting (Gmax), s	67.0	22.0	7.0	55.0
Max Q Clear Time (g_c+I1), s	14.6	6.7	4.3	18.9
Green Ext Time (p_c), s	15.5	0.6	0.1	9.1

Intersection Summary	
HCM 6th Ctrl Delay	12.2
HCM 6th LOS	B

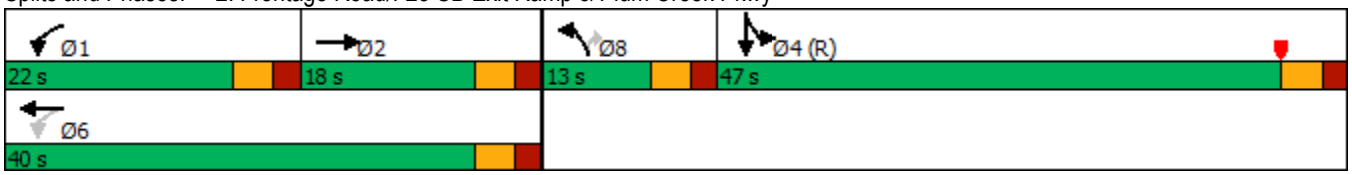
Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	299	201	286	20	155	1080	179
Future Volume (vph)	299	201	286	20	155	1080	179
Turn Type	NA	pm+pt	NA	Prot	Perm	Split	NA
Protected Phases	2	1	6	8		4	4
Permitted Phases		6			8		
Detector Phase	2	1	6	8	8	4	4
Switch Phase							
Minimum Initial (s)	10.0	5.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	30.0	10.0	30.0	10.0	10.0	10.0	10.0
Total Split (s)	18.0	22.0	40.0	13.0	13.0	47.0	47.0
Total Split (%)	18.0%	22.0%	40.0%	13.0%	13.0%	47.0%	47.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead		Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes
Recall Mode	Max	None	Max	None	None	C-Max	C-Max
Act Effct Green (s)	16.2	35.0	35.0	6.8	6.8	43.2	43.2
Actuated g/C Ratio	0.16	0.35	0.35	0.07	0.07	0.43	0.43
v/c Ratio	0.43	0.54	0.24	0.18	0.63	0.65	0.64

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 71 (71%), Referenced to phase 4:SBTL, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.65
Intersection Signal Delay: 28.2
Intersection Capacity Utilization 62.8%
Analysis Period (min) 15

Splits and Phases: 2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy



Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	353	209	298	21	161	911	455
v/c Ratio	0.43	0.54	0.24	0.18	0.63	0.65	0.64
Control Delay	38.1	31.7	25.9	46.9	18.7	25.5	27.3
Queue Delay	0.0	2.6	0.0	0.0	0.0	0.0	0.0
Total Delay	38.1	34.3	25.9	46.9	18.7	25.5	27.3
Queue Length 50th (ft)	71	113	81	13	0	245	238
Queue Length 95th (ft)	105	187	122	36	61	326	370
Internal Link Dist (ft)	437		181				388
Turn Bay Length (ft)				350			
Base Capacity (vph)	826	424	1238	141	274	1391	707
Starvation Cap Reductn	0	121	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.69	0.24	0.15	0.59	0.65	0.64

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	299	40	201	286	0	20	0	155	1080	179	53
Future Volume (vph)	0	299	40	201	286	0	20	0	155	1080	179	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0		5.0		5.0	5.0	5.0	
Lane Util. Factor		0.91		1.00	0.95		1.00		1.00	0.91	0.91	
Frt		0.98		1.00	1.00		1.00		0.85	1.00	0.98	
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95	0.98	
Satd. Flow (prot)		4995		1770	3539		1770		1583	3221	1626	
Flt Permitted		1.00		0.37	1.00		0.95		1.00	0.95	0.98	
Satd. Flow (perm)		4995		688	3539		1770		1583	3221	1626	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	311	42	209	298	0	21	0	161	1125	186	55
RTOR Reduction (vph)	0	17	0	0	0	0	0	0	150	0	5	0
Lane Group Flow (vph)	0	336	0	209	298	0	21	0	11	911	450	0
Turn Type		NA		pm+pt	NA		Prot		Perm	Split	NA	
Protected Phases		2		1	6		8			4	4	
Permitted Phases				6					8			
Actuated Green, G (s)		16.2		35.0	35.0		6.8		6.8	43.2	43.2	
Effective Green, g (s)		16.2		35.0	35.0		6.8		6.8	43.2	43.2	
Actuated g/C Ratio		0.16		0.35	0.35		0.07		0.07	0.43	0.43	
Clearance Time (s)		5.0		5.0	5.0		5.0		5.0	5.0	5.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		809		390	1238		120		107	1391	702	
v/s Ratio Prot		0.07		c0.07	0.08		c0.01			c0.28	0.28	
v/s Ratio Perm				c0.11					0.01			
v/c Ratio		0.42		0.54	0.24		0.17		0.10	0.65	0.64	
Uniform Delay, d1		37.6		24.2	23.1		44.0		43.7	22.5	22.3	
Progression Factor		1.00		1.10	1.10		1.00		1.00	1.00	1.00	
Incremental Delay, d2		1.6		1.3	0.4		0.7		0.4	2.4	4.5	
Delay (s)		39.2		28.0	25.7		44.7		44.2	24.9	26.8	
Level of Service		D		C	C		D		D	C	C	
Approach Delay (s)		39.2			26.7			44.2			25.5	
Approach LOS		D			C			D			C	

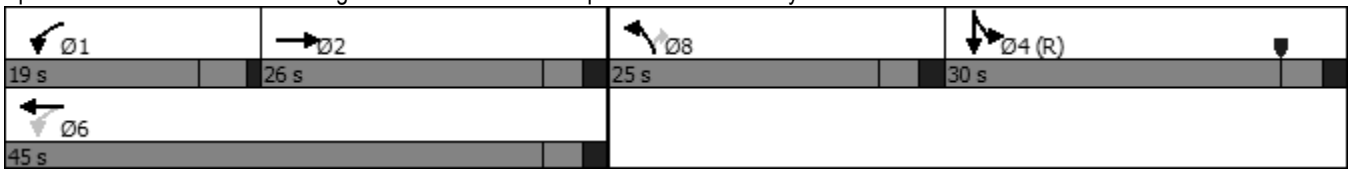
Intersection Summary			
HCM 2000 Control Delay	29.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	216	166	167	14	141	546	98	32
Future Volume (vph)	216	166	167	14	141	546	98	32
Turn Type	NA	pm+pt	NA	Prot	Perm	Split	NA	Free
Protected Phases	2	1	6	8		4	4	
Permitted Phases		6			8			Free
Detector Phase	2	1	6	8	8	4	4	
Switch Phase								
Minimum Initial (s)	10.0	5.0	10.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	30.0	9.5	30.0	10.0	10.0	10.0	10.0	
Total Split (s)	26.0	19.0	45.0	25.0	25.0	30.0	30.0	
Total Split (%)	26.0%	19.0%	45.0%	25.0%	25.0%	30.0%	30.0%	
Yellow Time (s)	3.0	3.5	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	1.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	4.5	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lag	Lead		Lead	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	
Recall Mode	Max	None	Max	None	None	C-Max	C-Max	
Act Effct Green (s)	23.9	40.5	40.0	7.4	7.4	37.6	37.6	100.0
Actuated g/C Ratio	0.24	0.40	0.40	0.07	0.07	0.38	0.38	1.00
v/c Ratio	0.30	0.37	0.12	0.11	0.58	0.37	0.37	0.02

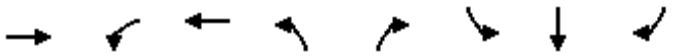
Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 4:SBTL, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.58
Intersection Signal Delay: 24.4
Intersection Capacity Utilization 48.1%
Analysis Period (min) 15

Splits and Phases: 8: W. Frontage Road/I-25 SB Off-Ramp & Plum Creek Pkwy



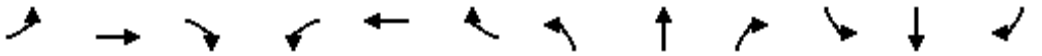
8: W. Frontage Road/I-25 SB Off-Ramp & Plum Creek Pkwy

Existing - Sat Peak Hour



Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	249	173	174	15	147	444	227	33
v/c Ratio	0.30	0.37	0.12	0.11	0.58	0.37	0.37	0.02
Control Delay	31.7	23.8	21.4	43.5	16.9	24.2	25.5	0.0
Queue Delay	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.7	25.3	21.4	43.5	16.9	24.2	25.5	0.0
Queue Length 50th (ft)	65	65	33	9	0	108	110	0
Queue Length 95th (ft)	105	128	66	28	56	166	197	0
Internal Link Dist (ft)	437		181				388	
Turn Bay Length (ft)				350				160
Base Capacity (vph)	840	490	1415	354	434	1209	619	1583
Starvation Cap Reductn	0	174	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.55	0.12	0.04	0.34	0.37	0.37	0.02

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	216	23	166	167	0	14	0	141	546	98	32
Future Volume (vph)	0	216	23	166	167	0	14	0	141	546	98	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		4.5	5.0		5.0		5.0	5.0	5.0	4.0
Lane Util. Factor		0.95		1.00	0.95		1.00		1.00	0.91	0.91	1.00
Frt		0.99		1.00	1.00		1.00		0.85	1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95	0.97	1.00
Satd. Flow (prot)		3488		1770	3539		1770		1583	3221	1650	1583
Flt Permitted		1.00		0.48	1.00		0.95		1.00	0.95	0.97	1.00
Satd. Flow (perm)		3488		898	3539		1770		1583	3221	1650	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	225	24	173	174	0	15	0	147	569	102	33
RTOR Reduction (vph)	0	8	0	0	0	0	0	0	136	0	0	0
Lane Group Flow (vph)	0	241	0	173	174	0	15	0	11	444	227	33
Turn Type		NA		pm+pt	NA		Prot		Perm	Split	NA	Free
Protected Phases		2		1	6		8			4	4	
Permitted Phases				6					8			Free
Actuated Green, G (s)		23.9		40.0	40.0		7.4		7.4	37.6	37.6	100.0
Effective Green, g (s)		23.9		40.0	40.0		7.4		7.4	37.6	37.6	100.0
Actuated g/C Ratio		0.24		0.40	0.40		0.07		0.07	0.38	0.38	1.00
Clearance Time (s)		5.0		4.5	5.0		5.0		5.0	5.0	5.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		833		460	1415		130		117	1211	620	1583
v/s Ratio Prot		0.07		c0.04	0.05		c0.01			c0.14	0.14	
v/s Ratio Perm				c0.11					0.01			0.02
v/c Ratio		0.29		0.38	0.12		0.12		0.09	0.37	0.37	0.02
Uniform Delay, d1		31.1		20.1	18.9		43.2		43.2	22.6	22.6	0.0
Progression Factor		1.00		1.08	1.11		1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		0.9		0.5	0.2		0.4		0.3	0.9	1.7	0.0
Delay (s)		32.0		22.3	21.2		43.6		43.5	23.4	24.2	0.0
Level of Service		C		C	C		D		D	C	C	A
Approach Delay (s)		32.0			21.8			43.5			22.6	
Approach LOS		C			C			D			C	

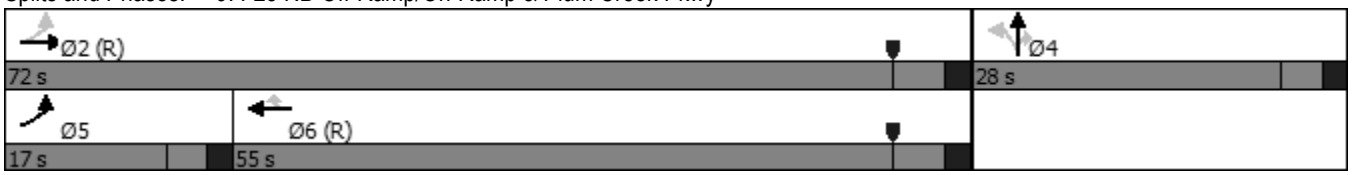
Intersection Summary			
HCM 2000 Control Delay	26.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	167	736	316	799	17	5	99
Future Volume (vph)	167	736	316	799	17	5	99
Turn Type	pm+pt	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6			4	
Permitted Phases	2			6	4		4
Detector Phase	5	2	6	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0	5.0
Minimum Split (s)	10.0	31.0	24.0	24.0	40.0	40.0	40.0
Total Split (s)	17.0	72.0	55.0	55.0	28.0	28.0	28.0
Total Split (%)	17.0%	72.0%	55.0%	55.0%	28.0%	28.0%	28.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max
Act Effct Green (s)	67.0	66.0	52.0	52.0	23.0	23.0	23.0
Actuated g/C Ratio	0.67	0.66	0.52	0.52	0.23	0.23	0.23
v/c Ratio	0.37	0.22	0.40	0.43	0.04	0.14	0.13

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 83 (83%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.43
Intersection Signal Delay: 6.4
Intersection Capacity Utilization 59.7%
Analysis Period (min) 15

Splits and Phases: 9: I-25 NB Off-Ramp/On-Ramp & Plum Creek Pkwy





Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	170	751	730	407	15	54	54
v/c Ratio	0.37	0.22	0.40	0.43	0.04	0.14	0.13
Control Delay	11.2	5.7	6.8	3.0	30.4	12.2	3.3
Queue Delay	0.4	0.3	0.0	0.0	0.0	0.0	0.0
Total Delay	11.7	6.0	6.8	3.0	30.4	12.2	3.3
Queue Length 50th (ft)	21	36	57	0	8	4	0
Queue Length 95th (ft)	81	73	103	51	25	38	14
Internal Link Dist (ft)		181	431			480	
Turn Bay Length (ft)					350		150
Base Capacity (vph)	500	3356	1809	944	386	374	412
Starvation Cap Reductn	96	1844	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.50	0.40	0.43	0.04	0.14	0.13

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	167	736	0	0	316	799	17	5	99	0	0	0
Future Volume (veh/h)	167	736	0	0	316	799	17	5	99	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	170	751	0	0	322	815	13	0	109			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	408	3370	0	0	1024	1736	410	0	729			
Arrive On Green	0.12	1.00	0.00	0.00	0.55	0.55	0.23	0.00	0.23			
Sat Flow, veh/h	1781	5274	0	0	1870	3170	1781	0	3170			
Grp Volume(v), veh/h	170	751	0	0	322	815	13	0	109			
Grp Sat Flow(s),veh/h/ln	1781	1702	0	0	1870	1585	1781	0	1585			
Q Serve(g_s), s	4.1	0.0	0.0	0.0	9.4	15.7	0.6	0.0	2.7			
Cycle Q Clear(g_c), s	4.1	0.0	0.0	0.0	9.4	15.7	0.6	0.0	2.7			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	408	3370	0	0	1024	1736	410	0	729			
V/C Ratio(X)	0.42	0.22	0.00	0.00	0.31	0.47	0.03	0.00	0.15			
Avail Cap(c_a), veh/h	510	3370	0	0	1024	1736	410	0	729			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.93	0.93	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	8.0	0.0	0.0	0.0	12.4	13.8	29.9	0.0	30.7			
Incr Delay (d2), s/veh	0.6	0.1	0.0	0.0	0.8	0.9	0.1	0.0	0.4			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.4	0.0	0.0	0.0	4.0	5.5	0.3	0.0	2.7			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.6	0.1	0.0	0.0	13.2	14.7	30.0	0.0	31.1			
LnGrp LOS	A	A	A	A	B	B	C	A	C			
Approach Vol, veh/h		921			1137			122				
Approach Delay, s/veh		1.7			14.3			31.0				
Approach LOS		A			B			C				

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	72.0	28.0	11.2	60.8
Change Period (Y+Rc), s	6.0	5.0	5.0	6.0
Max Green Setting (Gmax), s	66.0	23.0	12.0	49.0
Max Q Clear Time (g_c+I1), s	2.0	4.7	6.1	17.7
Green Ext Time (p_c), s	6.4	0.4	0.2	6.4

Intersection Summary	
HCM 6th Ctrl Delay	9.9
HCM 6th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

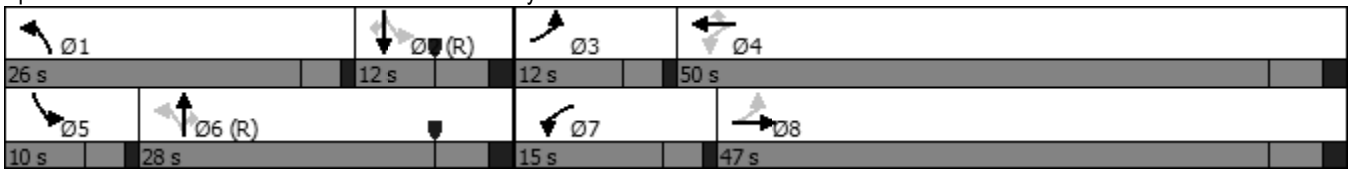
User approved volume balancing among the lanes for turning movement.

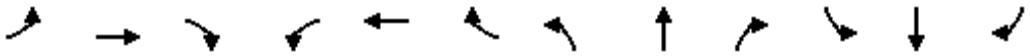
Intersection Capacity Worksheets: 2025 Background

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	129	532	238	100	882	105	312	154	109	58	131	79
Future Volume (vph)	129	532	238	100	882	105	312	154	109	58	131	79
Turn Type	pm+pt	NA	Free	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		Free	4		4	6		6	2		2
Detector Phase	3	8		7	4	4	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	5.0	10.0	10.0	5.0	4.0	4.0
Minimum Split (s)	9.5	31.0		14.5	31.0	31.0	9.5	16.0	16.0	9.5	10.0	10.0
Total Split (s)	12.0	47.0		15.0	50.0	50.0	26.0	28.0	28.0	10.0	12.0	12.0
Total Split (%)	12.0%	47.0%		15.0%	50.0%	50.0%	26.0%	28.0%	28.0%	10.0%	12.0%	12.0%
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	2.0		1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	43.9	34.3	100.0	48.6	36.6	36.6	41.7	31.5	31.5	29.3	21.3	21.3
Actuated g/C Ratio	0.44	0.34	1.00	0.49	0.37	0.37	0.42	0.32	0.32	0.29	0.21	0.21
v/c Ratio	0.71	0.56	0.19	0.30	0.76	0.17	0.50	0.43	0.29	0.19	0.40	0.20

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 32 (32%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 27.0
Intersection Capacity Utilization 64.0%
Analysis Period (min) 15

Splits and Phases: 1: Wilcox St. & Plum Creek Pkwy.





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	161	665	298	111	980	117	503	248	176	68	154	93
v/c Ratio	0.71	0.56	0.19	0.30	0.76	0.17	0.50	0.43	0.29	0.19	0.40	0.20
Control Delay	31.7	28.1	0.3	19.4	41.0	8.9	23.2	33.1	6.4	22.8	42.8	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.7	28.1	0.3	19.4	41.0	8.9	23.2	33.1	6.4	22.8	42.8	1.3
Queue Length 50th (ft)	53	177	0	52	352	9	112	131	0	26	86	0
Queue Length 95th (ft)	66	177	0	m91	416	65	111	145	7	57	#221	0
Internal Link Dist (ft)		553			473			812			658	
Turn Bay Length (ft)	280		250	185			190		195	130		130
Base Capacity (vph)	233	1416	1538	385	1557	788	1114	581	614	364	385	456
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.47	0.19	0.29	0.63	0.15	0.45	0.43	0.29	0.19	0.40	0.20

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Twin Mesa Metropolitan District New Service Plan
SV2023-003
Planning Commission Supplemental Memo Page 296 of 1222

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	129	532	238	100	882	105	312	154	109	58	131	79
Future Volume (veh/h)	129	532	238	100	882	105	312	154	109	58	131	79
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1870	1870	1870	1856	1856	1856	1826	1826	1826
Adj Flow Rate, veh/h	161	665	0	111	980	117	503	248	176	68	154	93
Peak Hour Factor	0.80	0.80	0.80	0.90	0.90	0.90	0.62	0.62	0.62	0.85	0.85	0.85
Percent Heavy Veh, %	5	5	5	2	2	2	3	3	3	5	5	5
Cap, veh/h	251	1163		379	1250	557	960	607	514	356	436	370
Arrive On Green	0.08	0.34	0.00	0.03	0.12	0.12	0.13	0.33	0.33	0.04	0.24	0.24
Sat Flow, veh/h	1739	3469	1547	1781	3554	1585	3428	1856	1572	1739	1826	1547
Grp Volume(v), veh/h	161	665	0	111	980	117	503	248	176	68	154	93
Grp Sat Flow(s),veh/h/ln	1739	1735	1547	1781	1777	1585	1714	1856	1572	1739	1826	1547
Q Serve(g_s), s	6.0	15.8	0.0	3.9	26.8	6.7	10.5	10.4	8.5	2.9	7.0	4.9
Cycle Q Clear(g_c), s	6.0	15.8	0.0	3.9	26.8	6.7	10.5	10.4	8.5	2.9	7.0	4.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	251	1163		379	1250	557	960	607	514	356	436	370
V/C Ratio(X)	0.64	0.57		0.29	0.78	0.21	0.52	0.41	0.34	0.19	0.35	0.25
Avail Cap(c_a), veh/h	253	1422		405	1564	697	1266	607	514	386	436	370
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.83	0.83	0.83	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.4	27.3	0.0	20.1	40.5	31.6	22.4	26.1	25.5	26.9	31.6	30.8
Incr Delay (d2), s/veh	4.1	0.4	0.0	0.1	1.8	0.2	0.2	2.0	1.8	0.1	2.2	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	6.4	0.0	1.6	13.0	2.7	4.2	4.9	3.3	1.2	3.4	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.6	27.8	0.0	20.2	42.3	31.8	22.5	28.2	27.3	27.0	33.9	32.4
LnGrp LOS	C	C		C	D	C	C	C	C	C	C	C
Approach Vol, veh/h		826	A		1208			927			315	
Approach Delay, s/veh		27.7			39.2			25.0			32.0	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.1	29.9	11.9	41.2	8.2	38.7	13.5	39.5
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	22.0	6.0	8.0	44.0	6.0	22.0	11.0	41.0
Max Q Clear Time (g_c+I1), s	12.5	9.0	8.0	28.8	4.9	12.4	5.9	17.8
Green Ext Time (p_c), s	0.6	0.0	0.0	6.3	0.0	2.1	0.0	4.6

Intersection Summary	
HCM 6th Ctrl Delay	31.6
HCM 6th LOS	C

Notes

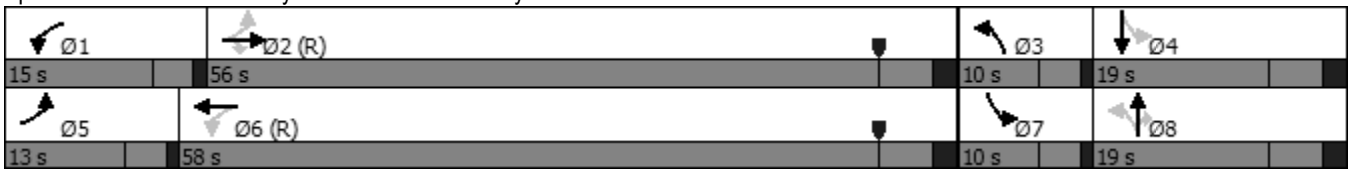
User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	119	471	117	118	968	70	37	57	75	58	60
Future Volume (vph)	119	471	117	118	968	70	37	57	75	58	60
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Free
Protected Phases	5	2		1	6	3	8		7	4	
Permitted Phases	2		2	6		8		8	4		Free
Detector Phase	5	2	2	1	6	3	8	8	7	4	
Switch Phase											
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0	3.0	5.0	5.0	3.0	5.0	
Minimum Split (s)	9.5	32.0	32.0	9.5	32.0	9.5	11.0	11.0	9.5	11.0	
Total Split (s)	13.0	56.0	56.0	15.0	58.0	10.0	19.0	19.0	10.0	19.0	
Total Split (%)	13.0%	56.0%	56.0%	15.0%	58.0%	10.0%	19.0%	19.0%	10.0%	19.0%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	6.0	4.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None	None	
Act Effct Green (s)	72.0	63.0	63.0	70.7	62.3	15.2	8.9	8.9	15.3	9.0	100.0
Actuated g/C Ratio	0.72	0.63	0.63	0.71	0.62	0.15	0.09	0.09	0.15	0.09	1.00
v/c Ratio	0.57	0.31	0.17	0.24	0.58	0.38	0.28	0.28	0.43	0.46	0.05

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 41 (41%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.58
Intersection Signal Delay: 13.2
Intersection Capacity Utilization 62.4%
Analysis Period (min) 15

Splits and Phases: 2: Perry St. & Plum Creek Pkwy.





Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	172	683	170	136	1268	86	46	70	101	78	81
v/c Ratio	0.57	0.31	0.17	0.24	0.58	0.38	0.28	0.28	0.43	0.46	0.05
Control Delay	11.4	13.3	7.3	4.4	9.1	37.6	45.6	4.4	39.2	51.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.4	13.3	7.3	4.4	9.1	37.6	45.6	4.4	39.2	51.2	0.1
Queue Length 50th (ft)	33	186	53	17	178	46	28	0	54	48	0
Queue Length 95th (ft)	51	168	62	m32	212	76	55	2	78	74	0
Internal Link Dist (ft)		473			1330		455			497	
Turn Bay Length (ft)	170		70	100		185		65	120		120
Base Capacity (vph)	340	2185	1026	640	2195	232	244	309	238	247	1615
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.31	0.17	0.21	0.58	0.37	0.19	0.23	0.42	0.32	0.05

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	119	471	117	118	968	135	70	37	57	75	58	60
Future Volume (veh/h)	119	471	117	118	968	135	70	37	57	75	58	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1885	1885	1885	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	172	683	170	136	1113	155	86	46	70	101	78	0
Peak Hour Factor	0.69	0.69	0.69	0.87	0.87	0.87	0.81	0.81	0.81	0.74	0.74	0.74
Percent Heavy Veh, %	4	4	4	1	1	1	1	1	1	0	0	0
Cap, veh/h	433	2183	974	457	1950	271	216	128	108	238	133	
Arrive On Green	0.02	0.21	0.21	0.10	1.00	1.00	0.06	0.07	0.07	0.06	0.07	0.00
Sat Flow, veh/h	1753	3497	1560	1795	3158	439	1795	1885	1584	1810	1900	1610
Grp Volume(v), veh/h	172	683	170	136	630	638	86	46	70	101	78	0
Grp Sat Flow(s),veh/h/ln	1753	1749	1560	1795	1791	1806	1795	1885	1584	1810	1900	1610
Q Serve(g_s), s	3.5	16.6	9.0	2.8	0.0	0.0	4.4	2.3	4.3	5.2	4.0	0.0
Cycle Q Clear(g_c), s	3.5	16.6	9.0	2.8	0.0	0.0	4.4	2.3	4.3	5.2	4.0	0.0
Prop In Lane	1.00		1.00	1.00		0.24	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	433	2183	974	457	1106	1115	216	128	108	238	133	
V/C Ratio(X)	0.40	0.31	0.17	0.30	0.57	0.57	0.40	0.36	0.65	0.42	0.59	
Avail Cap(c_a), veh/h	495	2183	974	568	1106	1115	220	245	206	238	247	
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.87	0.87	0.87	0.78	0.78	0.78	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	6.2	21.5	18.5	7.3	0.0	0.0	40.2	44.5	45.4	40.3	45.1	0.0
Incr Delay (d2), s/veh	0.2	0.3	0.3	0.1	1.7	1.7	0.4	1.2	4.8	0.4	3.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	7.8	3.5	0.9	0.5	0.5	1.9	1.1	1.8	2.3	2.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.4	21.8	18.8	7.4	1.7	1.7	40.6	45.8	50.2	40.7	48.1	0.0
LnGrp LOS	A	C	B	A	A	A	D	D	D	D	D	
Approach Vol, veh/h		1025			1404			202			179	A
Approach Delay, s/veh		18.7			2.2			45.1			44.0	
Approach LOS		B			A			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.8	68.4	9.8	13.0	9.5	67.7	10.0	12.8
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	11.0	50.0	6.0	13.0	9.0	52.0	6.0	13.0
Max Q Clear Time (g_c+I1), s	4.8	18.6	6.4	6.0	5.5	2.0	7.2	6.3
Green Ext Time (p_c), s	0.1	5.7	0.0	0.1	0.0	11.6	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	14.0
HCM 6th LOS	B

Notes

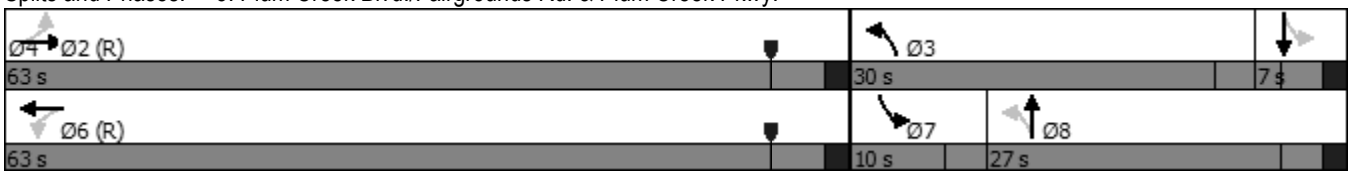
User approved pedestrian interval to be less than phase max green.

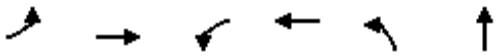
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	Ø4	Ø7
Lane Configurations								
Traffic Volume (vph)	14	411	49	935	285	0		
Future Volume (vph)	14	411	49	935	285	0		
Turn Type	Perm	NA	Perm	NA	pm+pt	NA		
Protected Phases		2		6	3	8	4	7
Permitted Phases	2		6		8			
Detector Phase	2	2	6	6	3	8		
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0	2.0	3.0
Minimum Split (s)	33.0	33.0	28.0	28.0	14.5	10.0	7.0	9.5
Total Split (s)	63.0	63.0	63.0	63.0	30.0	27.0	7.0	10.0
Total Split (%)	63.0%	63.0%	63.0%	63.0%	30.0%	27.0%	7%	10%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	6.0	6.0	6.0	6.0	3.0	5.0		
Lead/Lag					Lead	Lag	Lag	Lead
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	Max	Max	None
Act Effct Green (s)	57.0	57.0	57.0	57.0	34.0	32.0		
Actuated g/C Ratio	0.57	0.57	0.57	0.57	0.34	0.32		
v/c Ratio	0.08	0.35	0.15	0.54	0.73	0.06		

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 44 (44%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 14.5
Intersection Capacity Utilization 64.2%
Analysis Period (min) 15

Splits and Phases: 3: Plum Creek Blvd./Fairgrounds Rd. & Plum Creek Pkwy.





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT
Lane Group Flow (vph)	16	686	58	1101	370	45
v/c Ratio	0.08	0.35	0.15	0.54	0.73	0.06
Control Delay	5.7	3.7	11.4	14.6	36.8	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.7	3.7	11.4	14.6	36.8	0.1
Queue Length 50th (ft)	2	10	16	215	195	0
Queue Length 95th (ft)	m7	23	35	248	237	0
Internal Link Dist (ft)		1330		637		613
Turn Bay Length (ft)	70		55			
Base Capacity (vph)	201	1938	383	2037	554	816
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.35	0.15	0.54	0.67	0.06

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	411	179	49	935	1	285	0	35	0	0	0
Future Volume (veh/h)	14	411	179	49	935	1	285	0	35	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1885	1885	1885	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	16	478	208	58	1100	1	370	0	45	0	0	0
Peak Hour Factor	0.86	0.86	0.86	0.85	0.85	0.85	0.77	0.77	0.77	0.25	0.25	0.25
Percent Heavy Veh, %	4	4	4	1	1	1	1	1	1	0	0	0
Cap, veh/h	305	1482	641	547	2290	2	489	0	425	101	38	0
Arrive On Green	1.00	1.00	1.00	0.62	0.62	0.62	0.22	0.00	0.27	0.00	0.00	0.00
Sat Flow, veh/h	504	2376	1027	762	3672	3	1795	0	1598	1810	1900	0
Grp Volume(v), veh/h	16	351	335	58	536	565	370	0	45	0	0	0
Grp Sat Flow(s),veh/h/ln	504	1749	1655	762	1791	1885	1795	0	1598	1810	1900	0
Q Serve(g_s), s	0.9	0.0	0.0	3.1	16.1	16.1	19.3	0.0	2.1	0.0	0.0	0.0
Cycle Q Clear(g_c), s	17.0	0.0	0.0	3.1	16.1	16.1	19.3	0.0	2.1	0.0	0.0	0.0
Prop In Lane	1.00		0.62	1.00		0.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	305	1091	1032	547	1117	1175	489	0	425	101	38	0
V/C Ratio(X)	0.05	0.32	0.32	0.11	0.48	0.48	0.76	0.00	0.11	0.00	0.00	0.00
Avail Cap(c_a), veh/h	305	1091	1032	547	1117	1175	585	0	425	226	38	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.96	0.96	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	2.2	0.0	0.0	7.7	10.1	10.1	34.9	0.0	27.7	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.7	0.8	0.4	1.5	1.4	3.6	0.0	0.5	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.2	0.2	0.5	6.1	6.4	8.7	0.0	0.9	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	2.5	0.7	0.8	8.1	11.6	11.5	38.4	0.0	28.2	0.0	0.0	0.0
LnGrp LOS	A	A	A	A	B	B	D	A	C	A	A	A
Approach Vol, veh/h		702			1159			415			0	
Approach Delay, s/veh		0.8			11.4			37.3			0.0	
Approach LOS		A			B			D				

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	68.4	24.6	7.0	68.4	0.0	31.6
Change Period (Y+Rc), s	6.0	3.0	5.0	6.0	3.0	5.0
Max Green Setting (Gmax), s	57.0	27.0	2.0	57.0	7.0	22.0
Max Q Clear Time (g_c+I1), s	19.0	21.3	0.0	18.1	0.0	4.1
Green Ext Time (p_c), s	5.0	0.3	0.0	9.3	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	12.9
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑	↱	↰	↑
Traffic Volume (veh/h)	0	0	169	3	134	166
Future Volume (Veh/h)	0	0	169	3	134	166
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.90	0.90	0.94	0.94
Hourly flow rate (vph)	0	0	188	3	143	177
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	651	188			191	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	651	188			191	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			90	
cM capacity (veh/h)	388	854			1383	

Direction, Lane #	NB 1	NB 2	SB 1	SB 2
Volume Total	188	3	143	177
Volume Left	0	0	143	0
Volume Right	0	3	0	0
cSH	1700	1700	1383	1700
Volume to Capacity	0.11	0.00	0.10	0.10
Queue Length 95th (ft)	0	0	9	0
Control Delay (s)	0.0	0.0	7.9	0.0
Lane LOS			A	
Approach Delay (s)	0.0		3.5	
Approach LOS				

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	23.0%	ICU Level of Service	A
Analysis Period (min)	15		

Twin Mesa Metropolitan District New Service Plan
SV2023-003
Planning Commission Supplemental Memo Page 304 of 1222

DELAY (CONTROL)

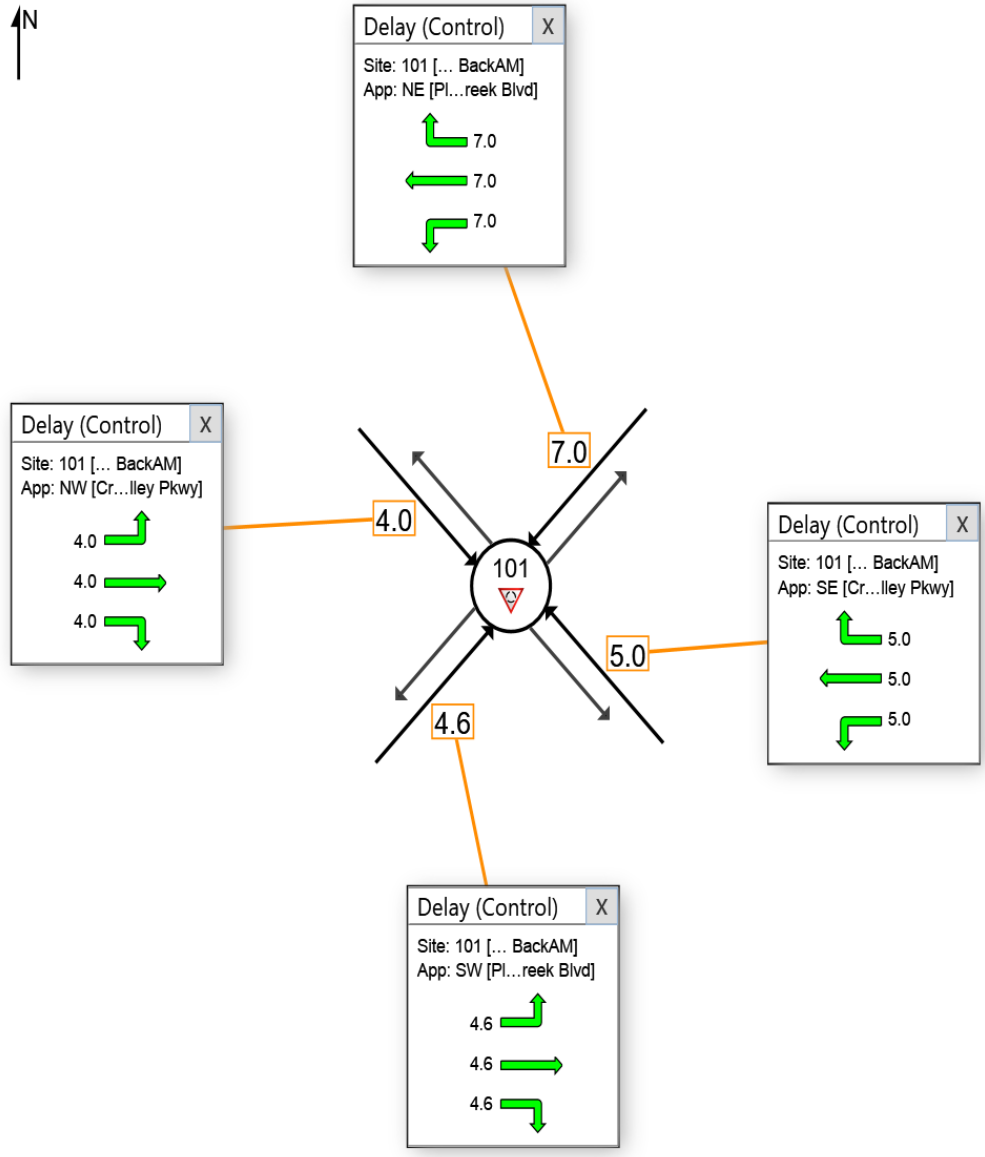
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 101 [Int #5_2025 Back_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

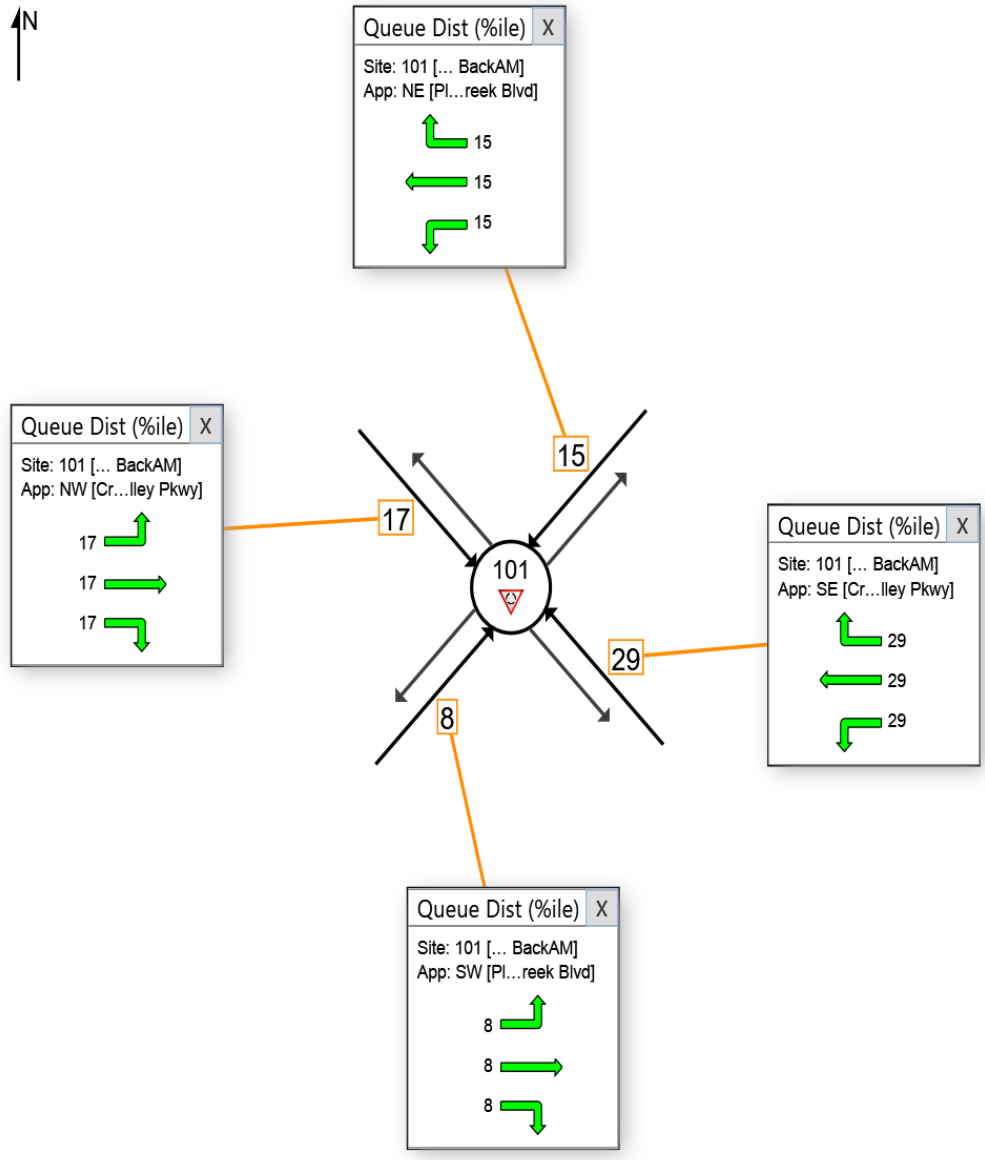
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 101 [Int #5_2025 Back_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

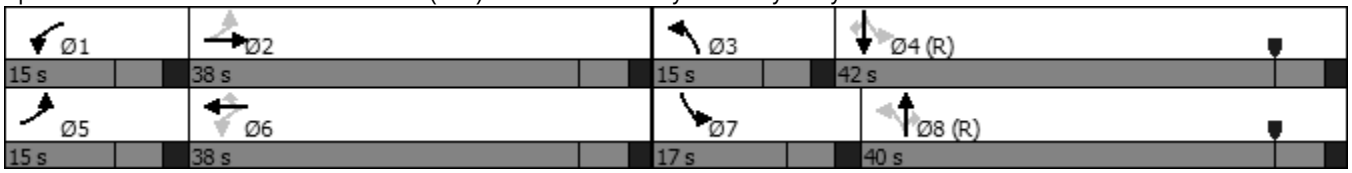
Close All Popups



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	4	7	10	15	55	2	100	50	50	113	6
Future Volume (vph)	4	7	10	15	55	2	100	50	50	113	6
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2	1	6		3	8		7	4	
Permitted Phases	2		6		6	8		8	4		4
Detector Phase	5	2	1	6	6	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.0	33.0	11.0	33.0	33.0	11.0	33.0	33.0	11.0	33.0	33.0
Total Split (s)	15.0	38.0	15.0	38.0	38.0	15.0	40.0	40.0	17.0	42.0	42.0
Total Split (%)	13.6%	34.5%	13.6%	34.5%	34.5%	13.6%	36.4%	36.4%	15.5%	38.2%	38.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	45.7	44.5	45.9	44.6	44.6	44.4	39.8	39.8	50.5	48.6	48.6
Actuated g/C Ratio	0.42	0.40	0.42	0.41	0.41	0.40	0.36	0.36	0.46	0.44	0.44
v/c Ratio	0.01	0.01	0.02	0.02	0.08	0.00	0.17	0.09	0.11	0.16	0.01

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 89 (81%), Referenced to phase 4:SBTL and 8:NBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.17
Intersection Signal Delay: 16.1
Intersection Capacity Utilization 35.8%
Analysis Period (min) 15

Splits and Phases: 7: Dawson Trail Blvd. (new) & Territorial Rd./Crystal Valley Pkwy.





Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	5	10	11	17	61	2	114	57	58	131	7
v/c Ratio	0.01	0.01	0.02	0.02	0.08	0.00	0.17	0.09	0.11	0.16	0.01
Control Delay	18.2	21.2	18.4	22.2	0.2	16.5	26.4	0.3	17.0	20.4	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.2	21.2	18.4	22.2	0.2	16.5	26.4	0.3	17.0	20.4	0.0
Queue Length 50th (ft)	2	4	4	7	0	1	56	0	22	52	0
Queue Length 95th (ft)	8	14	15	25	0	5	99	0	44	105	0
Internal Link Dist (ft)		1067		1733			1614			1008	
Turn Bay Length (ft)	200		500			500		1000	500		500
Base Capacity (vph)	627	743	618	755	729	578	674	668	576	800	762
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.01	0.02	0.02	0.08	0.00	0.17	0.09	0.10	0.16	0.01

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	7	1	10	15	55	2	100	50	50	113	6
Future Volume (veh/h)	4	7	1	10	15	55	2	100	50	50	113	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900	1870	1870	1870	1870	1870	1870	1870	1826	1826
Adj Flow Rate, veh/h	5	9	1	11	17	61	2	114	57	58	131	7
Peak Hour Factor	0.75	0.75	0.75	0.90	0.90	0.90	0.88	0.88	0.88	0.86	0.86	0.86
Percent Heavy Veh, %	0	2	0	2	2	2	2	2	2	2	5	5
Cap, veh/h	467	481	53	492	556	471	633	823	698	623	790	669
Arrive On Green	0.01	0.29	0.29	0.01	0.30	0.30	0.05	0.44	0.44	0.04	0.43	0.43
Sat Flow, veh/h	1810	1654	184	1781	1870	1585	1781	1870	1585	1781	1826	1547
Grp Volume(v), veh/h	5	0	10	11	17	61	2	114	57	58	131	7
Grp Sat Flow(s),veh/h/ln	1810	0	1837	1781	1870	1585	1781	1870	1585	1781	1826	1547
Q Serve(g_s), s	0.2	0.0	0.4	0.5	0.7	3.1	0.1	4.0	2.3	2.0	4.8	0.3
Cycle Q Clear(g_c), s	0.2	0.0	0.4	0.5	0.7	3.1	0.1	4.0	2.3	2.0	4.8	0.3
Prop In Lane	1.00		0.10	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	467	0	534	492	556	471	633	823	698	623	790	669
V/C Ratio(X)	0.01	0.00	0.02	0.02	0.03	0.13	0.00	0.14	0.08	0.09	0.17	0.01
Avail Cap(c_a), veh/h	604	0	534	614	556	471	697	823	698	734	790	669
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.85	0.85	0.85	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.2	0.0	27.8	26.8	27.4	28.2	15.1	18.4	17.9	16.0	19.1	17.8
Incr Delay (d2), s/veh	0.0	0.0	0.1	0.0	0.1	0.5	0.0	0.4	0.2	0.1	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.2	0.2	0.3	1.2	0.0	1.8	0.9	0.8	2.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.2	0.0	27.9	26.8	27.5	28.7	15.1	18.7	18.1	16.1	19.5	17.8
LnGrp LOS	C	A	C	C	C	C	B	B	B	B	B	B
Approach Vol, veh/h		15			89			173			196	
Approach Delay, s/veh		27.7			28.2			18.5			18.4	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.4	38.0	11.0	53.6	6.7	38.7	10.2	54.4
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	9.0	32.0	9.0	36.0	9.0	32.0	11.0	34.0
Max Q Clear Time (g_c+I1), s	2.5	2.4	2.1	6.8	2.2	5.1	4.0	6.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.7	0.0	0.2	0.0	0.8

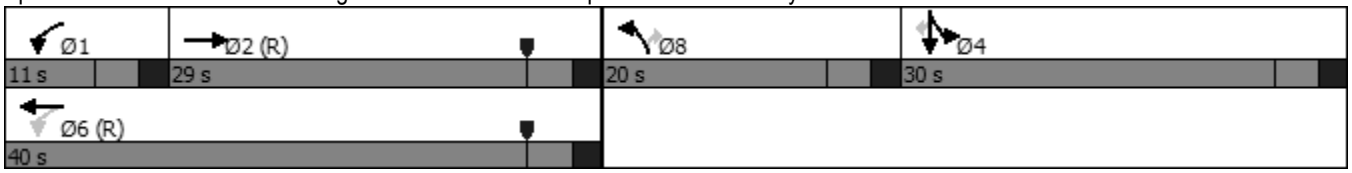
Intersection Summary	
HCM 6th Ctrl Delay	20.6
HCM 6th LOS	C

Twin Mesa Metropolitan District New Service Plan
SV2023-003
Planning Commission Supplemental Memo Page 309 of 1222

Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	310	145	345	25	250	695	140	100
Future Volume (vph)	310	145	345	25	250	695	140	100
Turn Type	NA	pm+pt	NA	Prot	Perm	Split	NA	Perm
Protected Phases	2	1	6	8		4	4	
Permitted Phases		6			8			4
Detector Phase	2	1	6	8	8	4	4	4
Switch Phase								
Minimum Initial (s)	10.0	5.0	10.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	30.0	10.0	30.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	29.0	11.0	40.0	20.0	20.0	30.0	30.0	30.0
Total Split (%)	32.2%	12.2%	44.4%	22.2%	22.2%	33.3%	33.3%	33.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead		Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Recall Mode	C-Max	None	C-Max	None	None	None	None	None
Act Effct Green (s)	29.1	41.6	41.6	9.7	9.7	23.7	23.7	23.7
Actuated g/C Ratio	0.32	0.46	0.46	0.11	0.11	0.26	0.26	0.26
v/c Ratio	0.26	0.37	0.23	0.15	0.76	0.72	0.73	0.21

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 20 (22%), Referenced to phase 2:EBT and 6:WBTL, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 27.3
Intersection Capacity Utilization 51.6%
Analysis Period (min) 15

Splits and Phases: 8: W. Frontage Road/I-25 SB Off-Ramp & Plum Creek Pkwy



Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	433	161	383	28	278	610	318	111
v/c Ratio	0.26	0.37	0.23	0.15	0.76	0.72	0.73	0.21
Control Delay	16.3	27.0	23.4	35.8	23.9	35.2	40.7	3.2
Queue Delay	0.0	2.2	0.6	0.0	0.0	0.0	0.0	0.0
Total Delay	16.3	29.2	24.0	35.8	23.9	35.2	40.7	3.2
Queue Length 50th (ft)	43	69	87	15	32	165	173	0
Queue Length 95th (ft)	61	138	145	38	109	231	282	23
Internal Link Dist (ft)	437		181				388	
Turn Bay Length (ft)				350				160
Base Capacity (vph)	1638	435	1637	295	445	918	471	555
Starvation Cap Reductn	0	166	858	0	0	0	0	0
Spillback Cap Reductn	83	0	0	0	3	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.60	0.49	0.09	0.63	0.66	0.68	0.20

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	310	80	145	345	0	25	0	250	695	140	100
Future Volume (vph)	0	310	80	145	345	0	25	0	250	695	140	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0		5.0		5.0	5.0	5.0	5.0
Lane Util. Factor		0.91		1.00	0.95		1.00		1.00	0.91	0.91	1.00
Frt		0.97		1.00	1.00		1.00		0.85	1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95	0.98	1.00
Satd. Flow (prot)		4929		1770	3539		1770		1583	3221	1653	1583
Flt Permitted		1.00		0.41	1.00		0.95		1.00	0.95	0.98	1.00
Satd. Flow (perm)		4929		756	3539		1770		1583	3221	1653	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	344	89	161	383	0	28	0	278	772	156	111
RTOR Reduction (vph)	0	47	0	0	0	0	0	0	195	0	0	82
Lane Group Flow (vph)	0	386	0	161	383	0	28	0	83	610	318	29
Turn Type		NA		pm+pt	NA		Prot		Perm	Split	NA	Perm
Protected Phases		2		1	6		8			4	4	
Permitted Phases				6					8			4
Actuated Green, G (s)		29.0		41.6	41.6		9.7		9.7	23.7	23.7	23.7
Effective Green, g (s)		29.0		41.6	41.6		9.7		9.7	23.7	23.7	23.7
Actuated g/C Ratio		0.32		0.46	0.46		0.11		0.11	0.26	0.26	0.26
Clearance Time (s)		5.0		5.0	5.0		5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)		3.0		3.0	3.0		3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		1588		435	1635		190		170	848	435	416
v/s Ratio Prot		0.08		c0.03	0.11		0.02			0.19	c0.19	
v/s Ratio Perm				c0.14					c0.05			0.02
v/c Ratio		0.24		0.37	0.23		0.15		0.49	0.72	0.73	0.07
Uniform Delay, d1		22.4		14.6	14.6		36.4		37.8	30.1	30.2	24.9
Progression Factor		0.78		1.46	1.43		1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		0.4		0.5	0.3		0.4		2.2	2.9	6.2	0.1
Delay (s)		18.0		21.8	21.1		36.8		40.1	33.1	36.5	25.0
Level of Service		B		C	C		D		D	C	D	C
Approach Delay (s)		18.0			21.3			39.8			33.2	
Approach LOS		B			C			D			C	

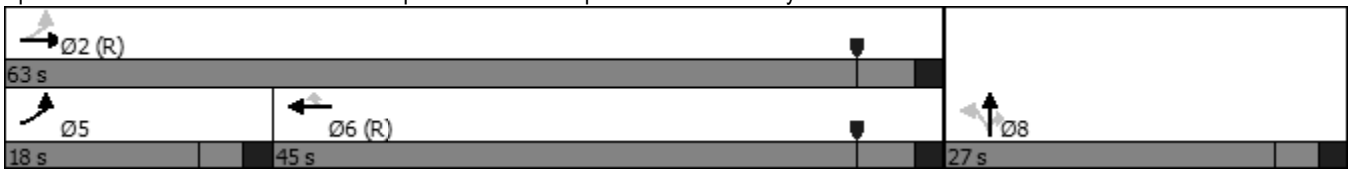
Intersection Summary			
HCM 2000 Control Delay	28.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	51.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	230	981	365	1075	65	2	110
Future Volume (vph)	230	981	365	1075	65	2	110
Turn Type	pm+pt	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6			8	
Permitted Phases	2			6	8		8
Detector Phase	5	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0	5.0
Minimum Split (s)	10.0	31.0	24.0	24.0	40.0	40.0	40.0
Total Split (s)	18.0	63.0	45.0	45.0	27.0	27.0	27.0
Total Split (%)	20.0%	70.0%	50.0%	50.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max
Act Effct Green (s)	58.0	57.0	41.2	41.2	22.0	22.0	22.0
Actuated g/C Ratio	0.64	0.63	0.46	0.46	0.24	0.24	0.24
v/c Ratio	0.68	0.33	0.58	0.60	0.16	0.16	0.15

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 53 (59%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 10.8
Intersection Capacity Utilization 74.6%
Analysis Period (min) 15

Splits and Phases: 9: I-25 NB Off-Ramp/I-25 NB On-Ramp & Plum Creek Pkwy

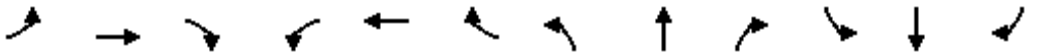




Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	250	1066	981	584	64	65	64
v/c Ratio	0.68	0.33	0.58	0.60	0.16	0.16	0.15
Control Delay	25.5	10.6	9.5	4.4	28.0	10.7	3.3
Queue Delay	0.7	0.6	0.0	0.0	0.0	0.0	0.0
Total Delay	26.2	11.3	9.5	4.4	28.0	10.7	3.3
Queue Length 50th (ft)	83	93	92	0	30	4	0
Queue Length 95th (ft)	m128	135	162	65	65	38	16
Internal Link Dist (ft)		181	431			480	
Turn Bay Length (ft)					350		150
Base Capacity (vph)	404	3220	1697	976	410	401	440
Starvation Cap Reductn	29	1653	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.68	0.58	0.60	0.16	0.16	0.15

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	230	981	0	0	365	1075	65	2	110	0	0	0
Future Volume (veh/h)	230	981	0	0	365	1075	65	2	110	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	250	1066	0	0	397	1168	48	0	146			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	363	3234	0	0	902	1529	435	0	775			
Arrive On Green	0.19	1.00	0.00	0.00	0.48	0.48	0.24	0.00	0.24			
Sat Flow, veh/h	1781	5274	0	0	1870	3170	1781	0	3170			
Grp Volume(v), veh/h	250	1066	0	0	397	1168	48	0	146			
Grp Sat Flow(s),veh/h/ln	1781	1702	0	0	1870	1585	1781	0	1585			
Q Serve(g_s), s	6.3	0.0	0.0	0.0	12.6	27.2	1.9	0.0	3.3			
Cycle Q Clear(g_c), s	6.3	0.0	0.0	0.0	12.6	27.2	1.9	0.0	3.3			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	363	3234	0	0	902	1529	435	0	775			
V/C Ratio(X)	0.69	0.33	0.00	0.00	0.44	0.76	0.11	0.00	0.19			
Avail Cap(c_a), veh/h	450	3234	0	0	902	1529	435	0	775			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.80	0.80	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	10.9	0.0	0.0	0.0	15.3	19.1	26.4	0.0	26.9			
Incr Delay (d2), s/veh	2.6	0.2	0.0	0.0	1.6	3.7	0.5	0.0	0.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.1	0.1	0.0	0.0	5.5	10.1	0.8	0.0	1.3			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.5	0.2	0.0	0.0	16.9	22.8	26.9	0.0	27.5			
LnGrp LOS	B	A	A	A	B	C	C	A	C			
Approach Vol, veh/h		1316			1565			194				
Approach Delay, s/veh		2.7			21.3			27.3				
Approach LOS		A			C			C				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		63.0			13.6	49.4		27.0				
Change Period (Y+Rc), s		6.0			5.0	6.0		5.0				
Max Green Setting (Gmax), s		57.0			13.0	39.0		22.0				
Max Q Clear Time (g_c+I1), s		2.0			8.3	29.2		5.3				
Green Ext Time (p_c), s		10.1			0.3	5.5		0.6				

Intersection Summary	
HCM 6th Ctrl Delay	13.7
HCM 6th LOS	B

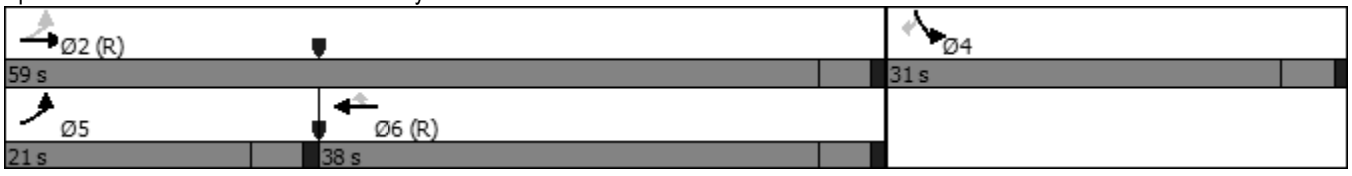
Notes

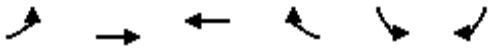
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	17	387	458	89	72	16
Future Volume (vph)	17	387	458	89	72	16
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	21.0	59.0	38.0	38.0	31.0	31.0
Total Split (%)	23.3%	65.6%	42.2%	42.2%	34.4%	34.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max
Act Effct Green (s)	54.5	54.5	50.2	50.2	26.5	26.5
Actuated g/C Ratio	0.61	0.61	0.56	0.56	0.29	0.29
v/c Ratio	0.03	0.20	0.25	0.10	0.08	0.04

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 3 (3%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.25
Intersection Signal Delay: 8.1
Intersection Capacity Utilization 25.8%
Analysis Period (min) 15

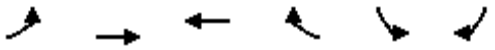
Splits and Phases: 10: Plum Creek Pkwy & Prairie Hawk Drive





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	18	421	498	97	78	17
v/c Ratio	0.03	0.20	0.25	0.10	0.08	0.04
Control Delay	7.2	8.2	6.9	0.5	23.3	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.2	8.2	6.9	0.5	23.3	10.8
Queue Length 50th (ft)	4	51	37	0	16	0
Queue Length 95th (ft)	12	73	54	0	32	15
Internal Link Dist (ft)		246	922		578	
Turn Bay Length (ft)	230			230		250
Base Capacity (vph)	642	2143	1973	925	1010	478
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.20	0.25	0.10	0.08	0.04

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	17	387	458	89	72	16
Future Volume (veh/h)	17	387	458	89	72	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	18	421	498	0	78	17
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	529	2152	1903		1018	467
Arrive On Green	0.02	0.61	0.54	0.00	0.29	0.29
Sat Flow, veh/h	1781	3647	3647	1585	3456	1585
Grp Volume(v), veh/h	18	421	498	0	78	17
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1728	1585
Q Serve(g_s), s	0.4	4.8	6.8	0.0	1.5	0.7
Cycle Q Clear(g_c), s	0.4	4.8	6.8	0.0	1.5	0.7
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	529	2152	1903		1018	467
V/C Ratio(X)	0.03	0.20	0.26		0.08	0.04
Avail Cap(c_a), veh/h	820	2152	1903		1018	467
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	8.5	7.9	11.3	0.0	22.9	22.6
Incr Delay (d2), s/veh	0.0	0.2	0.3	0.0	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.6	2.4	0.0	0.6	0.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	8.6	8.1	11.6	0.0	23.1	22.8
LnGrp LOS	A	A	B		C	C
Approach Vol, veh/h		439	498	A	95	
Approach Delay, s/veh		8.2	11.6		23.0	
Approach LOS		A	B		C	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		59.0		31.0	6.3	52.7
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		54.5		26.5	16.5	33.5
Max Q Clear Time (g_c+I1), s		6.8		3.5	2.4	8.8
Green Ext Time (p_c), s		2.7		0.3	0.0	3.0

Intersection Summary	
HCM 6th Ctrl Delay	11.2
HCM 6th LOS	B

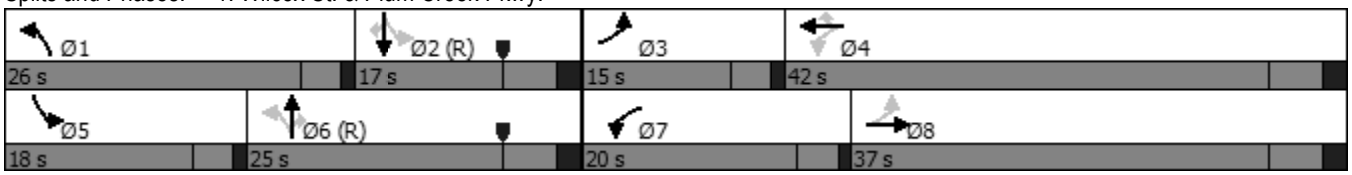
Notes

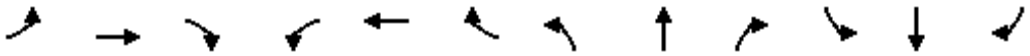
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	238	963	220	40	744	166	158	134	84	168	119	268
Future Volume (vph)	238	963	220	40	744	166	158	134	84	168	119	268
Turn Type	pm+pt	NA	Free	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		Free	4		4	6		6	2		2
Detector Phase	3	8		7	4	4	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	5.0	10.0	10.0	5.0	4.0	4.0
Minimum Split (s)	9.5	31.0		14.5	31.0	31.0	9.5	16.0	16.0	9.5	10.0	10.0
Total Split (s)	15.0	37.0		20.0	42.0	42.0	26.0	25.0	25.0	18.0	17.0	17.0
Total Split (%)	15.0%	37.0%		20.0%	42.0%	42.0%	26.0%	25.0%	25.0%	18.0%	17.0%	17.0%
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	2.0		1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	46.7	38.1	100.0	43.7	31.7	31.7	35.2	26.2	26.2	42.9	30.5	30.5
Actuated g/C Ratio	0.47	0.38	1.00	0.44	0.32	0.32	0.35	0.26	0.26	0.43	0.30	0.30
v/c Ratio	0.84	0.78	0.15	0.16	0.71	0.29	0.18	0.29	0.17	0.40	0.27	0.47

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 69 (69%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 27.9
Intersection Capacity Utilization 85.9%
Analysis Period (min) 15

Splits and Phases: 1: Wilcox St. & Plum Creek Pkwy.





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	259	1047	239	43	800	178	166	141	88	215	153	344
v/c Ratio	0.84	0.78	0.15	0.16	0.71	0.29	0.18	0.29	0.17	0.40	0.27	0.47
Control Delay	40.6	32.2	0.2	19.3	44.1	13.5	19.2	34.8	0.7	22.2	30.4	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.6	32.2	0.2	19.3	44.1	13.5	19.2	34.8	0.7	22.2	30.4	5.9
Queue Length 50th (ft)	86	310	0	18	275	24	34	78	0	93	79	0
Queue Length 95th (ft)	#198	392	0	m40	337	97	56	138	0	127	118	34
Internal Link Dist (ft)		553			473			812			658	
Turn Bay Length (ft)	280		250	185			190		195	130		130
Base Capacity (vph)	312	1349	1564	366	1274	683	1255	482	525	562	573	726
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.78	0.15	0.12	0.63	0.26	0.13	0.29	0.17	0.38	0.27	0.47

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Twin Mesa Metropolitan District New Service Plan
SV2023-003
Planning Commission Supplemental Memo Page 320 of 1222

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	238	963	220	40	744	166	158	134	84	168	119	268
Future Volume (veh/h)	238	963	220	40	744	166	158	134	84	168	119	268
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1856	1856	1856	1885	1885	1885
Adj Flow Rate, veh/h	259	1047	0	43	800	178	166	141	88	215	153	344
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.95	0.95	0.95	0.78	0.78	0.78
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	1	1	1
Cap, veh/h	307	1164		221	1021	455	833	563	477	536	658	557
Arrive On Green	0.11	0.33	0.00	0.02	0.09	0.09	0.05	0.30	0.30	0.10	0.35	0.35
Sat Flow, veh/h	1781	3554	1585	1781	3554	1582	3428	1856	1571	1795	1885	1596
Grp Volume(v), veh/h	259	1047	0	43	800	178	166	141	88	215	153	344
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1582	1714	1856	1571	1795	1885	1596
Q Serve(g_s), s	9.9	28.1	0.0	1.6	22.0	10.6	3.3	5.7	4.1	7.9	5.8	17.9
Cycle Q Clear(g_c), s	9.9	28.1	0.0	1.6	22.0	10.6	3.3	5.7	4.1	7.9	5.8	17.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	307	1164		221	1021	455	833	563	477	536	658	557
V/C Ratio(X)	0.84	0.90		0.19	0.78	0.39	0.20	0.25	0.18	0.40	0.23	0.62
Avail Cap(c_a), veh/h	307	1164		382	1279	570	1403	563	477	609	658	557
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.90	0.90	0.90	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.1	32.1	0.0	25.6	42.2	37.0	21.7	26.2	25.7	19.3	23.1	27.0
Incr Delay (d2), s/veh	18.1	9.6	0.0	0.1	2.3	0.5	0.0	1.1	0.9	0.2	0.8	5.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	13.1	0.0	0.7	10.8	4.5	1.3	2.7	1.6	3.3	2.7	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.2	41.7	0.0	25.7	44.5	37.5	21.7	27.3	26.5	19.5	23.9	32.1
LnGrp LOS	D	D		C	D	D	C	C	C	B	C	C
Approach Vol, veh/h		1306	A		1021			395			712	
Approach Delay, s/veh		41.8			42.5			24.8			26.5	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	40.9	15.0	34.7	13.9	36.4	11.0	38.8
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	22.0	11.0	11.0	36.0	14.0	19.0	16.0	31.0
Max Q Clear Time (g_c+I1), s	5.3	19.9	11.9	24.0	9.9	7.7	3.6	30.1
Green Ext Time (p_c), s	0.2	0.0	0.0	4.7	0.1	1.1	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	36.9
HCM 6th LOS	D

Notes

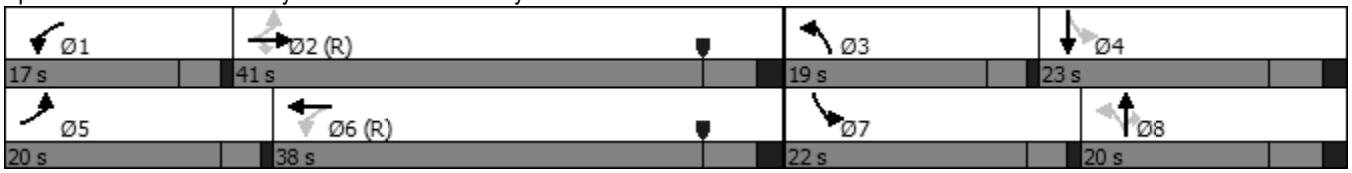
User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	154	954	168	132	564	203	115	223	226	125	188
Future Volume (vph)	154	954	168	132	564	203	115	223	226	125	188
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Free
Protected Phases	5	2		1	6	3	8		7	4	
Permitted Phases	2		2	6		8		8	4		Free
Detector Phase	5	2	2	1	6	3	8	8	7	4	
Switch Phase											
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0	3.0	5.0	5.0	3.0	5.0	
Minimum Split (s)	9.5	32.0	32.0	9.5	32.0	9.5	11.0	11.0	9.5	11.0	
Total Split (s)	20.0	41.0	41.0	17.0	38.0	19.0	20.0	20.0	22.0	23.0	
Total Split (%)	20.0%	41.0%	41.0%	17.0%	38.0%	19.0%	20.0%	20.0%	22.0%	23.0%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	6.0	4.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None	None	
Act Effct Green (s)	56.4	45.9	45.9	55.4	45.4	26.4	11.3	11.3	29.9	13.0	100.0
Actuated g/C Ratio	0.56	0.46	0.46	0.55	0.45	0.26	0.11	0.11	0.30	0.13	1.00
v/c Ratio	0.42	0.63	0.23	0.47	0.49	0.58	0.62	0.63	0.62	0.58	0.13

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 60 (60%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.63
Intersection Signal Delay: 19.8
Intersection Capacity Utilization 69.5%
Analysis Period (min) 15

Splits and Phases: 2: Perry St. & Plum Creek Pkwy.





Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	167	1037	183	139	776	231	131	253	260	144	216
v/c Ratio	0.42	0.63	0.23	0.47	0.49	0.58	0.62	0.63	0.62	0.58	0.13
Control Delay	6.6	18.8	6.2	18.2	15.4	31.7	54.7	12.7	32.8	49.8	0.2
Queue Delay	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.6	19.0	6.2	18.2	15.4	31.7	54.7	12.7	32.8	49.8	0.2
Queue Length 50th (ft)	7	311	29	31	103	112	80	0	129	88	0
Queue Length 95th (ft)	m24	415	m73	m82	143	160	135	65	178	139	0
Internal Link Dist (ft)		473			1330		455			497	
Turn Bay Length (ft)	170		70	100		185		65	120		120
Base Capacity (vph)	513	1640	782	382	1589	432	263	438	464	323	1615
Starvation Cap Reductn	0	156	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.70	0.23	0.36	0.49	0.53	0.50	0.58	0.56	0.45	0.13

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	154	954	168	132	564	173	203	115	223	226	125	188
Future Volume (veh/h)	154	954	168	132	564	173	203	115	223	226	125	188
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	167	1037	183	139	594	182	231	131	253	260	144	0
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.88	0.88	0.88	0.87	0.87	0.87
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	0	0	0
Cap, veh/h	483	1638	730	267	1215	371	407	264	223	405	291	
Arrive On Green	0.02	0.15	0.15	0.12	0.90	0.90	0.13	0.14	0.14	0.14	0.15	0.00
Sat Flow, veh/h	1795	3582	1596	1795	2701	826	1795	1885	1594	1810	1900	1610
Grp Volume(v), veh/h	167	1037	183	139	393	383	231	131	253	260	144	0
Grp Sat Flow(s),veh/h/ln	1795	1791	1596	1795	1791	1735	1795	1885	1594	1810	1900	1610
Q Serve(g_s), s	4.8	27.2	10.1	4.2	3.9	4.0	10.8	6.4	14.0	12.1	6.9	0.0
Cycle Q Clear(g_c), s	4.8	27.2	10.1	4.2	3.9	4.0	10.8	6.4	14.0	12.1	6.9	0.0
Prop In Lane	1.00		1.00	1.00		0.48	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	483	1638	730	267	806	781	407	264	223	405	291	
V/C Ratio(X)	0.35	0.63	0.25	0.52	0.49	0.49	0.57	0.50	1.13	0.64	0.50	
Avail Cap(c_a), veh/h	647	1638	730	391	806	781	446	264	223	475	323	
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.68	0.68	0.68	0.90	0.90	0.90	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	13.5	34.6	27.3	16.7	3.0	3.0	30.9	39.7	43.0	30.4	38.8	0.0
Incr Delay (d2), s/veh	0.1	1.3	0.6	0.5	1.9	2.0	0.7	1.1	100.9	1.3	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	13.2	4.3	1.5	1.3	1.3	4.6	3.0	11.6	5.3	3.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.6	35.8	27.9	17.2	4.9	4.9	31.6	40.8	143.9	31.8	39.8	0.0
LnGrp LOS	B	D	C	B	A	A	C	D	F	C	D	
Approach Vol, veh/h		1387			915			615			404	A
Approach Delay, s/veh		32.1			6.8			79.7			34.6	
Approach LOS		C			A			E			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.1	51.7	16.8	21.3	10.9	51.0	18.1	20.0
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	13.0	35.0	15.0	17.0	16.0	32.0	18.0	14.0
Max Q Clear Time (g_c+I1), s	6.2	29.2	12.8	8.9	6.8	6.0	14.1	16.0
Green Ext Time (p_c), s	0.1	3.5	0.1	0.3	0.1	5.2	0.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	34.3
HCM 6th LOS	C

Notes

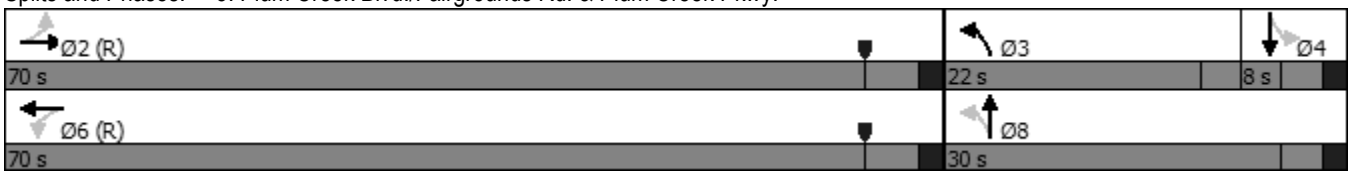
User approved pedestrian interval to be less than phase max green.

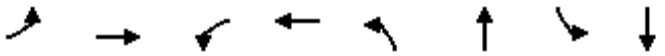
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	28	1064	29	632	229	0	1	1
Future Volume (vph)	28	1064	29	632	229	0	1	1
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases		2		6	3	8		4
Permitted Phases	2		6		8		4	
Detector Phase	2	2	6	6	3	8	4	4
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0	2.0	2.0
Minimum Split (s)	33.0	33.0	28.0	28.0	14.5	10.0	7.0	7.0
Total Split (s)	70.0	70.0	70.0	70.0	22.0	30.0	8.0	8.0
Total Split (%)	70.0%	70.0%	70.0%	70.0%	22.0%	30.0%	8.0%	8.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	3.0	5.0	5.0	5.0
Lead/Lag					Lead		Lag	Lag
Lead-Lag Optimize?					Yes		Yes	Yes
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	Max	Max	Max
Act Effct Green (s)	64.0	64.0	64.0	64.0	27.0	25.0	5.9	5.9
Actuated g/C Ratio	0.64	0.64	0.64	0.64	0.27	0.25	0.06	0.06
v/c Ratio	0.08	0.70	0.30	0.35	0.68	0.07	0.02	0.13

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 85 (85%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 11.9
Intersection Capacity Utilization 68.0%
Analysis Period (min) 15

Splits and Phases: 3: Plum Creek Blvd./Fairgrounds Rd. & Plum Creek Pkwy.





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	32	1564	36	782	266	33	2	14
v/c Ratio	0.08	0.70	0.30	0.35	0.68	0.07	0.02	0.13
Control Delay	5.2	8.6	16.1	8.8	41.4	0.3	48.0	28.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.2	8.6	16.1	8.8	41.4	0.3	48.0	28.8
Queue Length 50th (ft)	5	127	9	110	146	0	1	1
Queue Length 95th (ft)	m9	189	27	124	215	0	6	12
Internal Link Dist (ft)		1330		637		613		434
Turn Bay Length (ft)	70		55				110	
Base Capacity (vph)	397	2224	120	2264	414	465	82	109
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.70	0.30	0.35	0.64	0.07	0.02	0.13

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	1064	312	29	632	2	229	0	28	1	1	7
Future Volume (veh/h)	28	1064	312	29	632	2	229	0	28	1	1	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1870	1870	1870	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	32	1209	355	36	780	2	266	0	33	2	2	12
Peak Hour Factor	0.88	0.88	0.88	0.81	0.81	0.81	0.86	0.86	0.86	0.60	0.60	0.60
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	0	0	0
Cap, veh/h	449	1755	506	283	2327	6	430	0	399	165	16	94
Arrive On Green	1.00	1.00	1.00	0.64	0.64	0.64	0.15	0.00	0.25	0.07	0.07	0.07
Sat Flow, veh/h	696	2742	790	329	3636	9	1795	0	1598	1398	235	1411
Grp Volume(v), veh/h	32	782	782	36	381	401	266	0	33	2	0	14
Grp Sat Flow(s),veh/h/ln	696	1791	1741	329	1777	1869	1795	0	1598	1398	0	1646
Q Serve(g_s), s	0.8	0.0	0.0	4.4	9.8	9.8	13.2	0.0	1.6	0.1	0.0	0.8
Cycle Q Clear(g_c), s	10.6	0.0	0.0	4.4	9.8	9.8	13.2	0.0	1.6	0.1	0.0	0.8
Prop In Lane	1.00		0.45	1.00		0.00	1.00		1.00	1.00		0.86
Lane Grp Cap(c), veh/h	449	1146	1114	283	1137	1196	430	0	399	165	0	109
V/C Ratio(X)	0.07	0.68	0.70	0.13	0.34	0.34	0.62	0.00	0.08	0.01	0.00	0.13
Avail Cap(c_a), veh/h	449	1146	1114	283	1137	1196	495	0	399	165	0	109
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.74	0.74	0.74	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	0.8	0.0	0.0	7.3	8.2	8.2	34.0	0.0	28.7	43.6	0.0	44.0
Incr Delay (d2), s/veh	0.2	2.5	2.8	0.9	0.8	0.8	1.0	0.0	0.4	0.1	0.0	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.8	0.9	0.4	3.6	3.8	5.8	0.0	0.6	0.1	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	1.0	2.5	2.8	8.2	9.0	9.0	34.9	0.0	29.1	43.8	0.0	46.4
LnGrp LOS	A	A	A	A	A	A	C	A	C	D	A	D
Approach Vol, veh/h		1596			818			299			16	
Approach Delay, s/veh		2.6			9.0			34.3			46.0	
Approach LOS		A			A			C			D	

Timer - Assigned Phs	2	3	4	6	8
Phs Duration (G+Y+Rc), s	70.0	18.4	11.6	70.0	30.0
Change Period (Y+Rc), s	6.0	3.0	5.0	6.0	5.0
Max Green Setting (Gmax), s	64.0	19.0	3.0	64.0	25.0
Max Q Clear Time (g_c+I1), s	12.6	15.2	2.8	11.8	3.6
Green Ext Time (p_c), s	18.2	0.2	0.0	6.6	0.1

Intersection Summary	
HCM 6th Ctrl Delay	8.2
HCM 6th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑	↗	↰	↑
Traffic Volume (veh/h)	0	0	172	1	217	292
Future Volume (Veh/h)	0	0	172	1	217	292
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.88	0.88	0.88	0.88	0.81	0.81
Hourly flow rate (vph)	0	0	195	1	268	360
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1091	195			196	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1091	195			196	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			81	
cM capacity (veh/h)	192	846			1383	

Direction, Lane #	NB 1	NB 2	SB 1	SB 2
Volume Total	195	1	268	360
Volume Left	0	0	268	0
Volume Right	0	1	0	0
cSH	1700	1700	1383	1700
Volume to Capacity	0.11	0.00	0.19	0.21
Queue Length 95th (ft)	0	0	18	0
Control Delay (s)	0.0	0.0	8.2	0.0
Lane LOS			A	
Approach Delay (s)	0.0		3.5	
Approach LOS				

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	27.7%	ICU Level of Service	A
Analysis Period (min)	15		

Twin Mesa Metropolitan District New Service Plan
SV2023-003
Planning Commission Supplemental Memo Page 328 of 1222

DELAY (CONTROL)

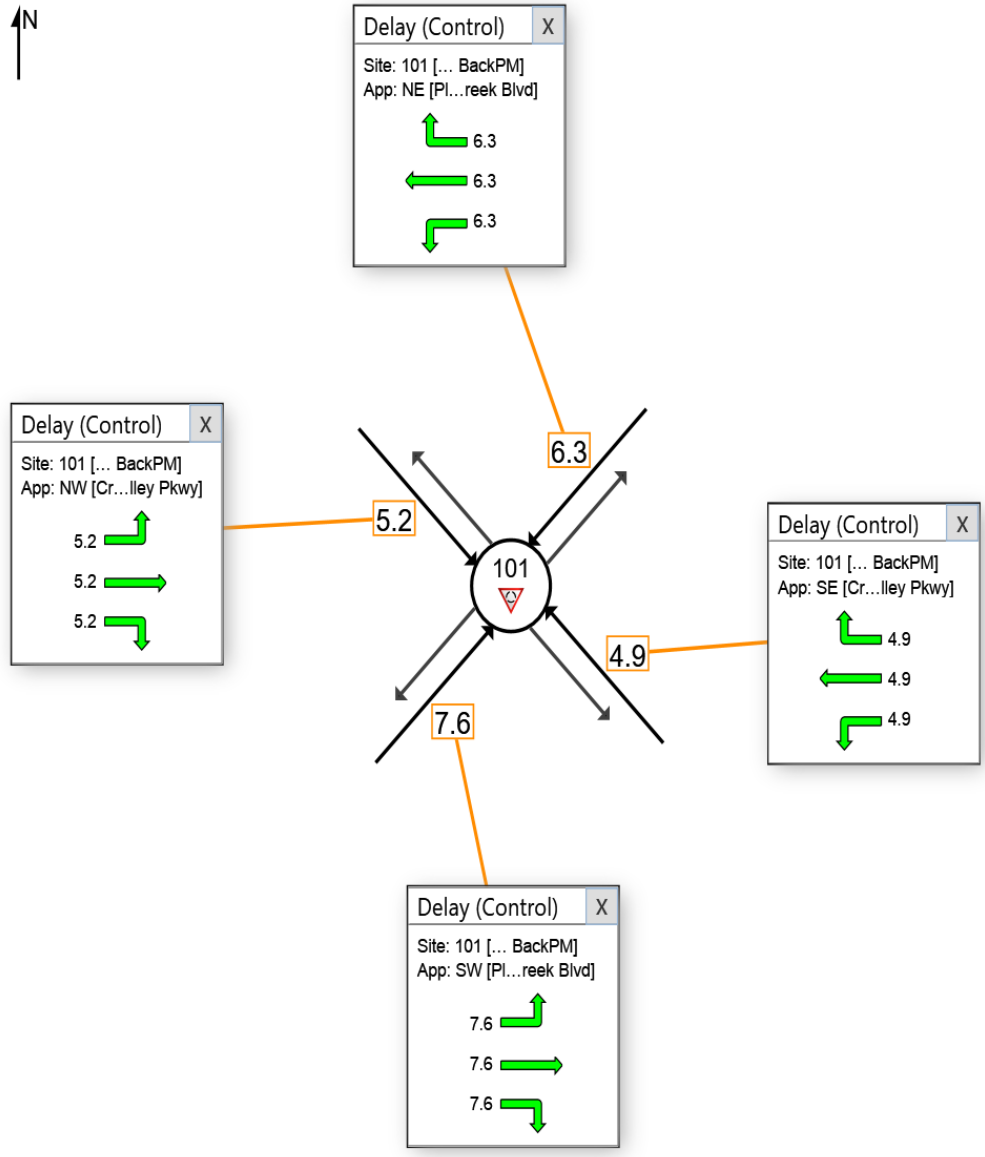
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 101 [Int #5_2025 Back_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

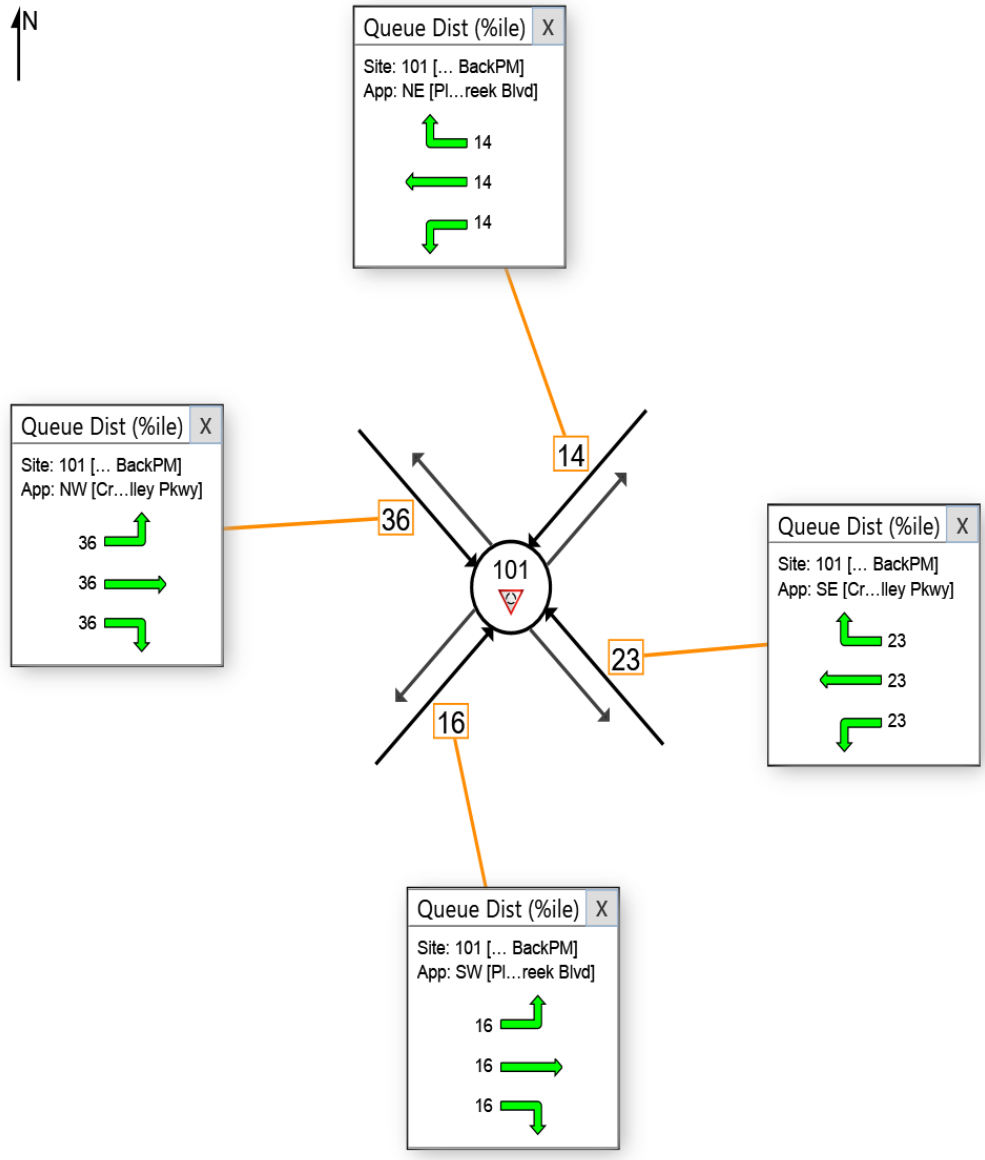
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 101 [Int #5_2025 Back_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

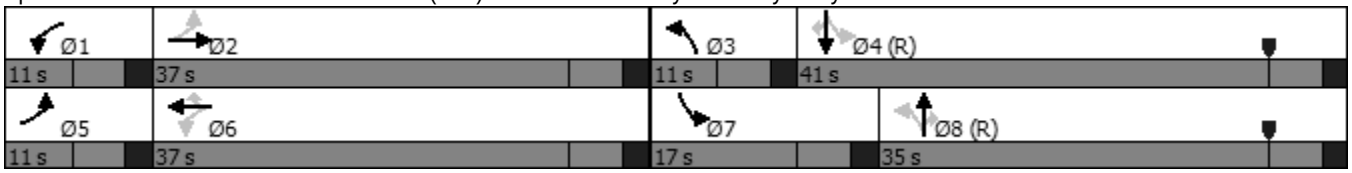
Close All Popups



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	7	5	10	16	65	4	95	35	150	128	10
Future Volume (vph)	7	5	10	16	65	4	95	35	150	128	10
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2	1	6		3	8		7	4	
Permitted Phases	2		6		6	8		8	4		4
Detector Phase	5	2	1	6	6	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.0	33.0	11.0	33.0	33.0	11.0	33.0	33.0	11.0	33.0	33.0
Total Split (s)	11.0	37.0	11.0	37.0	37.0	11.0	35.0	35.0	17.0	41.0	41.0
Total Split (%)	11.0%	37.0%	11.0%	37.0%	37.0%	11.0%	35.0%	35.0%	17.0%	41.0%	41.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	40.8	39.8	40.8	39.8	39.8	34.8	29.8	29.8	46.0	43.8	43.8
Actuated g/C Ratio	0.41	0.40	0.41	0.40	0.40	0.35	0.30	0.30	0.46	0.44	0.44
v/c Ratio	0.02	0.01	0.02	0.02	0.10	0.01	0.20	0.07	0.33	0.19	0.02

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 52 (52%), Referenced to phase 4:SBTL and 8:NBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.33
Intersection Signal Delay: 16.5
Intersection Capacity Utilization 40.0%
Analysis Period (min) 15

Splits and Phases: 7: Dawson Trail Blvd. (new) & Territorial Rd./Crystal Valley Pkwy.





Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	12	8	11	18	72	5	109	40	179	152	12
v/c Ratio	0.02	0.01	0.02	0.02	0.10	0.01	0.20	0.07	0.33	0.19	0.02
Control Delay	17.3	21.0	17.2	20.7	0.3	15.5	27.8	0.2	18.1	19.2	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.3	21.0	17.2	20.7	0.3	15.5	27.8	0.2	18.1	19.2	0.0
Queue Length 50th (ft)	4	3	4	7	0	2	52	0	66	55	0
Queue Length 95th (ft)	10	10	15	24	0	8	92	0	102	108	0
Internal Link Dist (ft)		1067		1733			1614			1008	
Turn Bay Length (ft)	200		500			500		1000	500		500
Base Capacity (vph)	597	741	589	741	728	454	555	587	555	792	766
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.01	0.02	0.02	0.10	0.01	0.20	0.07	0.32	0.19	0.02

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	5	0	10	16	65	4	95	35	150	128	10
Future Volume (veh/h)	7	5	0	10	16	65	4	95	35	150	128	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900	1870	1870	1870	1870	1870	1870	1870	1826	1826
Adj Flow Rate, veh/h	12	8	0	11	18	72	5	109	40	179	152	12
Peak Hour Factor	0.60	0.60	0.60	0.90	0.90	0.90	0.87	0.87	0.87	0.84	0.84	0.84
Percent Heavy Veh, %	0	2	0	2	2	2	2	2	2	2	5	5
Cap, veh/h	500	582	0	529	580	491	516	663	562	607	784	664
Arrive On Green	0.01	0.31	0.00	0.01	0.31	0.31	0.01	0.35	0.35	0.08	0.43	0.43
Sat Flow, veh/h	1810	1870	0	1781	1870	1585	1781	1870	1585	1781	1826	1547
Grp Volume(v), veh/h	12	8	0	11	18	72	5	109	40	179	152	12
Grp Sat Flow(s),veh/h/ln	1810	1870	0	1781	1870	1585	1781	1870	1585	1781	1826	1547
Q Serve(g_s), s	0.5	0.3	0.0	0.4	0.7	3.3	0.2	4.0	1.7	6.1	5.2	0.4
Cycle Q Clear(g_c), s	0.5	0.3	0.0	0.4	0.7	3.3	0.2	4.0	1.7	6.1	5.2	0.4
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	500	582	0	529	580	491	516	663	562	607	784	664
V/C Ratio(X)	0.02	0.01	0.00	0.02	0.03	0.15	0.01	0.16	0.07	0.30	0.19	0.02
Avail Cap(c_a), veh/h	565	582	0	595	580	491	594	663	562	657	784	664
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.87	0.87	0.87	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.0	23.8	0.0	23.0	24.0	24.9	20.5	22.1	21.4	16.7	17.8	16.4
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.1	0.5	0.0	0.5	0.2	0.3	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.1	0.0	0.2	0.3	1.3	0.1	1.8	0.7	2.5	2.3	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.0	23.9	0.0	23.1	24.1	25.5	20.5	22.7	21.6	16.9	18.3	16.5
LnGrp LOS	C	C	A	C	C	C	C	C	C	B	B	B
Approach Vol, veh/h		20			101			154			343	
Approach Delay, s/veh		23.4			25.0			22.3			17.5	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.3	37.1	6.6	48.9	7.4	37.0	14.2	41.4
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	5.0	31.0	5.0	35.0	5.0	31.0	11.0	29.0
Max Q Clear Time (g_c+I1), s	2.4	2.3	2.2	7.2	2.5	5.3	8.1	6.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.9	0.0	0.3	0.1	0.7

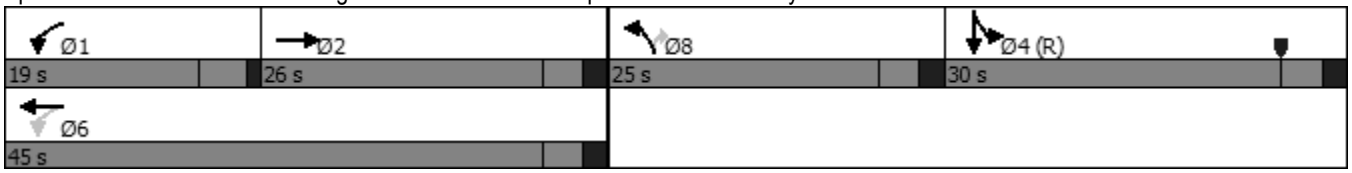
Intersection Summary	
HCM 6th Ctrl Delay	20.1
HCM 6th LOS	C

Twin Mesa Metropolitan District New Service Plan
SV2023-003
Planning Commission Supplemental Memo Page 333 of 1222

Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	575	215	535	40	165	1150	155	195
Future Volume (vph)	575	215	535	40	165	1150	155	195
Turn Type	NA	pm+pt	NA	Prot	Perm	Split	NA	Free
Protected Phases	2	1	6	8		4	4	
Permitted Phases		6			8			Free
Detector Phase	2	1	6	8	8	4	4	
Switch Phase								
Minimum Initial (s)	10.0	5.0	10.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	30.0	9.5	30.0	10.0	10.0	10.0	10.0	
Total Split (s)	26.0	19.0	45.0	25.0	25.0	30.0	30.0	
Total Split (%)	26.0%	19.0%	45.0%	25.0%	25.0%	30.0%	30.0%	
Yellow Time (s)	3.0	3.5	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	1.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	4.5	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lag	Lead		Lead	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	
Recall Mode	Max	None	Max	None	None	C-Max	C-Max	
Act Effct Green (s)	22.5	40.5	40.0	8.3	8.3	36.7	36.7	100.0
Actuated g/C Ratio	0.22	0.40	0.40	0.08	0.08	0.37	0.37	1.00
v/c Ratio	0.66	0.71	0.39	0.29	0.60	0.76	0.77	0.13

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 4:SBTL, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 33.8
Intersection Capacity Utilization 69.3%
Analysis Period (min) 15

Splits and Phases: 8: W. Frontage Road/I-25 SB Off-Ramp & Plum Creek Pkwy





Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	766	224	557	42	172	898	461	203
v/c Ratio	0.66	0.71	0.39	0.29	0.60	0.76	0.77	0.13
Control Delay	35.8	44.6	30.9	47.0	15.7	33.5	38.7	0.2
Queue Delay	0.1	3.2	7.2	0.0	0.1	0.1	0.3	0.0
Total Delay	35.9	47.9	38.1	47.0	15.8	33.6	39.0	0.2
Queue Length 50th (ft)	152	126	154	26	0	269	278	0
Queue Length 95th (ft)	198	207	220	57	60	#403	#496	0
Internal Link Dist (ft)	437		181				388	
Turn Bay Length (ft)				350				160
Base Capacity (vph)	1156	339	1415	354	454	1183	602	1583
Starvation Cap Reductn	0	52	802	0	0	0	0	0
Spillback Cap Reductn	28	0	0	0	12	21	11	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.78	0.91	0.12	0.39	0.77	0.78	0.13

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	575	160	215	535	0	40	0	165	1150	155	195
Future Volume (vph)	0	575	160	215	535	0	40	0	165	1150	155	195
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		4.5	5.0		5.0		5.0	5.0	5.0	4.0
Lane Util. Factor		0.91		1.00	0.95		1.00		1.00	0.91	0.91	1.00
Frt		0.97		1.00	1.00		1.00		0.85	1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95	0.97	1.00
Satd. Flow (prot)		4919		1770	3539		1770		1583	3221	1642	1583
Flt Permitted		1.00		0.17	1.00		0.95		1.00	0.95	0.97	1.00
Satd. Flow (perm)		4919		318	3539		1770		1583	3221	1642	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	599	167	224	557	0	42	0	172	1198	161	203
RTOR Reduction (vph)	0	50	0	0	0	0	0	0	158	0	0	0
Lane Group Flow (vph)	0	716	0	224	557	0	42	0	14	898	461	203
Turn Type		NA		pm+pt	NA		Prot		Perm	Split	NA	Free
Protected Phases		2		1	6		8			4	4	
Permitted Phases				6					8			Free
Actuated Green, G (s)		22.5		40.0	40.0		8.3		8.3	36.7	36.7	100.0
Effective Green, g (s)		22.5		40.0	40.0		8.3		8.3	36.7	36.7	100.0
Actuated g/C Ratio		0.22		0.40	0.40		0.08		0.08	0.37	0.37	1.00
Clearance Time (s)		5.0		4.5	5.0		5.0		5.0	5.0	5.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		1106		315	1415		146		131	1182	602	1583
v/s Ratio Prot		0.15		c0.09	0.16		c0.02			0.28	c0.28	
v/s Ratio Perm				c0.19					0.01			0.13
v/c Ratio		0.65		0.71	0.39		0.29		0.11	0.76	0.77	0.13
Uniform Delay, d1		35.2		22.1	21.4		43.1		42.4	27.8	27.9	0.0
Progression Factor		1.00		1.60	1.40		1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		2.9		6.4	0.7		1.1		0.4	4.6	9.0	0.2
Delay (s)		38.1		41.8	30.6		44.2		42.8	32.4	36.9	0.2
Level of Service		D		D	C		D		D	C	D	A
Approach Delay (s)		38.1			33.8			43.1			29.5	
Approach LOS		D			C			D			C	

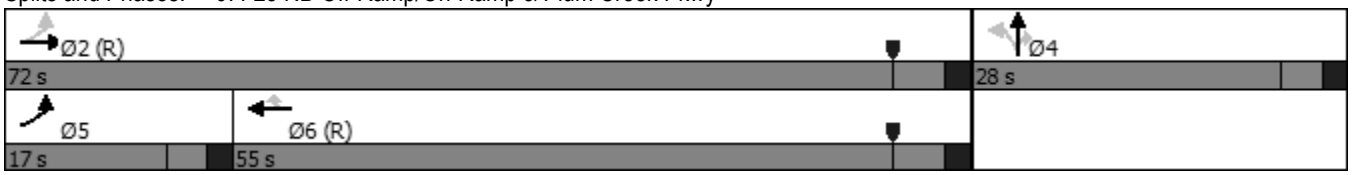
Intersection Summary			
HCM 2000 Control Delay	33.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	225	1583	597	935	125	5	175
Future Volume (vph)	225	1583	597	935	125	5	175
Turn Type	pm+pt	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6			4	
Permitted Phases	2			6	4		4
Detector Phase	5	2	6	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0	5.0
Minimum Split (s)	10.0	31.0	24.0	24.0	40.0	40.0	40.0
Total Split (s)	17.0	72.0	55.0	55.0	28.0	28.0	28.0
Total Split (%)	17.0%	72.0%	55.0%	55.0%	28.0%	28.0%	28.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max
Act Effct Green (s)	67.0	66.0	50.7	50.7	23.0	23.0	23.0
Actuated g/C Ratio	0.67	0.66	0.51	0.51	0.23	0.23	0.23
v/c Ratio	0.68	0.48	0.62	0.50	0.28	0.28	0.24

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 83 (83%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 13.1
Intersection Capacity Utilization 69.8%
Analysis Period (min) 15

Splits and Phases: 9: I-25 NB Off-Ramp/On-Ramp & Plum Creek Pkwy





Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	230	1615	1076	487	109	103	100
v/c Ratio	0.68	0.48	0.62	0.50	0.28	0.28	0.24
Control Delay	25.0	10.0	14.9	3.4	34.1	22.3	10.6
Queue Delay	1.0	1.0	0.0	0.0	0.4	0.4	0.0
Total Delay	26.0	11.0	14.9	3.4	34.5	22.7	10.6
Queue Length 50th (ft)	77	143	194	0	61	36	7
Queue Length 95th (ft)	m114	184	273	57	111	86	50
Internal Link Dist (ft)		181	431			480	
Turn Bay Length (ft)					350		150
Base Capacity (vph)	364	3356	1739	971	386	372	412
Starvation Cap Reductn	31	1373	0	0	0	0	0
Spillback Cap Reductn	0	0	13	0	78	69	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.81	0.62	0.50	0.35	0.34	0.24

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	225	1583	0	0	597	935	125	5	175	0	0	0
Future Volume (veh/h)	225	1583	0	0	597	935	125	5	175	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	230	1615	0	0	609	954	194	0	112			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	316	3370	0	0	989	1677	819	0	365			
Arrive On Green	0.16	1.00	0.00	0.00	0.53	0.53	0.23	0.00	0.23			
Sat Flow, veh/h	1781	5274	0	0	1870	3170	3563	0	1585			
Grp Volume(v), veh/h	230	1615	0	0	609	954	194	0	112			
Grp Sat Flow(s),veh/h/ln	1781	1702	0	0	1870	1585	1781	0	1585			
Q Serve(g_s), s	5.9	0.0	0.0	0.0	22.7	20.3	4.4	0.0	5.9			
Cycle Q Clear(g_c), s	5.9	0.0	0.0	0.0	22.7	20.3	4.4	0.0	5.9			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	316	3370	0	0	989	1677	819	0	365			
V/C Ratio(X)	0.73	0.48	0.00	0.00	0.62	0.57	0.24	0.00	0.31			
Avail Cap(c_a), veh/h	385	3370	0	0	989	1677	819	0	365			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.66	0.66	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	14.5	0.0	0.0	0.0	16.5	15.9	31.4	0.0	31.9			
Incr Delay (d2), s/veh	3.6	0.3	0.0	0.0	2.9	1.4	0.7	0.0	2.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.6	0.1	0.0	0.0	10.0	7.3	2.0	0.0	5.7			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.1	0.3	0.0	0.0	19.3	17.3	32.0	0.0	34.1			
LnGrp LOS	B	A	A	A	B	B	C	A	C			
Approach Vol, veh/h		1845			1563			306				
Approach Delay, s/veh		2.5			18.1			32.8				
Approach LOS		A			B			C				

Timer - Assigned Phs		2		4	5	6			
Phs Duration (G+Y+Rc), s		72.0		28.0	13.1	58.9			
Change Period (Y+Rc), s		6.0		5.0	5.0	6.0			
Max Green Setting (Gmax), s		66.0		23.0	12.0	49.0			
Max Q Clear Time (g_c+I1), s		2.0		7.9	7.9	24.7			
Green Ext Time (p_c), s		20.3		0.9	0.2	9.7			

Intersection Summary		
HCM 6th Ctrl Delay	11.6	
HCM 6th LOS	B	

Notes

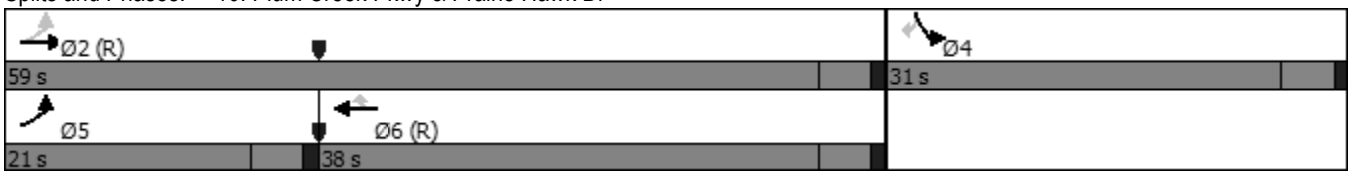
User approved pedestrian interval to be less than phase max green.

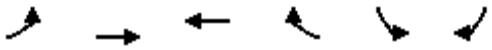
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	32	596	853	98	275	38
Future Volume (vph)	32	596	853	98	275	38
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	21.0	59.0	38.0	38.0	31.0	31.0
Total Split (%)	23.3%	65.6%	42.2%	42.2%	34.4%	34.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max
Act Effct Green (s)	54.5	54.5	47.8	47.8	26.5	26.5
Actuated g/C Ratio	0.61	0.61	0.53	0.53	0.29	0.29
v/c Ratio	0.11	0.30	0.49	0.12	0.30	0.08

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 3 (3%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.49
Intersection Signal Delay: 14.0
Intersection Capacity Utilization 41.9%
Analysis Period (min) 15

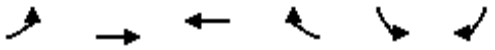
Splits and Phases: 10: Plum Creek Pkwy & Prairie Hawk Dr





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	35	648	927	107	299	41
v/c Ratio	0.11	0.30	0.49	0.12	0.30	0.08
Control Delay	7.9	9.0	15.5	3.1	25.5	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.9	9.0	15.5	3.1	25.5	8.1
Queue Length 50th (ft)	7	85	184	0	67	0
Queue Length 95th (ft)	19	115	246	26	101	23
Internal Link Dist (ft)		246	922		698	
Turn Bay Length (ft)	230			230		250
Base Capacity (vph)	487	2143	1879	890	1010	495
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.30	0.49	0.12	0.30	0.08

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	32	596	853	98	275	38
Future Volume (veh/h)	32	596	853	98	275	38
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	35	648	927	0	299	41
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	352	2152	1859		1018	467
Arrive On Green	0.03	0.61	0.52	0.00	0.29	0.29
Sat Flow, veh/h	1781	3647	3647	1585	3456	1585
Grp Volume(v), veh/h	35	648	927	0	299	41
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1728	1585
Q Serve(g_s), s	0.8	7.9	15.1	0.0	6.0	1.7
Cycle Q Clear(g_c), s	0.8	7.9	15.1	0.0	6.0	1.7
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	352	2152	1859		1018	467
V/C Ratio(X)	0.10	0.30	0.50		0.29	0.09
Avail Cap(c_a), veh/h	621	2152	1859		1018	467
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	9.9	8.6	13.8	0.0	24.5	23.0
Incr Delay (d2), s/veh	0.1	0.4	1.0	0.0	0.7	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	2.6	5.5	0.0	2.5	1.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	10.0	8.9	14.8	0.0	25.3	23.4
LnGrp LOS	B	A	B		C	C
Approach Vol, veh/h		683	927	A	340	
Approach Delay, s/veh		9.0	14.8		25.0	
Approach LOS		A	B		C	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		59.0		31.0	7.4	51.6
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		54.5		26.5	16.5	33.5
Max Q Clear Time (g_c+I1), s		9.9		8.0	2.8	17.1
Green Ext Time (p_c), s		4.5		1.1	0.0	5.5

Intersection Summary		
HCM 6th Ctrl Delay		14.5
HCM 6th LOS		B

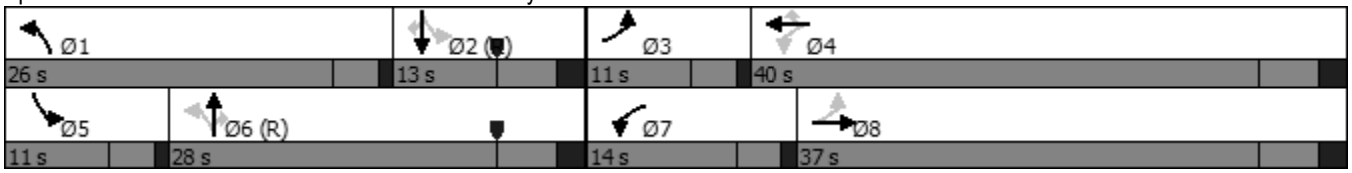
Notes

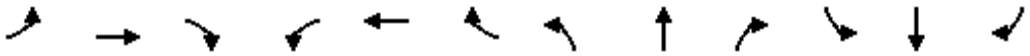
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	212	835	277	73	801	157	234	124	67	156	164	224
Future Volume (vph)	212	835	277	73	801	157	234	124	67	156	164	224
Turn Type	pm+pt	NA	Free	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		Free	4		4	6		6	2		2
Detector Phase	3	8		7	4	4	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	5.0	10.0	10.0	5.0	4.0	4.0
Minimum Split (s)	9.5	31.0		14.5	31.0	31.0	9.5	16.0	16.0	9.5	10.0	10.0
Total Split (s)	11.0	37.0		14.0	40.0	40.0	26.0	28.0	28.0	11.0	13.0	13.0
Total Split (%)	12.2%	41.1%		15.6%	44.4%	44.4%	28.9%	31.1%	31.1%	12.2%	14.4%	14.4%
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	2.0		1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	38.3	30.7	90.0	42.9	30.9	30.9	35.0	24.5	24.5	33.2	23.6	23.6
Actuated g/C Ratio	0.43	0.34	1.00	0.48	0.34	0.34	0.39	0.27	0.27	0.37	0.26	0.26
v/c Ratio	0.93	0.73	0.18	0.27	0.76	0.28	0.30	0.28	0.15	0.37	0.40	0.44

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 32 (36%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 25.3
Intersection Capacity Utilization 84.2%
Analysis Period (min) 15

Splits and Phases: 1: Wilcox St. & Plum Creek Pkwy.





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	223	879	292	85	931	183	266	141	76	188	198	270
v/c Ratio	0.93	0.73	0.18	0.27	0.76	0.28	0.30	0.28	0.15	0.37	0.40	0.44
Control Delay	61.4	30.5	0.3	14.2	31.7	10.2	18.1	29.0	1.6	21.6	32.5	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.4	30.5	0.3	14.2	31.7	10.2	18.1	29.0	1.6	21.6	32.5	6.6
Queue Length 50th (ft)	68	232	0	34	275	35	48	66	0	69	95	0
Queue Length 95th (ft)	#194	296	0	m53	315	78	75	115	6	111	155	47
Internal Link Dist (ft)		553			473			812			658	
Turn Bay Length (ft)	280		250	185			190		195	130		130
Base Capacity (vph)	240	1252	1583	311	1350	704	1182	503	518	504	489	614
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.70	0.18	0.27	0.69	0.26	0.23	0.28	0.15	0.37	0.40	0.44

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	212	835	277	73	801	157	234	124	67	156	164	224
Future Volume (veh/h)	212	835	277	73	801	157	234	124	67	156	164	224
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1885	1885	1885	1856	1856	1856	1870	1870	1870
Adj Flow Rate, veh/h	223	879	0	85	931	183	266	141	76	188	198	270
Peak Hour Factor	0.95	0.95	0.95	0.86	0.86	0.86	0.88	0.88	0.88	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2	1	1	1	3	3	3	2	2	2
Cap, veh/h	255	1089		306	1170	521	805	549	464	495	552	467
Arrive On Green	0.08	0.31	0.00	0.03	0.11	0.11	0.08	0.30	0.30	0.08	0.30	0.30
Sat Flow, veh/h	1781	3554	1585	1795	3582	1595	3428	1856	1569	1781	1870	1582
Grp Volume(v), veh/h	223	879	0	85	931	183	266	141	76	188	198	270
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1795	1791	1595	1714	1856	1569	1781	1870	1582
Q Serve(g_s), s	7.0	20.5	0.0	2.8	22.8	9.6	4.7	5.2	3.2	6.7	7.5	13.1
Cycle Q Clear(g_c), s	7.0	20.5	0.0	2.8	22.8	9.6	4.7	5.2	3.2	6.7	7.5	13.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	255	1089		306	1170	521	805	549	464	495	552	467
V/C Ratio(X)	0.87	0.81		0.28	0.80	0.35	0.33	0.26	0.16	0.38	0.36	0.58
Avail Cap(c_a), veh/h	255	1224		330	1353	603	1375	549	464	495	552	467
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.82	0.82	0.82	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.1	28.8	0.0	20.9	37.2	31.3	19.5	24.2	23.5	20.0	25.0	27.0
Incr Delay (d2), s/veh	25.6	3.7	0.0	0.1	2.4	0.3	0.1	1.1	0.8	0.2	1.8	5.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	8.9	0.0	1.1	11.2	4.0	1.9	2.5	1.3	2.8	3.6	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.8	32.4	0.0	21.1	39.7	31.6	19.6	25.3	24.2	20.1	26.8	32.1
LnGrp LOS	D	C		C	D	C	B	C	C	C	C	C
Approach Vol, veh/h		1102	A		1199			483			656	
Approach Delay, s/veh		36.2			37.1			22.0			27.1	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	32.6	11.0	35.4	11.0	32.6	12.8	33.6
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	22.0	7.0	7.0	34.0	7.0	22.0	10.0	31.0
Max Q Clear Time (g_c+I1), s	6.7	15.1	9.0	24.8	8.7	7.2	4.8	22.5
Green Ext Time (p_c), s	0.3	0.0	0.0	4.6	0.0	1.2	0.0	3.7

Intersection Summary	
HCM 6th Ctrl Delay	32.8
HCM 6th LOS	C

Notes

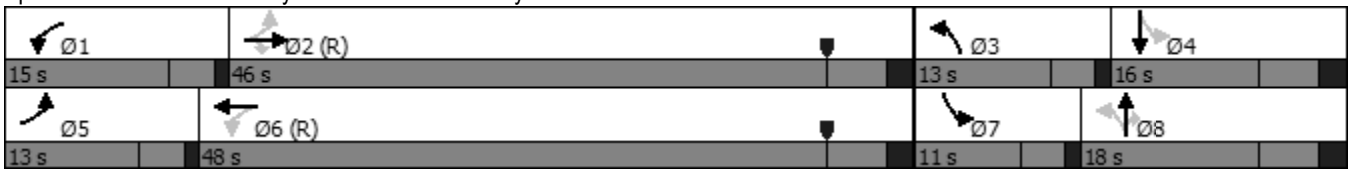
User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	185	748	145	146	718	191	111	142	185	118	187
Future Volume (vph)	185	748	145	146	718	191	111	142	185	118	187
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Free
Protected Phases	5	2		1	6	3	8		7	4	
Permitted Phases	2		2	6		8		8	4		Free
Detector Phase	5	2	2	1	6	3	8	8	7	4	
Switch Phase											
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0	3.0	5.0	5.0	3.0	5.0	
Minimum Split (s)	9.5	32.0	32.0	9.5	32.0	9.5	11.0	11.0	9.5	11.0	
Total Split (s)	13.0	46.0	46.0	15.0	48.0	13.0	18.0	18.0	11.0	16.0	
Total Split (%)	14.4%	51.1%	51.1%	16.7%	53.3%	14.4%	20.0%	20.0%	12.2%	17.8%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	6.0	4.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None	None	
Act Effct Green (s)	54.2	44.7	44.7	54.0	44.6	21.6	10.9	10.9	18.1	9.1	90.0
Actuated g/C Ratio	0.60	0.50	0.50	0.60	0.50	0.24	0.12	0.12	0.20	0.10	1.00
v/c Ratio	0.57	0.43	0.18	0.38	0.61	0.64	0.53	0.47	0.66	0.65	0.12

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 41 (46%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 24.9
Intersection Capacity Utilization 67.4%
Analysis Period (min) 15

Splits and Phases: 2: Perry St. & Plum Creek Pkwy.





Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	189	763	148	170	1056	208	121	154	197	126	199
v/c Ratio	0.57	0.43	0.18	0.38	0.61	0.64	0.53	0.47	0.66	0.65	0.12
Control Delay	12.2	19.6	9.3	16.0	30.0	37.5	45.9	11.5	40.1	55.2	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.2	19.6	9.3	16.0	30.0	37.5	45.9	11.5	40.1	55.2	0.2
Queue Length 50th (ft)	49	205	42	57	249	96	65	0	91	69	0
Queue Length 95th (ft)	m60	273	m79	103	313	161	120	54	153	#136	0
Internal Link Dist (ft)		473			1330		455			497	
Turn Bay Length (ft)	170		70	100		185		65	120		120
Base Capacity (vph)	358	1774	842	513	1732	331	250	343	299	211	1615
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.43	0.18	0.33	0.61	0.63	0.48	0.45	0.66	0.60	0.12

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	185	748	145	146	718	190	191	111	142	185	118	187
Future Volume (veh/h)	185	748	145	146	718	190	191	111	142	185	118	187
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	189	763	148	170	835	221	208	121	154	197	126	0
Peak Hour Factor	0.98	0.98	0.98	0.86	0.86	0.86	0.92	0.92	0.92	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	0	0	0
Cap, veh/h	481	1837	818	400	1429	378	302	225	190	287	185	
Arrive On Green	0.02	0.17	0.17	0.14	1.00	1.00	0.10	0.12	0.12	0.08	0.10	0.00
Sat Flow, veh/h	1795	3582	1594	1795	2800	741	1795	1885	1586	1810	1900	1610
Grp Volume(v), veh/h	189	763	148	170	534	522	208	121	154	197	126	0
Grp Sat Flow(s),veh/h/ln	1795	1791	1594	1795	1791	1750	1795	1885	1586	1810	1900	1610
Q Serve(g_s), s	4.3	17.1	7.2	4.1	0.0	0.0	9.0	5.4	8.5	7.0	5.8	0.0
Cycle Q Clear(g_c), s	4.3	17.1	7.2	4.1	0.0	0.0	9.0	5.4	8.5	7.0	5.8	0.0
Prop In Lane	1.00		1.00	1.00		0.42	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	481	1837	818	400	914	893	302	225	190	287	185	
V/C Ratio(X)	0.39	0.42	0.18	0.42	0.58	0.58	0.69	0.54	0.81	0.69	0.68	
Avail Cap(c_a), veh/h	534	1837	818	498	914	893	302	251	211	287	211	
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.73	0.73	0.73	0.78	0.78	0.78	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	9.3	25.3	21.2	10.2	0.0	0.0	33.3	37.3	38.6	35.4	39.3	0.0
Incr Delay (d2), s/veh	0.1	0.5	0.4	0.2	2.1	2.2	5.5	1.5	18.4	5.6	6.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	8.2	2.8	1.3	0.5	0.5	4.4	2.5	4.2	4.6	3.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.4	25.8	21.5	10.4	2.1	2.2	38.7	38.7	57.0	41.0	45.7	0.0
LnGrp LOS	A	C	C	B	A	A	D	D	E	D	D	
Approach Vol, veh/h		1100			1226			483			323	A
Approach Delay, s/veh		22.4			3.3			44.6			42.8	
Approach LOS		C			A			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.1	52.2	13.0	14.8	10.3	51.9	11.0	16.8
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	11.0	40.0	9.0	10.0	9.0	42.0	7.0	12.0
Max Q Clear Time (g_c+I1), s	6.1	19.1	11.0	7.8	6.3	2.0	9.0	10.5
Green Ext Time (p_c), s	0.1	5.7	0.0	0.1	0.0	8.5	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	20.5
HCM 6th LOS	C

Notes

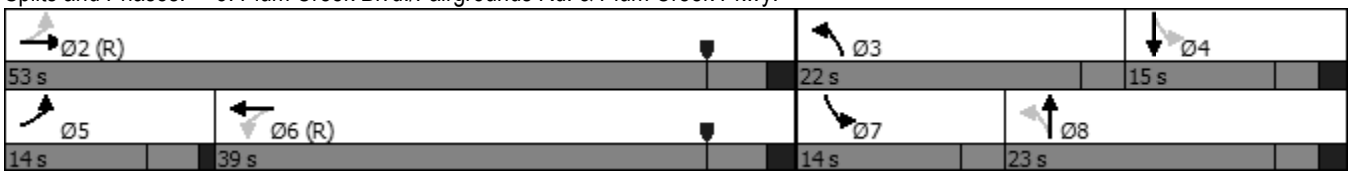
User approved pedestrian interval to be less than phase max green.

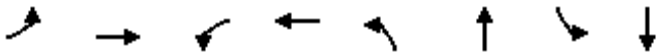
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	91	743	36	756	258	0	3	3
Future Volume (vph)	91	743	36	756	258	0	3	3
Turn Type	pm+pt	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases	5	2		6	3	8	7	4
Permitted Phases	2		6		8		4	
Detector Phase	5	2	6	6	3	8	7	4
Switch Phase								
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0	3.0	2.0
Minimum Split (s)	9.5	33.0	28.0	28.0	14.5	10.0	9.5	7.0
Total Split (s)	14.0	53.0	39.0	39.0	22.0	23.0	14.0	15.0
Total Split (%)	15.6%	58.9%	43.3%	43.3%	24.4%	25.6%	15.6%	16.7%
Yellow Time (s)	3.5	4.0	4.0	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	6.0	6.0	3.0	5.0	3.0	5.0
Lead/Lag	Lead		Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	C-Max	None	Max	None	Max
Act Effct Green (s)	48.5	47.0	36.7	36.7	34.0	30.4	20.7	14.0
Actuated g/C Ratio	0.54	0.52	0.41	0.41	0.38	0.34	0.23	0.16
v/c Ratio	0.34	0.59	0.23	0.61	0.54	0.06	0.01	0.18

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 44 (49%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 16.5
Intersection Capacity Utilization 71.8%
Analysis Period (min) 15

Splits and Phases: 3: Plum Creek Blvd./Fairgrounds Rd. & Plum Creek Pkwy.





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	100	1081	42	887	293	45	4	52
v/c Ratio	0.34	0.59	0.23	0.61	0.54	0.06	0.01	0.18
Control Delay	13.5	8.6	24.0	24.1	25.2	0.1	19.0	14.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.5	8.6	24.0	24.1	25.2	0.1	19.0	14.1
Queue Length 50th (ft)	15	77	16	212	122	0	1	2
Queue Length 95th (ft)	m51	197	42	269	187	0	7	31
Internal Link Dist (ft)		1330		637		613		434
Turn Bay Length (ft)	70		55				110	
Base Capacity (vph)	323	1821	179	1457	568	749	465	294
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.59	0.23	0.61	0.52	0.06	0.01	0.18

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	91	743	241	36	756	7	258	0	40	3	3	40
Future Volume (veh/h)	91	743	241	36	756	7	258	0	40	3	3	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	100	816	265	42	879	8	293	0	45	4	4	48
Peak Hour Factor	0.91	0.91	0.91	0.86	0.86	0.86	0.88	0.88	0.88	0.84	0.84	0.84
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	0	0	0
Cap, veh/h	362	1518	492	327	1711	16	482	0	431	239	14	167
Arrive On Green	0.10	1.00	1.00	0.47	0.47	0.47	0.16	0.00	0.27	0.00	0.11	0.11
Sat Flow, veh/h	1795	2656	862	525	3637	33	1795	0	1596	1810	125	1500
Grp Volume(v), veh/h	100	550	531	42	433	454	293	0	45	4	0	52
Grp Sat Flow(s),veh/h/ln	1795	1791	1726	525	1791	1879	1795	0	1596	1810	0	1625
Q Serve(g_s), s	2.4	0.0	0.0	4.1	15.2	15.2	12.4	0.0	1.9	0.2	0.0	2.6
Cycle Q Clear(g_c), s	2.4	0.0	0.0	4.1	15.2	15.2	12.4	0.0	1.9	0.2	0.0	2.6
Prop In Lane	1.00		0.50	1.00		0.02	1.00		1.00	1.00		0.92
Lane Grp Cap(c), veh/h	362	1023	987	327	843	884	482	0	431	239	0	181
V/C Ratio(X)	0.28	0.54	0.54	0.13	0.51	0.51	0.61	0.00	0.10	0.02	0.00	0.29
Avail Cap(c_a), veh/h	460	1023	987	327	843	884	570	0	431	454	0	181
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.88	0.88	0.88	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.2	0.0	0.0	13.7	16.6	16.6	26.9	0.0	24.7	35.4	0.0	36.7
Incr Delay (d2), s/veh	0.4	1.8	1.9	0.8	2.2	2.1	0.6	0.0	0.5	0.0	0.0	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.5	0.5	0.5	6.3	6.6	5.2	0.0	0.8	0.1	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.6	1.8	1.9	14.5	18.9	18.8	27.5	0.0	25.2	35.4	0.0	40.7
LnGrp LOS	B	A	A	B	B	B	C	A	C	D	A	D
Approach Vol, veh/h		1181			929			338			56	
Approach Delay, s/veh		2.6			18.6			27.2			40.3	
Approach LOS		A			B			C			D	

Timer - Assigned Phs		2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s		57.4	17.6	15.0	9.1	48.3	3.3	29.3				
Change Period (Y+Rc), s		6.0	3.0	5.0	4.5	6.0	3.0	5.0				
Max Green Setting (Gmax), s		47.0	19.0	10.0	9.5	33.0	11.0	18.0				
Max Q Clear Time (g_c+I1), s		2.0	14.4	4.6	4.4	17.2	2.2	3.9				
Green Ext Time (p_c), s		9.0	0.2	0.0	0.1	5.4	0.0	0.1				

Intersection Summary	
HCM 6th Ctrl Delay	12.7
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	205	3	129	656
Future Volume (Veh/h)	0	0	205	3	129	656
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.87	0.87	0.82	0.82
Hourly flow rate (vph)	0	0	236	3	157	800
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1350	236			239	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1350	236			239	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			88	
cM capacity (veh/h)	146	803			1334	

Direction, Lane #	NB 1	NB 2	SB 1	SB 2
Volume Total	236	3	157	800
Volume Left	0	0	157	0
Volume Right	0	3	0	0
cSH	1700	1700	1334	1700
Volume to Capacity	0.14	0.00	0.12	0.47
Queue Length 95th (ft)	0	0	10	0
Control Delay (s)	0.0	0.0	8.1	0.0
Lane LOS			A	
Approach Delay (s)	0.0		1.3	
Approach LOS				

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	37.9%	ICU Level of Service	A
Analysis Period (min)	15		

Twin Mesa Metropolitan District New Service Plan
SV2023-003
Planning Commission Supplemental Memo Page 352 of 1222

DELAY (CONTROL)

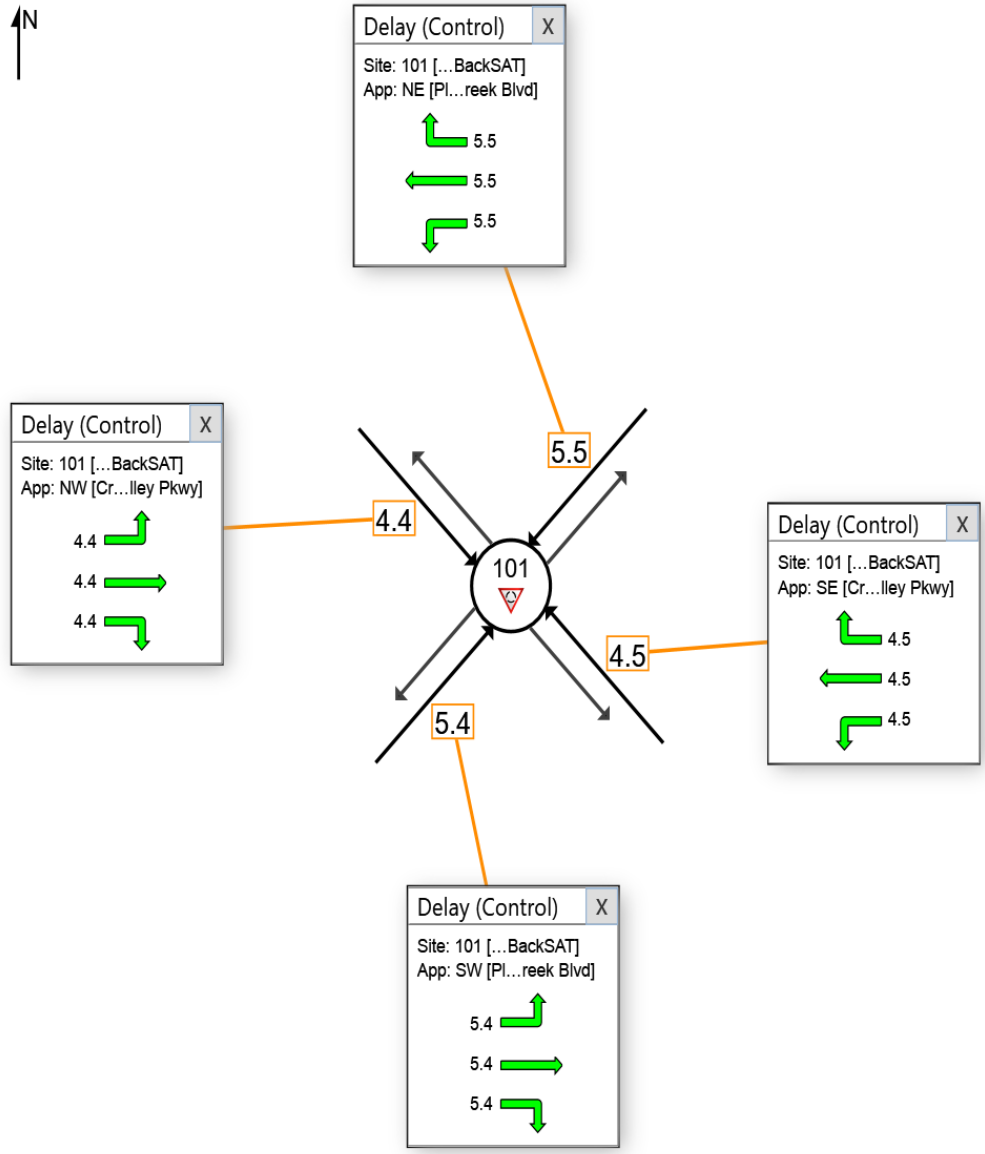
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 101 [Int #5_2025 Back_SAT (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

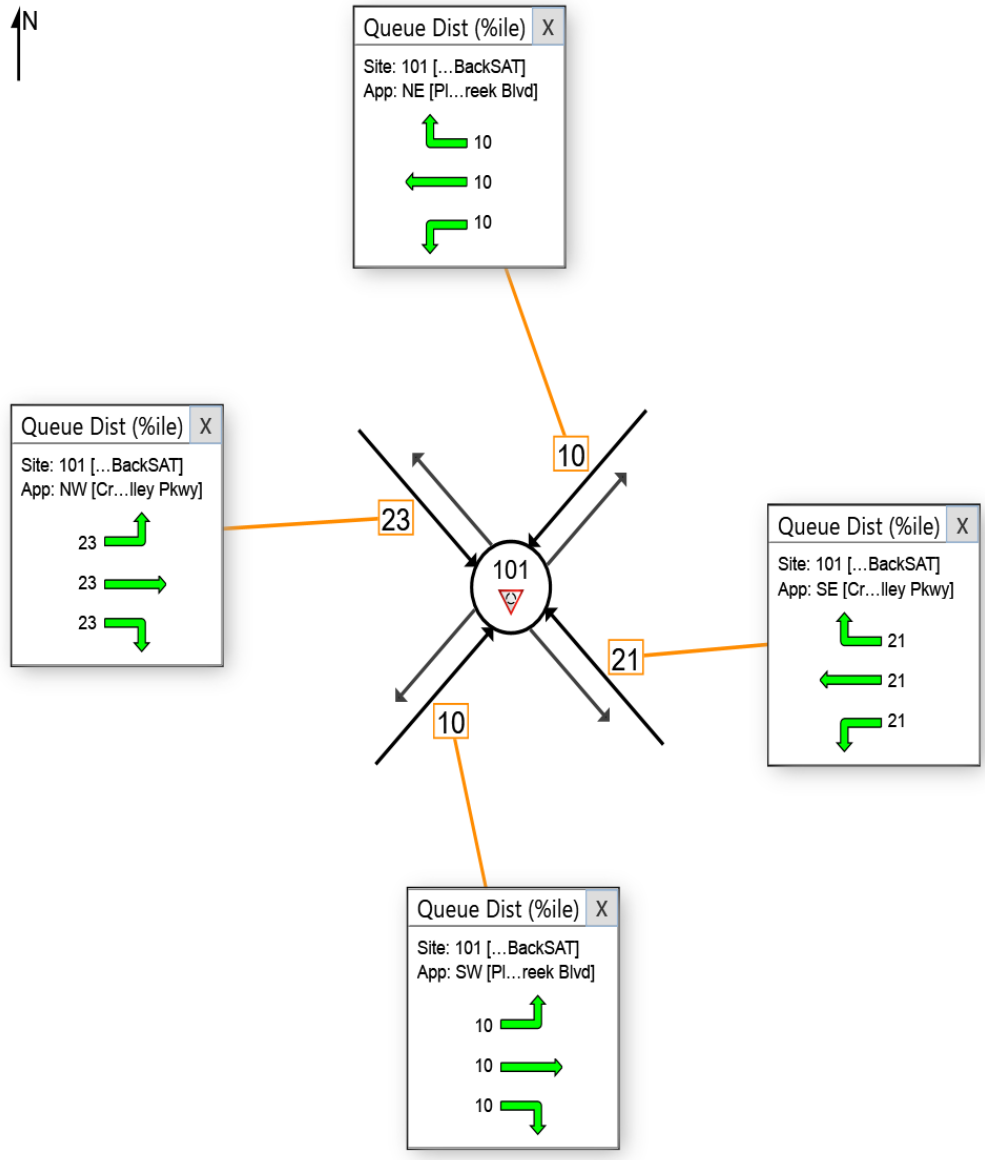
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 101 [Int #5_2025 Back_SAT (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

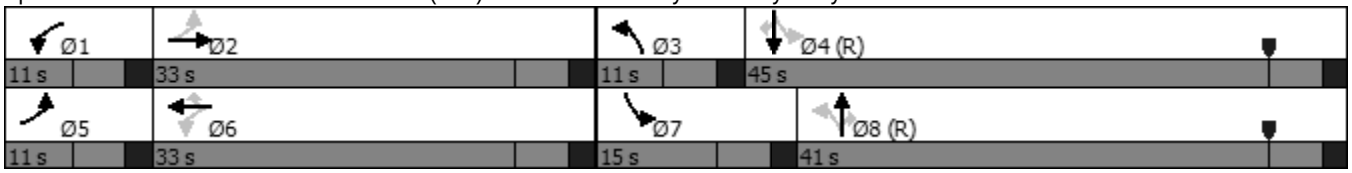
Close All Popups



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	5	6	10	15	60	1	127	50	200	453	8
Future Volume (vph)	5	6	10	15	60	1	127	50	200	453	8
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2	1	6		3	8		7	4	
Permitted Phases	2		6		6	8		8	4		4
Detector Phase	5	2	1	6	6	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.0	33.0	11.0	33.0	33.0	11.0	33.0	33.0	11.0	33.0	33.0
Total Split (s)	11.0	33.0	11.0	33.0	33.0	11.0	41.0	41.0	15.0	45.0	45.0
Total Split (%)	11.0%	33.0%	11.0%	33.0%	33.0%	11.0%	41.0%	41.0%	15.0%	45.0%	45.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	36.8	35.8	36.8	35.8	35.8	40.0	35.0	35.0	49.6	47.8	47.8
Actuated g/C Ratio	0.37	0.36	0.37	0.36	0.36	0.40	0.35	0.35	0.50	0.48	0.48
v/c Ratio	0.01	0.02	0.02	0.03	0.10	0.00	0.22	0.09	0.40	0.61	0.01

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 56 (56%), Referenced to phase 4:SBTL and 8:NBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 19.5
Intersection Capacity Utilization 51.3%
Analysis Period (min) 15

Splits and Phases: 7: Dawson Trail Blvd. (new) & Territorial Rd./Crystal Valley Pkwy.





Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	7	11	11	17	67	1	144	57	233	527	9
v/c Ratio	0.01	0.02	0.02	0.03	0.10	0.00	0.22	0.09	0.40	0.61	0.01
Control Delay	19.6	20.4	19.7	23.4	0.3	13.0	24.1	0.3	17.0	24.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.6	20.4	19.7	23.4	0.3	13.0	24.1	0.3	17.0	24.0	0.0
Queue Length 50th (ft)	3	3	4	7	0	0	64	0	82	227	0
Queue Length 95th (ft)	10	14	16	25	0	3	108	0	124	386	0
Internal Link Dist (ft)		1067		1733			1614			1008	
Turn Bay Length (ft)	200		500			500		1000	500		500
Base Capacity (vph)	540	645	532	666	672	276	652	660	578	865	821
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.02	0.02	0.03	0.10	0.00	0.22	0.09	0.40	0.61	0.01

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	6	2	10	15	60	1	127	50	200	453	8
Future Volume (veh/h)	5	6	2	10	15	60	1	127	50	200	453	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900	1870	1870	1870	1870	1870	1870	1870	1826	1826
Adj Flow Rate, veh/h	7	8	3	11	17	67	1	144	57	233	527	9
Peak Hour Factor	0.75	0.75	0.75	0.90	0.90	0.90	0.88	0.88	0.88	0.86	0.86	0.86
Percent Heavy Veh, %	0	2	0	2	2	2	2	2	2	2	5	5
Cap, veh/h	445	350	131	468	513	435	303	724	613	629	868	736
Arrive On Green	0.01	0.27	0.27	0.01	0.27	0.27	0.00	0.39	0.39	0.09	0.48	0.48
Sat Flow, veh/h	1810	1297	486	1781	1870	1585	1781	1870	1585	1781	1826	1547
Grp Volume(v), veh/h	7	0	11	11	17	67	1	144	57	233	527	9
Grp Sat Flow(s),veh/h/ln	1810	0	1783	1781	1870	1585	1781	1870	1585	1781	1826	1547
Q Serve(g_s), s	0.3	0.0	0.5	0.4	0.7	3.2	0.0	5.1	2.3	7.6	21.3	0.3
Cycle Q Clear(g_c), s	0.3	0.0	0.5	0.4	0.7	3.2	0.0	5.1	2.3	7.6	21.3	0.3
Prop In Lane	1.00		0.27	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	445	0	481	468	513	435	303	724	613	629	868	736
V/C Ratio(X)	0.02	0.00	0.02	0.02	0.03	0.15	0.00	0.20	0.09	0.37	0.61	0.01
Avail Cap(c_a), veh/h	520	0	481	534	513	435	389	724	613	629	868	736
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.92	0.92	0.92	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.1	0.0	26.8	25.9	26.6	27.5	19.5	20.4	19.5	14.9	19.3	13.8
Incr Delay (d2), s/veh	0.0	0.0	0.1	0.0	0.1	0.7	0.0	0.6	0.3	0.4	3.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.2	0.2	0.3	1.3	0.0	2.3	0.9	3.0	9.4	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.1	0.0	26.9	25.9	26.7	28.2	19.5	21.0	19.8	15.2	22.5	13.9
LnGrp LOS	C	A	C	C	C	C	B	C	B	B	C	B
Approach Vol, veh/h		18			95			202			769	
Approach Delay, s/veh		26.6			27.6			20.6			20.2	
Approach LOS		C			C			C			C	

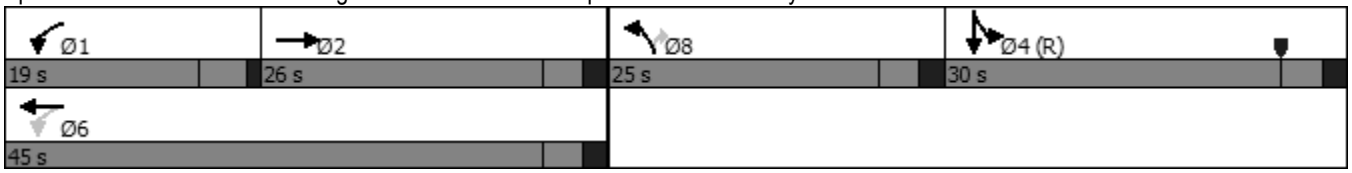
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.3	33.0	6.1	53.5	6.9	33.4	15.0	44.7
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	5.0	27.0	5.0	39.0	5.0	27.0	9.0	35.0
Max Q Clear Time (g_c+I1), s	2.4	2.5	2.0	23.3	2.3	5.2	9.6	7.1
Green Ext Time (p_c), s	0.0	0.0	0.0	3.1	0.0	0.2	0.0	1.0

Intersection Summary	
HCM 6th Ctrl Delay	21.0
HCM 6th LOS	C

Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	365	180	285	25	150	580	95	105
Future Volume (vph)	365	180	285	25	150	580	95	105
Turn Type	NA	pm+pt	NA	Prot	Perm	Split	NA	Free
Protected Phases	2	1	6	8		4	4	
Permitted Phases		6			8			Free
Detector Phase	2	1	6	8	8	4	4	
Switch Phase								
Minimum Initial (s)	10.0	5.0	10.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	30.0	9.5	30.0	10.0	10.0	10.0	10.0	
Total Split (s)	26.0	19.0	45.0	25.0	25.0	30.0	30.0	
Total Split (%)	26.0%	19.0%	45.0%	25.0%	25.0%	30.0%	30.0%	
Yellow Time (s)	3.0	3.5	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	1.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	4.5	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lag	Lead		Lead	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	
Recall Mode	Max	None	Max	None	None	C-Max	C-Max	
Act Effct Green (s)	23.4	40.5	40.0	7.7	7.7	37.3	37.3	100.0
Actuated g/C Ratio	0.23	0.40	0.40	0.08	0.08	0.37	0.37	1.00
v/c Ratio	0.38	0.47	0.21	0.19	0.59	0.39	0.39	0.07

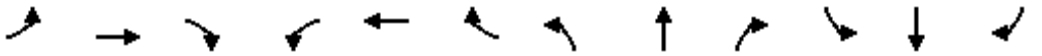
Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 4:SBTL, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.59
Intersection Signal Delay: 25.0
Intersection Capacity Utilization 49.6%
Analysis Period (min) 15

Splits and Phases: 8: W. Frontage Road/I-25 SB Off-Ramp & Plum Creek Pkwy



Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	448	188	297	26	156	465	238	109
v/c Ratio	0.38	0.47	0.21	0.19	0.59	0.39	0.39	0.07
Control Delay	31.4	27.6	23.9	45.2	16.5	24.7	26.0	0.1
Queue Delay	0.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.4	29.5	23.9	45.2	16.5	24.7	26.0	0.1
Queue Length 50th (ft)	82	86	72	16	0	115	118	0
Queue Length 95th (ft)	117	155	115	40	58	175	207	0
Internal Link Dist (ft)	437		181				388	
Turn Bay Length (ft)				350				160
Base Capacity (vph)	1186	430	1415	354	441	1201	614	1583
Starvation Cap Reductn	0	126	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.62	0.21	0.07	0.35	0.39	0.39	0.07

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	365	65	180	285	0	25	0	150	580	95	105
Future Volume (vph)	0	365	65	180	285	0	25	0	150	580	95	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		4.5	5.0		5.0		5.0	5.0	5.0	4.0
Lane Util. Factor		0.91		1.00	0.95		1.00		1.00	0.91	0.91	1.00
Frt		0.98		1.00	1.00		1.00		0.85	1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95	0.97	1.00
Satd. Flow (prot)		4970		1770	3539		1770		1583	3221	1647	1583
Flt Permitted		1.00		0.36	1.00		0.95		1.00	0.95	0.97	1.00
Satd. Flow (perm)		4970		669	3539		1770		1583	3221	1647	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	380	68	188	297	0	26	0	156	604	99	109
RTOR Reduction (vph)	0	25	0	0	0	0	0	0	144	0	0	0
Lane Group Flow (vph)	0	423	0	188	297	0	26	0	12	465	238	109
Turn Type		NA		pm+pt	NA		Prot		Perm	Split	NA	Free
Protected Phases		2		1	6		8			4	4	
Permitted Phases				6					8			Free
Actuated Green, G (s)		23.4		40.0	40.0		7.7		7.7	37.3	37.3	100.0
Effective Green, g (s)		23.4		40.0	40.0		7.7		7.7	37.3	37.3	100.0
Actuated g/C Ratio		0.23		0.40	0.40		0.08		0.08	0.37	0.37	1.00
Clearance Time (s)		5.0		4.5	5.0		5.0		5.0	5.0	5.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		1162		400	1415		136		121	1201	614	1583
v/s Ratio Prot		0.09		c0.06	0.08		c0.01			0.14	c0.14	
v/s Ratio Perm				c0.13					0.01			0.07
v/c Ratio		0.36		0.47	0.21		0.19		0.10	0.39	0.39	0.07
Uniform Delay, d1		32.1		20.5	19.6		43.2		42.9	23.0	23.0	0.0
Progression Factor		1.00		1.19	1.19		1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		0.9		0.8	0.3		0.7		0.4	0.9	1.8	0.1
Delay (s)		33.0		25.2	23.7		43.9		43.3	23.9	24.8	0.1
Level of Service		C		C	C		D		D	C	C	A
Approach Delay (s)		33.0			24.3			43.4			21.0	
Approach LOS		C			C			D			C	

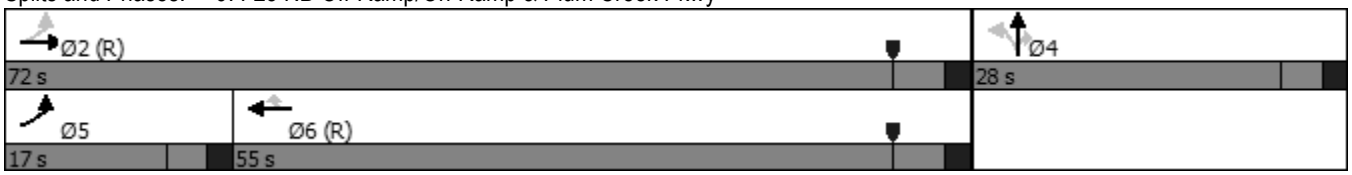
Intersection Summary			
HCM 2000 Control Delay	26.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	49.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	280	815	380	850	85	5	105
Future Volume (vph)	280	815	380	850	85	5	105
Turn Type	pm+pt	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6			4	
Permitted Phases	2			6	4		4
Detector Phase	5	2	6	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0	5.0
Minimum Split (s)	10.0	31.0	24.0	24.0	40.0	40.0	40.0
Total Split (s)	17.0	72.0	55.0	55.0	28.0	28.0	28.0
Total Split (%)	17.0%	72.0%	55.0%	55.0%	28.0%	28.0%	28.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max
Act Effct Green (s)	67.0	66.0	50.0	50.0	23.0	23.0	23.0
Actuated g/C Ratio	0.67	0.66	0.50	0.50	0.23	0.23	0.23
v/c Ratio	0.65	0.25	0.47	0.46	0.18	0.18	0.15

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 83 (83%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.65
Intersection Signal Delay: 9.0
Intersection Capacity Utilization 68.1%
Analysis Period (min) 15

Splits and Phases: 9: I-25 NB Off-Ramp/On-Ramp & Plum Creek Pkwy





Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	286	832	822	433	69	67	63
v/c Ratio	0.65	0.25	0.47	0.46	0.18	0.18	0.15
Control Delay	21.9	5.1	8.9	3.2	32.5	15.7	4.5
Queue Delay	1.1	0.3	0.0	0.0	0.0	0.0	0.0
Total Delay	23.0	5.3	8.9	3.2	32.5	15.7	4.5
Queue Length 50th (ft)	69	34	86	0	37	13	0
Queue Length 95th (ft)	128	74	137	53	76	51	21
Internal Link Dist (ft)		181	431			480	
Turn Bay Length (ft)					350		150
Base Capacity (vph)	453	3356	1760	937	386	380	412
Starvation Cap Reductn	46	1695	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.50	0.47	0.46	0.18	0.18	0.15

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	280	815	0	0	380	850	85	5	105	0	0	0
Future Volume (veh/h)	280	815	0	0	380	850	85	5	105	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	286	832	0	0	388	867	125	0	70			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	419	3370	0	0	954	1617	819	0	365			
Arrive On Green	0.20	1.00	0.00	0.00	0.51	0.51	0.23	0.00	0.23			
Sat Flow, veh/h	1781	5274	0	0	1870	3170	3563	0	1585			
Grp Volume(v), veh/h	286	832	0	0	388	867	125	0	70			
Grp Sat Flow(s),veh/h/ln	1781	1702	0	0	1870	1585	1781	0	1585			
Q Serve(g_s), s	7.8	0.0	0.0	0.0	12.8	18.4	2.8	0.0	3.6			
Cycle Q Clear(g_c), s	7.8	0.0	0.0	0.0	12.8	18.4	2.8	0.0	3.6			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	419	3370	0	0	954	1617	819	0	365			
V/C Ratio(X)	0.68	0.25	0.00	0.00	0.41	0.54	0.15	0.00	0.19			
Avail Cap(c_a), veh/h	455	3370	0	0	954	1617	819	0	365			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.90	0.90	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	9.7	0.0	0.0	0.0	15.1	16.5	30.7	0.0	31.0			
Incr Delay (d2), s/veh	3.4	0.2	0.0	0.0	1.3	1.3	0.4	0.0	1.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.6	0.0	0.0	0.0	5.6	6.7	1.2	0.0	3.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.1	0.2	0.0	0.0	16.4	17.8	31.1	0.0	32.2			
LnGrp LOS	B	A	A	A	B	B	C	A	C			
Approach Vol, veh/h		1118			1255			195				
Approach Delay, s/veh		3.5			17.4			31.5				
Approach LOS		A			B			C				

Timer - Assigned Phs		2		4	5	6			
Phs Duration (G+Y+Rc), s		72.0		28.0	15.0	57.0			
Change Period (Y+Rc), s		6.0		5.0	5.0	6.0			
Max Green Setting (Gmax), s		66.0		23.0	12.0	49.0			
Max Q Clear Time (g_c+I1), s		2.0		5.6	9.8	20.4			
Green Ext Time (p_c), s		7.3		0.6	0.2	7.2			

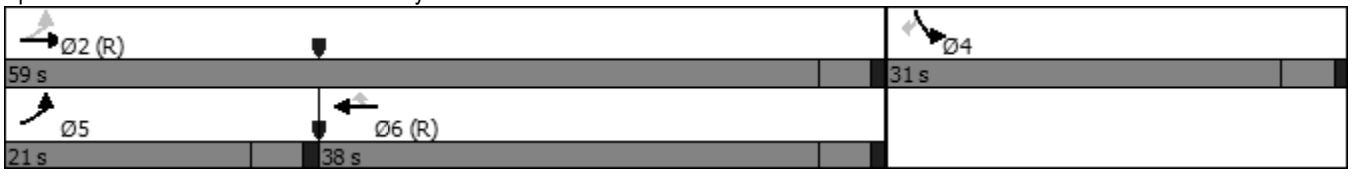
Intersection Summary		
HCM 6th Ctrl Delay	12.4	
HCM 6th LOS	B	

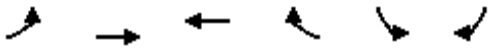
Notes
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	25	390	360	55	40	30
Future Volume (vph)	25	390	360	55	40	30
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	21.0	59.0	38.0	38.0	31.0	31.0
Total Split (%)	23.3%	65.6%	42.2%	42.2%	34.4%	34.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max
Act Effct Green (s)	54.5	54.5	50.0	50.0	26.5	26.5
Actuated g/C Ratio	0.61	0.61	0.56	0.56	0.29	0.29
v/c Ratio	0.05	0.20	0.20	0.07	0.04	0.07

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 3 (3%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.20
Intersection Signal Delay: 9.8
Intersection Capacity Utilization 29.5%
Analysis Period (min) 15

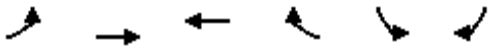
Splits and Phases: 10: Plum Creek Pkwy & Prairie Hawk Dr





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	27	424	391	60	43	33
v/c Ratio	0.05	0.20	0.20	0.07	0.04	0.07
Control Delay	7.4	8.2	11.2	3.8	22.9	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.4	8.2	11.2	3.8	22.9	8.7
Queue Length 50th (ft)	6	52	47	0	8	0
Queue Length 95th (ft)	16	74	94	20	21	21
Internal Link Dist (ft)		246	922		698	
Turn Bay Length (ft)	230			230		250
Base Capacity (vph)	690	2143	1967	906	1010	489
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.20	0.20	0.07	0.04	0.07

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	25	390	360	55	40	30
Future Volume (veh/h)	25	390	360	55	40	30
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	27	424	391	0	43	33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	595	2152	1877		1018	467
Arrive On Green	0.03	0.61	0.53	0.00	0.29	0.29
Sat Flow, veh/h	1781	3647	3647	1585	3456	1585
Grp Volume(v), veh/h	27	424	391	0	43	33
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1728	1585
Q Serve(g_s), s	0.6	4.8	5.2	0.0	0.8	1.4
Cycle Q Clear(g_c), s	0.6	4.8	5.2	0.0	0.8	1.4
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	595	2152	1877		1018	467
V/C Ratio(X)	0.05	0.20	0.21		0.04	0.07
Avail Cap(c_a), veh/h	873	2152	1877		1018	467
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	8.4	7.9	11.3	0.0	22.7	22.9
Incr Delay (d2), s/veh	0.0	0.2	0.3	0.0	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	1.6	1.9	0.0	0.3	1.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	8.5	8.2	11.5	0.0	22.8	23.2
LnGrp LOS	A	A	B		C	C
Approach Vol, veh/h		451	391	A	76	
Approach Delay, s/veh		8.2	11.5		22.9	
Approach LOS		A	B		C	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		59.0		31.0	7.0	52.0
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		54.5		26.5	16.5	33.5
Max Q Clear Time (g_c+I1), s		6.8		3.4	2.6	7.2
Green Ext Time (p_c), s		2.8		0.2	0.0	2.3

Intersection Summary		
HCM 6th Ctrl Delay	10.8	
HCM 6th LOS	B	

Notes

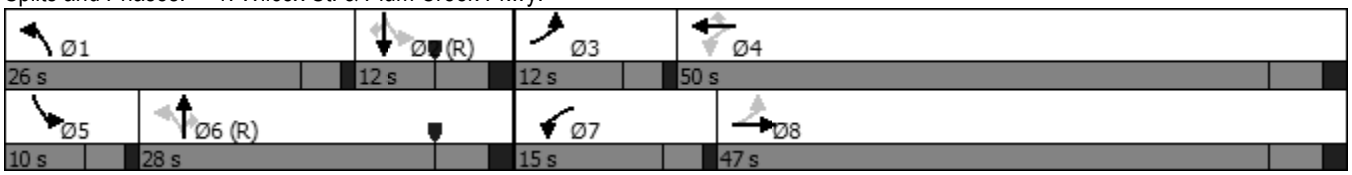
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

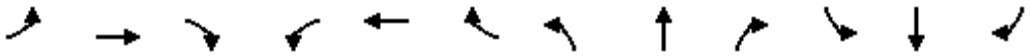
Intersection Capacity Worksheets: 2030 Background

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	160	620	255	105	960	110	330	200	115	60	150	85
Future Volume (vph)	160	620	255	105	960	110	330	200	115	60	150	85
Turn Type	pm+pt	NA	Free	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		Free	4		4	6		6	2		2
Detector Phase	3	8		7	4	4	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	5.0	10.0	10.0	5.0	4.0	4.0
Minimum Split (s)	9.5	31.0		14.5	31.0	31.0	9.5	16.0	16.0	9.5	10.0	10.0
Total Split (s)	12.0	47.0		15.0	50.0	50.0	26.0	28.0	28.0	10.0	12.0	12.0
Total Split (%)	12.0%	47.0%		15.0%	50.0%	50.0%	26.0%	28.0%	28.0%	10.0%	12.0%	12.0%
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	2.0		1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	45.7	35.9	100.0	50.1	38.1	38.1	40.1	29.9	29.9	30.8	22.8	22.8
Actuated g/C Ratio	0.46	0.36	1.00	0.50	0.38	0.38	0.40	0.30	0.30	0.31	0.23	0.23
v/c Ratio	0.78	0.55	0.18	0.30	0.77	0.17	0.39	0.39	0.22	0.17	0.39	0.19

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 32 (32%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 28.4
Intersection Capacity Utilization 69.4%
Analysis Period (min) 15

Splits and Phases: 1: Wilcox St. & Plum Creek Pkwy.





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	174	674	277	114	1043	120	359	217	125	65	163	92
v/c Ratio	0.78	0.55	0.18	0.30	0.77	0.17	0.39	0.39	0.22	0.17	0.39	0.19
Control Delay	40.4	26.7	0.3	19.6	42.3	9.2	22.7	33.5	7.1	22.9	39.9	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.4	26.7	0.3	19.6	42.6	9.2	22.7	33.5	7.1	22.9	39.9	1.1
Queue Length 50th (ft)	56	175	0	54	375	10	78	114	0	26	89	0
Queue Length 95th (ft)	#134	210	0	m94	442	m69	123	198	46	59	#196	2
Internal Link Dist (ft)		553			473			812			658	
Turn Bay Length (ft)	280		250	185			190		195	130		130
Base Capacity (vph)	226	1416	1538	397	1557	788	1081	551	556	388	413	477
Starvation Cap Reductn	0	0	0	0	133	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.48	0.18	0.29	0.73	0.15	0.33	0.39	0.22	0.17	0.39	0.19

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Twin Mesa Metropolitan District New Service Plan
SV2023-003
Planning Commission Supplemental Memo Page 369 of 1222

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	620	255	105	960	110	330	200	115	60	150	85
Future Volume (veh/h)	160	620	255	105	960	110	330	200	115	60	150	85
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1870	1870	1870	1856	1856	1856	1826	1826	1826
Adj Flow Rate, veh/h	174	674	0	114	1043	120	359	217	125	65	163	92
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	2	2	2	3	3	3	5	5	5
Cap, veh/h	250	1224		393	1310	584	870	574	487	366	463	393
Arrive On Green	0.08	0.35	0.00	0.03	0.12	0.12	0.10	0.31	0.31	0.04	0.25	0.25
Sat Flow, veh/h	1739	3469	1547	1781	3554	1585	3428	1856	1572	1739	1826	1547
Grp Volume(v), veh/h	174	674	0	114	1043	120	359	217	125	65	163	92
Grp Sat Flow(s),veh/h/ln	1739	1735	1547	1781	1777	1585	1714	1856	1572	1739	1826	1547
Q Serve(g_s), s	6.3	15.6	0.0	3.9	28.5	6.8	7.4	9.1	6.0	2.7	7.3	4.7
Cycle Q Clear(g_c), s	6.3	15.6	0.0	3.9	28.5	6.8	7.4	9.1	6.0	2.7	7.3	4.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	250	1224		393	1310	584	870	574	487	366	463	393
V/C Ratio(X)	0.70	0.55		0.29	0.80	0.21	0.41	0.38	0.26	0.18	0.35	0.23
Avail Cap(c_a), veh/h	250	1422		418	1564	697	1289	574	487	398	463	393
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.82	0.82	0.82	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.2	26.0	0.0	19.0	40.3	30.7	22.6	27.0	25.9	25.8	30.6	29.6
Incr Delay (d2), s/veh	6.9	0.4	0.0	0.1	2.1	0.1	0.1	1.9	1.3	0.1	2.1	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	6.3	0.0	1.6	13.9	2.7	3.0	4.4	2.3	1.1	3.5	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.0	26.4	0.0	19.1	42.3	30.9	22.7	28.9	27.2	25.9	32.7	31.0
LnGrp LOS	C	C		B	D	C	C	C	C	C	C	C
Approach Vol, veh/h		848	A		1277			701			320	
Approach Delay, s/veh		27.1			39.2			25.4			30.8	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.8	31.4	12.0	42.9	8.2	37.0	13.6	41.3
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	22.0	6.0	8.0	44.0	6.0	22.0	11.0	41.0
Max Q Clear Time (g_c+I1), s	9.4	9.3	8.3	30.5	4.7	11.1	5.9	17.6
Green Ext Time (p_c), s	0.4	0.0	0.0	6.3	0.0	1.8	0.0	4.7

Intersection Summary	
HCM 6th Ctrl Delay	32.0
HCM 6th LOS	C

Notes

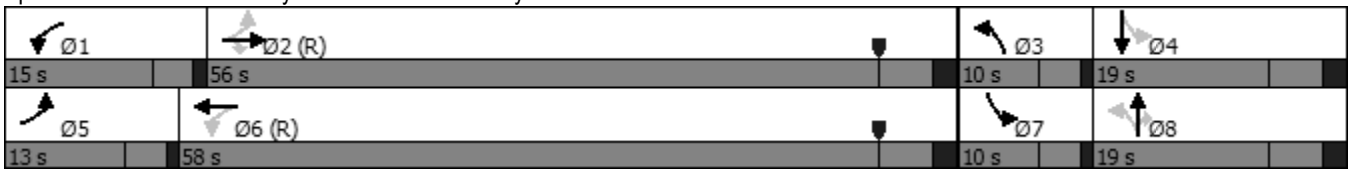
User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	145	535	125	125	1050	75	40	60	80	60	65
Future Volume (vph)	145	535	125	125	1050	75	40	60	80	60	65
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Free
Protected Phases	5	2		1	6	3	8		7	4	
Permitted Phases	2		2	6		8		8	4		Free
Detector Phase	5	2	2	1	6	3	8	8	7	4	
Switch Phase											
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0	3.0	5.0	5.0	3.0	5.0	
Minimum Split (s)	9.5	32.0	32.0	9.5	32.0	9.5	11.0	11.0	9.5	11.0	
Total Split (s)	13.0	56.0	56.0	15.0	58.0	10.0	19.0	19.0	10.0	19.0	
Total Split (%)	13.0%	56.0%	56.0%	15.0%	58.0%	10.0%	19.0%	19.0%	10.0%	19.0%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	6.0	4.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None	None	
Act Effct Green (s)	72.6	63.6	63.6	71.2	62.9	14.6	8.3	8.3	14.6	8.3	100.0
Actuated g/C Ratio	0.73	0.64	0.64	0.71	0.63	0.15	0.08	0.08	0.15	0.08	1.00
v/c Ratio	0.53	0.26	0.13	0.22	0.59	0.37	0.28	0.27	0.38	0.41	0.04

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 41 (41%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.59
Intersection Signal Delay: 12.5
Intersection Capacity Utilization 66.7%
Analysis Period (min) 15

Splits and Phases: 2: Perry St. & Plum Creek Pkwy.





Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	158	582	136	136	1299	82	43	65	87	65	71
v/c Ratio	0.53	0.26	0.13	0.22	0.59	0.37	0.28	0.27	0.38	0.41	0.04
Control Delay	9.8	12.3	7.5	4.1	9.1	38.1	46.5	3.6	38.5	50.6	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.8	12.3	7.5	4.1	9.1	38.1	46.5	3.6	38.5	50.6	0.0
Queue Length 50th (ft)	24	161	46	17	182	44	26	0	47	40	0
Queue Length 95th (ft)	64	208	85	m33	238	83	59	6	87	81	0
Internal Link Dist (ft)		473			1330		455			497	
Turn Bay Length (ft)	170		70	100		185		65	120		120
Base Capacity (vph)	338	2208	1032	707	2216	226	244	309	230	247	1615
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.26	0.13	0.19	0.59	0.36	0.18	0.21	0.38	0.26	0.04

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	535	125	125	1050	145	75	40	60	80	60	65
Future Volume (veh/h)	145	535	125	125	1050	145	75	40	60	80	60	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1885	1885	1885	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	158	582	136	136	1141	158	82	43	65	87	65	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	4	4	1	1	1	1	1	1	0	0	0
Cap, veh/h	422	2200	981	519	1977	273	219	123	103	234	129	
Arrive On Green	0.02	0.21	0.21	0.09	1.00	1.00	0.06	0.07	0.07	0.06	0.07	0.00
Sat Flow, veh/h	1753	3497	1560	1795	3161	437	1795	1885	1583	1810	1900	1610
Grp Volume(v), veh/h	158	582	136	136	645	654	82	43	65	87	65	0
Grp Sat Flow(s),veh/h/ln	1753	1749	1560	1795	1791	1807	1795	1885	1583	1810	1900	1610
Q Serve(g_s), s	3.1	14.0	7.1	2.8	0.0	0.0	4.2	2.2	4.0	4.4	3.3	0.0
Cycle Q Clear(g_c), s	3.1	14.0	7.1	2.8	0.0	0.0	4.2	2.2	4.0	4.4	3.3	0.0
Prop In Lane	1.00		1.00	1.00		0.24	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	422	2200	981	519	1120	1130	219	123	103	234	129	
V/C Ratio(X)	0.37	0.26	0.14	0.26	0.58	0.58	0.37	0.35	0.63	0.37	0.50	
Avail Cap(c_a), veh/h	491	2200	981	632	1120	1130	226	245	206	237	247	
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.88	0.88	0.88	0.80	0.80	0.80	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	5.9	20.2	17.5	6.6	0.0	0.0	40.5	44.7	45.6	40.4	45.0	0.0
Incr Delay (d2), s/veh	0.2	0.3	0.3	0.1	1.7	1.7	0.4	1.3	4.7	0.4	2.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	6.5	2.6	0.8	0.5	0.5	1.9	1.0	1.7	2.0	1.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.1	20.5	17.8	6.7	1.7	1.7	40.9	46.0	50.2	40.7	47.2	0.0
LnGrp LOS	A	C	B	A	A	A	D	D	D	D	D	
Approach Vol, veh/h		876			1435			190			152	A
Approach Delay, s/veh		17.5			2.2			45.3			43.5	
Approach LOS		B			A			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.7	68.9	9.6	12.8	9.1	68.5	9.9	12.5
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	11.0	50.0	6.0	13.0	9.0	52.0	6.0	13.0
Max Q Clear Time (g_c+I1), s	4.8	16.0	6.2	5.3	5.1	2.0	6.4	6.0
Green Ext Time (p_c), s	0.1	4.7	0.0	0.1	0.0	12.1	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	12.7
HCM 6th LOS	B

Notes

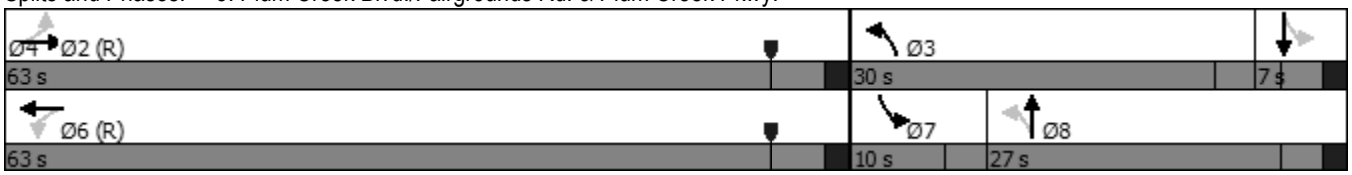
User approved pedestrian interval to be less than phase max green.

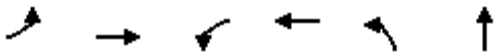
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	Ø4	Ø7
Lane Configurations								
Traffic Volume (vph)	15	455	50	990	325	0		
Future Volume (vph)	15	455	50	990	325	0		
Turn Type	Perm	NA	Perm	NA	pm+pt	NA		
Protected Phases		2		6	3	8	4	7
Permitted Phases	2		6		8			
Detector Phase	2	2	6	6	3	8		
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0	2.0	3.0
Minimum Split (s)	33.0	33.0	28.0	28.0	14.5	10.0	7.0	9.5
Total Split (s)	63.0	63.0	63.0	63.0	30.0	27.0	7.0	10.0
Total Split (%)	63.0%	63.0%	63.0%	63.0%	30.0%	27.0%	7%	10%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	6.0	6.0	6.0	6.0	3.0	5.0		
Lead/Lag					Lead	Lag	Lag	Lead
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	Max	Max	None
Act Effct Green (s)	57.0	57.0	57.0	57.0	34.0	32.0		
Actuated g/C Ratio	0.57	0.57	0.57	0.57	0.34	0.32		
v/c Ratio	0.08	0.37	0.15	0.53	0.69	0.05		

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 44 (44%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 13.8
Intersection Capacity Utilization 67.9%
Analysis Period (min) 15

Splits and Phases: 3: Plum Creek Blvd./Fairgrounds Rd. & Plum Creek Pkwy.





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT
Lane Group Flow (vph)	16	723	54	1077	353	38
v/c Ratio	0.08	0.37	0.15	0.53	0.69	0.05
Control Delay	5.0	3.3	11.5	14.4	35.4	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.0	3.3	11.5	14.4	35.4	0.1
Queue Length 50th (ft)	2	6	15	208	183	0
Queue Length 95th (ft)	m6	48	36	263	277	0
Internal Link Dist (ft)		1330		637		613
Turn Bay Length (ft)	70		55			
Base Capacity (vph)	209	1939	364	2037	556	807
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.37	0.15	0.53	0.63	0.05

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	455	210	50	990	1	325	0	35	0	0	0
Future Volume (veh/h)	15	455	210	50	990	1	325	0	35	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1885	1885	1885	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	16	495	228	54	1076	1	353	0	38	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	4	4	1	1	1	1	1	1	0	0	0
Cap, veh/h	320	1473	675	537	2323	2	473	0	411	102	38	0
Arrive On Green	1.00	1.00	1.00	0.63	0.63	0.63	0.21	0.00	0.26	0.00	0.00	0.00
Sat Flow, veh/h	516	2329	1067	736	3672	3	1795	0	1598	1810	1900	0
Grp Volume(v), veh/h	16	371	352	54	525	552	353	0	38	0	0	0
Grp Sat Flow(s),veh/h/ln	516	1749	1648	736	1791	1885	1795	0	1598	1810	1900	0
Q Serve(g_s), s	0.8	0.0	0.0	2.9	15.2	15.2	18.4	0.0	1.8	0.0	0.0	0.0
Cycle Q Clear(g_c), s	16.0	0.0	0.0	2.9	15.2	15.2	18.4	0.0	1.8	0.0	0.0	0.0
Prop In Lane	1.00		0.65	1.00		0.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	320	1106	1042	537	1133	1192	473	0	411	102	38	0
V/C Ratio(X)	0.05	0.34	0.34	0.10	0.46	0.46	0.75	0.00	0.09	0.00	0.00	0.00
Avail Cap(c_a), veh/h	320	1106	1042	537	1133	1192	585	0	411	226	38	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.97	0.97	0.97	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	1.9	0.0	0.0	7.3	9.6	9.6	35.3	0.0	28.2	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.8	0.9	0.4	1.4	1.3	2.9	0.0	0.4	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.2	0.2	0.5	5.7	6.0	8.3	0.0	0.7	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	2.2	0.8	0.9	7.7	10.9	10.8	38.2	0.0	28.7	0.0	0.0	0.0
LnGrp LOS	A	A	A	A	B	B	D	A	C	A	A	A
Approach Vol, veh/h		739			1131			391			0	
Approach Delay, s/veh		0.9			10.7			37.3			0.0	
Approach LOS		A			B			D				

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	69.2	23.8	7.0	69.2	0.0	30.8
Change Period (Y+Rc), s	6.0	3.0	5.0	6.0	3.0	5.0
Max Green Setting (Gmax), s	57.0	27.0	2.0	57.0	7.0	22.0
Max Q Clear Time (g_c+I1), s	18.0	20.4	0.0	17.2	0.0	3.8
Green Ext Time (p_c), s	5.4	0.3	0.0	9.1	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	12.1
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

DELAY (CONTROL)

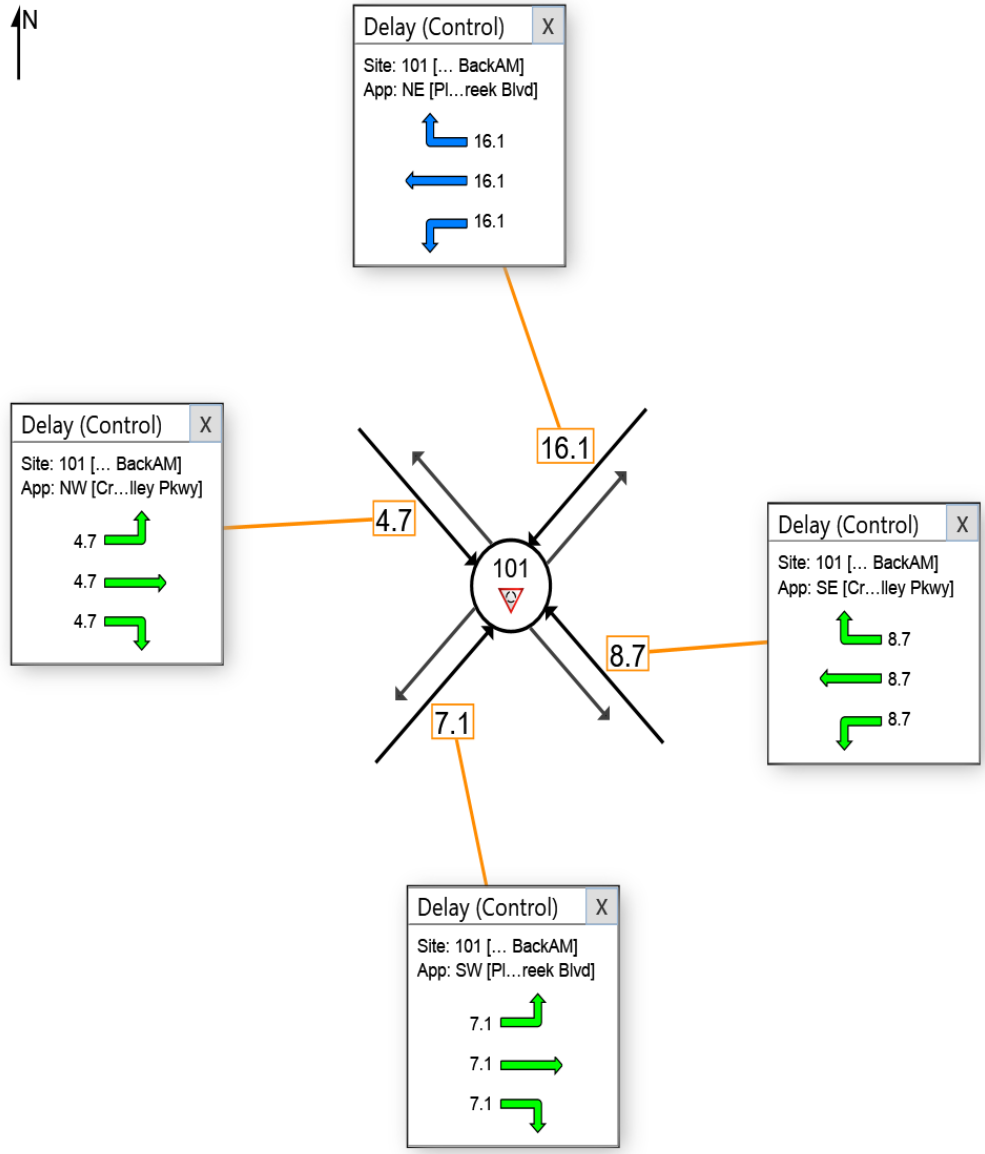
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 101 [Int #5_2030 Back_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popups boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

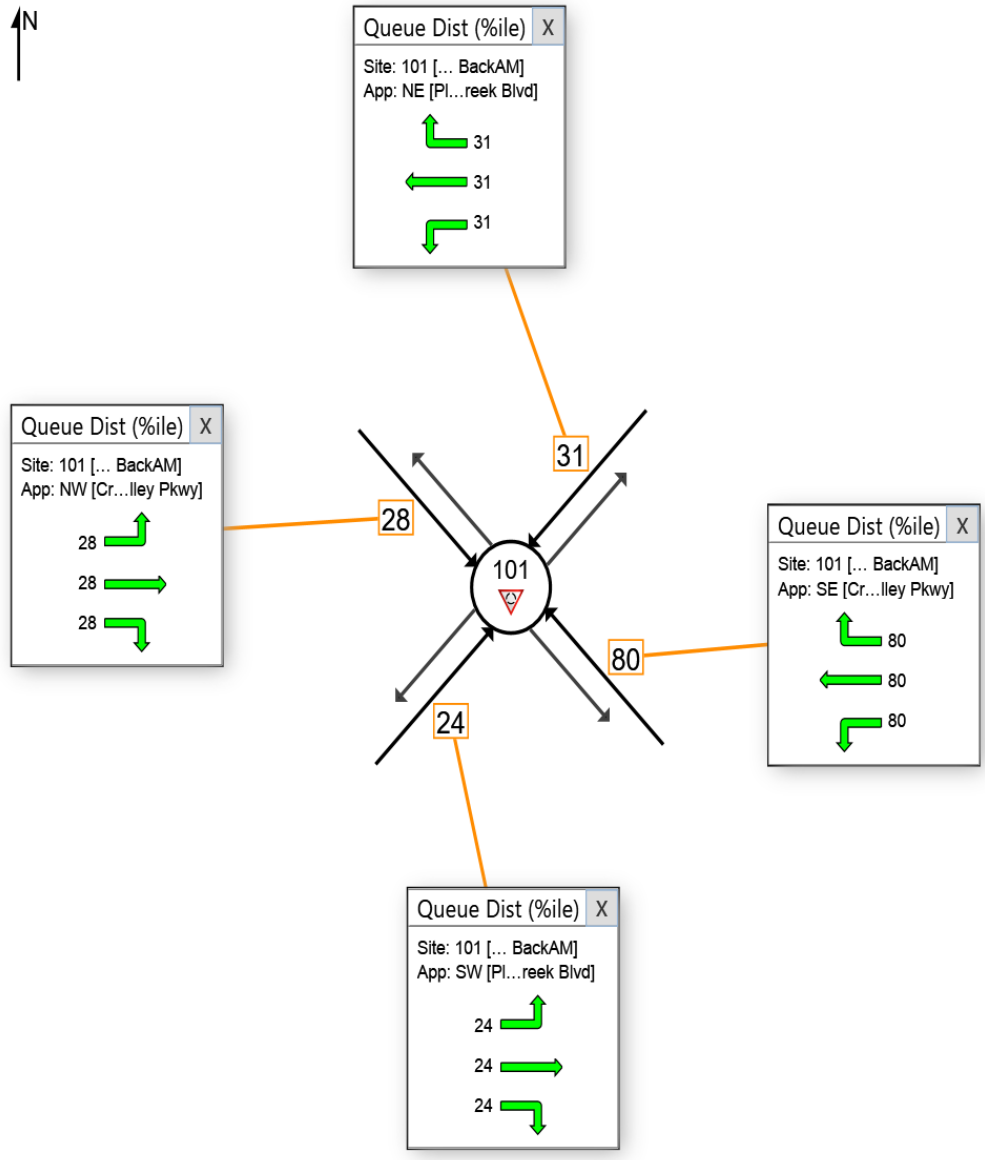
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 101 [Int #5_2030 Back_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

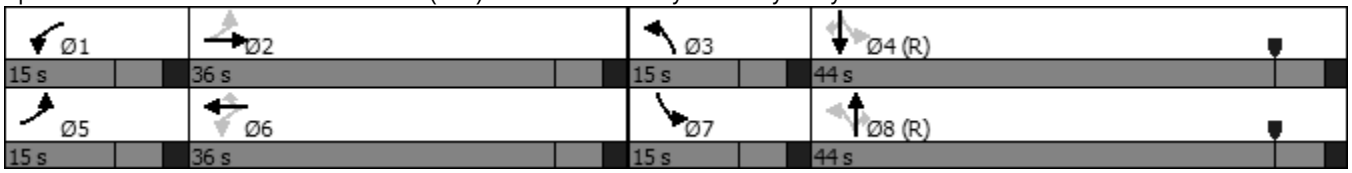
Close All Popups



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	5	5	10	15	55	2	105	50	50	115	5
Future Volume (vph)	5	5	10	15	55	2	105	50	50	115	5
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2	1	6		3	8		7	4	
Permitted Phases	2		6		6	8		8	4		4
Detector Phase	5	2	1	6	6	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.0	33.0	11.0	33.0	33.0	11.0	33.0	33.0	11.0	33.0	33.0
Total Split (s)	15.0	36.0	15.0	36.0	36.0	15.0	44.0	44.0	15.0	44.0	44.0
Total Split (%)	13.6%	32.7%	13.6%	32.7%	32.7%	13.6%	40.0%	40.0%	13.6%	40.0%	40.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	43.7	42.4	43.9	42.5	42.5	46.5	42.1	42.1	52.4	50.6	50.6
Actuated g/C Ratio	0.40	0.39	0.40	0.39	0.39	0.42	0.38	0.38	0.48	0.46	0.46
v/c Ratio	0.01	0.01	0.02	0.02	0.09	0.00	0.16	0.08	0.09	0.15	0.01

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 104 (95%), Referenced to phase 4:SBTL and 8:NBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.16
Intersection Signal Delay: 15.4
Intersection Capacity Utilization 35.8%
Analysis Period (min) 15

Splits and Phases: 7: Dawson Trail Blvd. (new) & Territorial Rd./Crystal Valley Pkwy.





Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	7	8	11	16	60	2	114	54	54	125	5
v/c Ratio	0.01	0.01	0.02	0.02	0.09	0.00	0.16	0.08	0.09	0.15	0.01
Control Delay	19.6	22.8	19.6	23.6	0.2	15.0	24.7	0.2	15.8	19.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.6	22.8	19.6	23.6	0.2	15.0	24.7	0.2	15.8	19.0	0.0
Queue Length 50th (ft)	3	3	5	7	0	1	54	0	20	48	0
Queue Length 95th (ft)	10	13	16	25	0	5	99	0	42	102	0
Internal Link Dist (ft)		1067		1733			1614			1008	
Turn Bay Length (ft)	200		500			500		1000	500		500
Base Capacity (vph)	602	707	593	720	703	606	712	697	587	833	788
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.01	0.02	0.02	0.09	0.00	0.16	0.08	0.09	0.15	0.01

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	5	1	10	15	55	2	105	50	50	115	5
Future Volume (veh/h)	5	5	1	10	15	55	2	105	50	50	115	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900	1870	1870	1870	1870	1870	1870	1870	1826	1826
Adj Flow Rate, veh/h	7	7	1	11	16	60	2	114	54	54	125	5
Peak Hour Factor	0.75	0.75	0.75	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	0	2	2	2	2	2	2	2	5	5
Cap, veh/h	445	437	62	468	518	439	645	859	728	647	901	764
Arrive On Green	0.01	0.27	0.27	0.01	0.28	0.28	0.00	0.46	0.46	0.04	0.49	0.49
Sat Flow, veh/h	1810	1601	229	1781	1870	1585	1781	1870	1585	1781	1826	1547
Grp Volume(v), veh/h	7	0	8	11	16	60	2	114	54	54	125	5
Grp Sat Flow(s),veh/h/ln	1810	0	1829	1781	1870	1585	1781	1870	1585	1781	1826	1547
Q Serve(g_s), s	0.3	0.0	0.4	0.5	0.7	3.1	0.1	3.9	2.1	1.7	4.1	0.2
Cycle Q Clear(g_c), s	0.3	0.0	0.4	0.5	0.7	3.1	0.1	3.9	2.1	1.7	4.1	0.2
Prop In Lane	1.00		0.13	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	445	0	499	468	518	439	645	859	728	647	901	764
V/C Ratio(X)	0.02	0.00	0.02	0.02	0.03	0.14	0.00	0.13	0.07	0.08	0.14	0.01
Avail Cap(c_a), veh/h	577	0	499	591	518	439	786	859	728	728	901	764
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.5	0.0	29.2	28.2	29.0	29.9	15.9	17.1	16.6	14.5	15.2	14.2
Incr Delay (d2), s/veh	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.3	0.2	0.1	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.2	0.2	0.3	1.2	0.0	1.7	0.8	0.7	1.8	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.5	0.0	29.3	28.3	29.0	30.0	15.9	17.4	16.8	14.5	15.5	14.2
LnGrp LOS	C	A	C	C	C	C	B	B	B	B	B	B
Approach Vol, veh/h		15			87			170			184	
Approach Delay, s/veh		28.9			29.6			17.2			15.2	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.4	36.0	6.3	60.3	7.0	36.5	10.0	56.5
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	9.0	30.0	9.0	38.0	9.0	30.0	9.0	38.0
Max Q Clear Time (g_c+I1), s	2.5	2.4	2.1	6.1	2.3	5.1	3.7	5.9
Green Ext Time (p_c), s	0.0	0.0	0.0	0.7	0.0	0.2	0.0	0.8

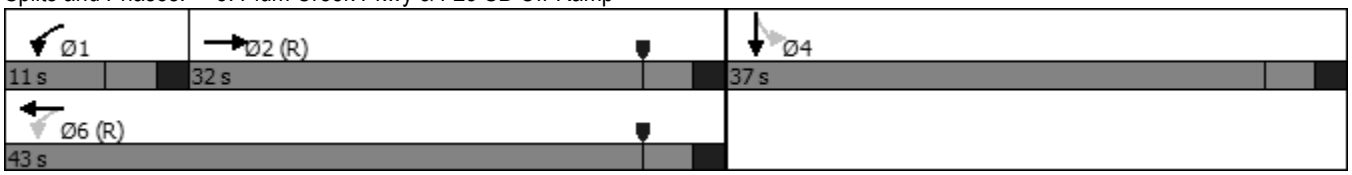
Intersection Summary	
HCM 6th Ctrl Delay	19.1
HCM 6th LOS	B

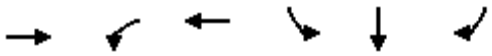
Twin Mesa Metropolitan District New Service Plan
SV2023-003
Planning Commission Supplemental Memo Page 381 of 1222

Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	557	90	603	630	5	386
Future Volume (vph)	557	90	603	630	5	386
Turn Type	NA	pm+pt	NA	Perm	NA	Free
Protected Phases	2	1	6		4	
Permitted Phases		6		4		Free
Detector Phase	2	1	6	4	4	
Switch Phase						
Minimum Initial (s)	10.0	5.0	10.0	5.0	5.0	
Minimum Split (s)	30.0	10.0	30.0	10.0	10.0	
Total Split (s)	32.0	11.0	43.0	37.0	37.0	
Total Split (%)	40.0%	13.8%	53.8%	46.3%	46.3%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes				
Recall Mode	C-Max	None	C-Max	None	None	
Act Effct Green (s)	40.3	50.6	50.6	19.4	19.4	80.0
Actuated g/C Ratio	0.50	0.63	0.63	0.24	0.24	1.00
v/c Ratio	0.29	0.21	0.30	0.60	0.61	0.27
Control Delay	13.0	8.3	8.0	29.4	32.6	0.4
Queue Delay	0.0	0.0	0.8	0.0	0.0	0.0
Total Delay	13.0	8.3	8.8	29.4	32.6	0.4
LOS	B	A	A	C	C	A
Approach Delay	13.0		8.7		19.1	
Approach LOS	B		A		B	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 20 (25%), Referenced to phase 2:EBT and 6:WBTL, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 14.4	Intersection LOS: B
Intersection Capacity Utilization 78.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 8: Plum Creek Pkwy & I-25 SB Off-Ramp





Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	737	100	670	469	237	429
v/c Ratio	0.29	0.21	0.30	0.60	0.61	0.27
Control Delay	13.0	8.3	8.0	29.4	32.6	0.4
Queue Delay	0.0	0.0	0.8	0.0	0.0	0.0
Total Delay	13.0	8.3	8.8	29.4	32.6	0.4
Queue Length 50th (ft)	71	17	68	115	116	0
Queue Length 95th (ft)	126	46	130	141	169	0
Internal Link Dist (ft)	437		181		388	
Turn Bay Length (ft)						160
Base Capacity (vph)	2527	469	2239	1288	646	1583
Starvation Cap Reductn	0	0	1196	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.21	0.64	0.36	0.37	0.27

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	557	106	90	603	0	0	0	0	630	5	386
Future Volume (vph)	0	557	106	90	603	0	0	0	0	630	5	386
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0					5.0	5.0	4.0
Lane Util. Factor		0.91		1.00	0.95					0.91	0.91	1.00
Frt		0.98		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		4963		1770	3539					3221	1616	1583
Flt Permitted		1.00		0.30	1.00					0.95	0.95	1.00
Satd. Flow (perm)		4963		562	3539					3221	1616	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	619	118	100	670	0	0	0	0	700	6	429
RTOR Reduction (vph)	0	27	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	710	0	100	670	0	0	0	0	469	237	429
Turn Type		NA		pm+pt	NA					Perm	NA	Free
Protected Phases		2		1	6						4	
Permitted Phases				6						4		Free
Actuated Green, G (s)		39.3		50.6	50.6					19.4	19.4	80.0
Effective Green, g (s)		39.3		50.6	50.6					19.4	19.4	80.0
Actuated g/C Ratio		0.49		0.63	0.63					0.24	0.24	1.00
Clearance Time (s)		5.0		5.0	5.0					5.0	5.0	
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		2438		450	2238					781	391	1583
v/s Ratio Prot		0.14		0.02	c0.19							
v/s Ratio Perm				0.12						0.15	0.15	c0.27
v/c Ratio		0.29		0.22	0.30					0.60	0.61	0.27
Uniform Delay, d1		12.1		6.1	6.7					26.9	26.9	0.0
Progression Factor		1.00		1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.3		0.3	0.3					1.3	2.7	0.4
Delay (s)		12.4		6.4	7.0					28.2	29.6	0.4
Level of Service		B		A	A					C	C	A
Approach Delay (s)		12.4			6.9			0.0			18.0	
Approach LOS		B			A			A			B	

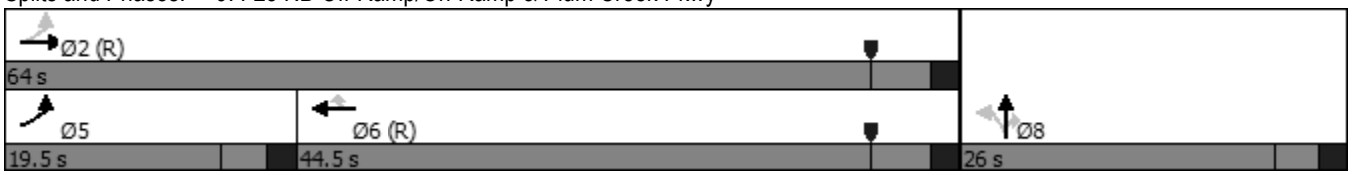
Intersection Summary			
HCM 2000 Control Delay	13.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	264	922	545	975	159	2	115
Future Volume (vph)	264	922	545	975	159	2	115
Turn Type	pm+pt	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6			8	
Permitted Phases	2			6	8		8
Detector Phase	5	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0	5.0
Minimum Split (s)	10.0	31.0	24.0	24.0	40.0	40.0	40.0
Total Split (s)	19.5	64.0	44.5	44.5	26.0	26.0	26.0
Total Split (%)	21.7%	71.1%	49.4%	49.4%	28.9%	28.9%	28.9%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max
Act Effct Green (s)	59.0	58.0	40.0	40.0	21.0	21.0	21.0
Actuated g/C Ratio	0.66	0.64	0.44	0.44	0.23	0.23	0.23
v/c Ratio	0.81	0.31	0.71	0.57	0.27	0.27	0.22

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 53 (59%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 14.4
Intersection Capacity Utilization 78.4%
Analysis Period (min) 15

Splits and Phases: 9: I-25 NB Off-Ramp/On-Ramp & Plum Creek Pkwy





Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	287	1002	1122	530	104	102	94
v/c Ratio	0.81	0.31	0.71	0.57	0.27	0.27	0.22
Control Delay	35.2	7.4	17.5	4.3	30.4	24.1	7.4
Queue Delay	0.3	1.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.4	8.4	17.5	4.3	30.4	24.1	7.4
Queue Length 50th (ft)	92	82	207	0	50	39	0
Queue Length 95th (ft)	#209	103	290	63	97	87	38
Internal Link Dist (ft)		181	431			480	
Turn Bay Length (ft)					350		150
Base Capacity (vph)	383	3277	1574	934	392	382	425
Starvation Cap Reductn	5	1915	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.74	0.71	0.57	0.27	0.27	0.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	264	922	0	0	545	975	159	2	115	0	0	0
Future Volume (veh/h)	264	922	0	0	545	975	159	2	115	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	287	1002	0	0	592	1060	213	0	84			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	337	3291	0	0	911	1544	831	0	370			
Arrive On Green	0.10	0.64	0.00	0.00	0.49	0.49	0.23	0.00	0.23			
Sat Flow, veh/h	1781	5274	0	0	1870	3170	3563	0	1585			
Grp Volume(v), veh/h	287	1002	0	0	592	1060	213	0	84			
Grp Sat Flow(s),veh/h/ln	1781	1702	0	0	1870	1585	1781	0	1585			
Q Serve(g_s), s	6.7	7.8	0.0	0.0	21.4	23.2	4.4	0.0	3.9			
Cycle Q Clear(g_c), s	6.7	7.8	0.0	0.0	21.4	23.2	4.4	0.0	3.9			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	337	3291	0	0	911	1544	831	0	370			
V/C Ratio(X)	0.85	0.30	0.00	0.00	0.65	0.69	0.26	0.00	0.23			
Avail Cap(c_a), veh/h	442	3291	0	0	911	1544	831	0	370			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.92	0.92	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	16.8	7.1	0.0	0.0	17.3	17.8	28.1	0.0	27.9			
Incr Delay (d2), s/veh	11.0	0.2	0.0	0.0	3.6	2.5	0.7	0.0	1.4			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	3.9	2.6	0.0	0.0	9.5	8.4	1.9	0.0	1.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.8	7.3	0.0	0.0	20.9	20.3	28.9	0.0	29.4			
LnGrp LOS	C	A	A	A	C	C	C	A	C			
Approach Vol, veh/h		1289			1652			297				
Approach Delay, s/veh		11.9			20.5			29.0				
Approach LOS		B			C			C				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		64.0			14.2	49.8		26.0				
Change Period (Y+Rc), s		6.0			5.0	6.0		5.0				
Max Green Setting (Gmax), s		58.0			14.5	38.5		21.0				
Max Q Clear Time (g_c+I1), s		9.8			8.7	25.2		6.4				
Green Ext Time (p_c), s		9.2			0.4	7.4		0.9				

Intersection Summary	
HCM 6th Ctrl Delay	17.8
HCM 6th LOS	B

Notes

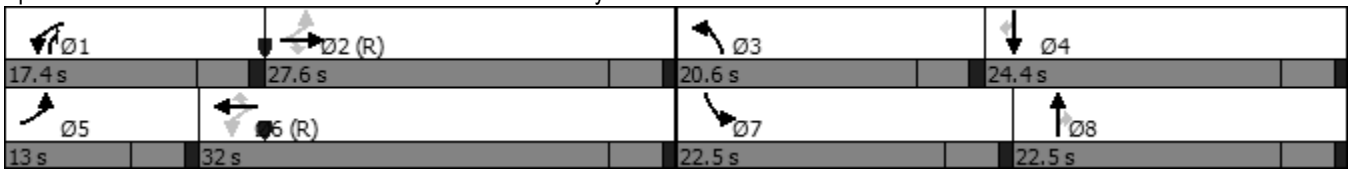
User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	338	60	200	529	54	83	40	217	82	100	26
Future Volume (vph)	22	338	60	200	529	54	83	40	217	82	100	26
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases	2		2	6		6			8			4
Detector Phase	5	2	2	1	6	6	3	8	1	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	9.5	22.5	22.5	22.5
Total Split (s)	13.0	27.6	27.6	17.4	32.0	32.0	20.6	22.5	17.4	22.5	24.4	24.4
Total Split (%)	14.4%	30.7%	30.7%	19.3%	35.6%	35.6%	22.9%	25.0%	19.3%	25.0%	27.1%	27.1%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	Max	Max	Max
Act Effct Green (s)	30.8	24.6	24.6	40.5	35.9	35.9	9.9	13.1	24.9	27.0	28.2	28.2
Actuated g/C Ratio	0.34	0.27	0.27	0.45	0.40	0.40	0.11	0.15	0.28	0.30	0.31	0.31
v/c Ratio	0.07	0.38	0.12	0.48	0.41	0.08	0.46	0.08	0.39	0.09	0.10	0.05

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.48
Intersection Signal Delay: 20.5
Intersection Capacity Utilization 42.9%
Analysis Period (min) 15

Splits and Phases: 10: Prairie Hawk Dr & Plum Creek Pkwy



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	24	367	65	217	575	59	90	43	236	89	109	28
v/c Ratio	0.07	0.38	0.12	0.48	0.41	0.08	0.46	0.08	0.39	0.09	0.10	0.05
Control Delay	15.0	28.4	0.7	19.5	21.7	0.2	44.6	30.7	4.5	27.5	24.6	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.0	28.4	0.7	19.5	21.7	0.2	44.6	30.7	4.5	27.5	24.6	0.2
Queue Length 50th (ft)	7	90	0	75	108	0	49	10	0	21	23	0
Queue Length 95th (ft)	21	132	3	124	189	0	92	24	44	41	46	0
Internal Link Dist (ft)		595			922			624			590	
Turn Bay Length (ft)	230		230	230		230	230		230	230		250
Base Capacity (vph)	388	965	524	468	1412	708	316	707	631	1029	1109	583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.38	0.12	0.46	0.41	0.08	0.28	0.06	0.37	0.09	0.10	0.05

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	338	60	200	529	54	83	40	217	82	100	26
Future Volume (veh/h)	22	338	60	200	529	54	83	40	217	82	100	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	24	367	65	217	575	0	90	43	236	89	109	28
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	381	1225	546	513	1485		117	558	405	691	1036	462
Arrive On Green	0.03	0.34	0.34	0.10	0.42	0.00	0.07	0.16	0.16	0.20	0.29	0.29
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	24	367	65	217	575	0	90	43	236	89	109	28
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1777	1585	1728	1777	1585
Q Serve(g_s), s	0.8	6.8	2.5	6.7	10.1	0.0	4.5	0.9	11.7	1.9	2.0	1.1
Cycle Q Clear(g_c), s	0.8	6.8	2.5	6.7	10.1	0.0	4.5	0.9	11.7	1.9	2.0	1.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	381	1225	546	513	1485		117	558	405	691	1036	462
V/C Ratio(X)	0.06	0.30	0.12	0.42	0.39		0.77	0.08	0.58	0.13	0.11	0.06
Avail Cap(c_a), veh/h	504	1225	546	593	1485		319	711	473	691	1036	462
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.2	21.6	20.2	15.2	18.2	0.0	41.4	32.4	29.3	29.6	23.3	23.0
Incr Delay (d2), s/veh	0.1	0.6	0.4	0.6	0.8	0.0	10.2	0.1	1.3	0.4	0.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	2.7	1.0	2.5	3.9	0.0	2.3	0.4	4.4	0.8	0.8	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.3	22.2	20.6	15.8	18.9	0.0	51.6	32.4	30.7	29.9	23.5	23.3
LnGrp LOS	B	C	C	B	B		D	C	C	C	C	C
Approach Vol, veh/h		456			792	A		369			226	
Approach Delay, s/veh		21.7			18.1			36.0			26.0	
Approach LOS		C			B			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.4	35.5	10.4	30.7	6.8	42.1	22.5	18.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	12.9	23.1	16.1	19.9	8.5	27.5	18.0	18.0
Max Q Clear Time (g_c+I1), s	8.7	8.8	6.5	4.0	2.8	12.1	3.9	13.7
Green Ext Time (p_c), s	0.2	2.0	0.1	0.5	0.0	3.1	0.2	0.4

Intersection Summary	
HCM 6th Ctrl Delay	23.5
HCM 6th LOS	C

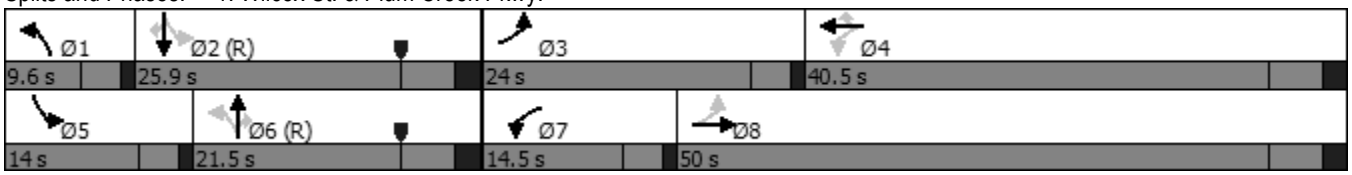
Notes

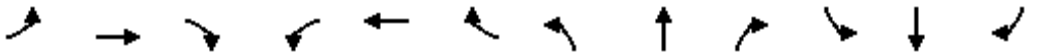
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	290	1215	235	40	805	175	170	170	90	180	170	285
Future Volume (vph)	290	1215	235	40	805	175	170	170	90	180	170	285
Turn Type	pm+pt	NA	Free	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		Free	4		4	6		6	2		2
Detector Phase	3	8		7	4	4	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	5.0	10.0	10.0	5.0	4.0	4.0
Minimum Split (s)	9.5	31.0		14.5	31.0	31.0	9.5	16.0	16.0	9.5	10.0	10.0
Total Split (s)	24.0	50.0		14.5	40.5	40.5	9.6	21.5	21.5	14.0	25.9	25.9
Total Split (%)	24.0%	50.0%		14.5%	40.5%	40.5%	9.6%	21.5%	21.5%	14.0%	25.9%	25.9%
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	2.0		1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	54.5	44.1	100.0	45.4	33.4	33.4	30.0	22.4	22.4	36.8	25.9	25.9
Actuated g/C Ratio	0.54	0.44	1.00	0.45	0.33	0.33	0.30	0.22	0.22	0.37	0.26	0.26
v/c Ratio	0.82	0.85	0.16	0.17	0.73	0.28	0.24	0.43	0.19	0.48	0.38	0.48

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 69 (69%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 29.4
Intersection Capacity Utilization 93.6%
Analysis Period (min) 15

Splits and Phases: 1: Wilcox St. & Plum Creek Pkwy.





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	315	1321	255	43	866	188	179	179	95	196	185	310
v/c Ratio	0.82	0.85	0.16	0.17	0.73	0.28	0.24	0.43	0.19	0.48	0.38	0.48
Control Delay	34.5	31.2	0.2	16.6	45.6	12.9	24.2	40.5	0.8	28.7	35.9	6.9
Queue Delay	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0
Total Delay	34.5	31.6	0.2	16.6	45.6	12.9	24.2	40.5	0.8	29.4	35.9	6.9
Queue Length 50th (ft)	97	381	0	13	248	8	42	108	0	96	106	0
Queue Length 95th (ft)	191	477	0	m37	371	96	68	180	0	157	174	71
Internal Link Dist (ft)		553			473			812			658	
Turn Bay Length (ft)	280		250	185			190		195	130		130
Base Capacity (vph)	455	1588	1564	260	1283	706	753	412	506	425	486	643
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	50	0	0	0	0	0	0	15	64	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.86	0.16	0.17	0.67	0.27	0.24	0.43	0.19	0.54	0.38	0.48

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	290	1215	235	40	805	175	170	170	90	180	170	285
Future Volume (veh/h)	290	1215	235	40	805	175	170	170	90	180	170	285
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1856	1856	1856	1885	1885	1885
Adj Flow Rate, veh/h	315	1321	0	43	866	188	179	179	95	196	185	310
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.95	0.95	0.95	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	1	1	1
Cap, veh/h	366	1474		225	1266	564	646	400	338	398	489	414
Arrive On Green	0.13	0.41	0.00	0.02	0.12	0.12	0.06	0.22	0.22	0.10	0.26	0.26
Sat Flow, veh/h	1781	3554	1585	1781	3554	1583	3428	1856	1570	1795	1885	1596
Grp Volume(v), veh/h	315	1321	0	43	866	188	179	179	95	196	185	310
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1583	1714	1856	1570	1795	1885	1596
Q Serve(g_s), s	10.6	34.6	0.0	1.5	23.4	10.9	4.0	8.4	5.1	8.1	8.1	17.9
Cycle Q Clear(g_c), s	10.6	34.6	0.0	1.5	23.4	10.9	4.0	8.4	5.1	8.1	8.1	17.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	366	1474		225	1266	564	646	400	338	398	489	414
V/C Ratio(X)	0.86	0.90		0.19	0.68	0.33	0.28	0.45	0.28	0.49	0.38	0.75
Avail Cap(c_a), veh/h	494	1564		288	1266	564	646	400	338	398	489	414
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.87	0.87	0.87	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.7	27.2	0.0	22.6	38.7	33.2	28.1	34.1	32.8	25.4	30.4	34.0
Incr Delay (d2), s/veh	8.9	6.9	0.0	0.1	1.3	0.3	0.1	3.6	2.1	0.4	2.2	11.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	15.3	0.0	0.6	11.3	4.6	1.7	4.2	2.1	3.5	4.0	8.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.6	34.2	0.0	22.7	40.1	33.5	28.2	37.7	34.8	25.8	32.6	45.8
LnGrp LOS	C	C		C	D	C	C	D	C	C	C	D
Approach Vol, veh/h		1636	A		1097			453			691	
Approach Delay, s/veh		33.3			38.3			33.3			36.6	
Approach LOS		C			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	31.9	16.8	41.6	14.0	27.5	11.0	47.5
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	5.6	19.9	20.0	34.5	10.0	15.5	10.5	44.0
Max Q Clear Time (g_c+I1), s	6.0	19.9	12.6	25.4	10.1	10.4	3.5	36.6
Green Ext Time (p_c), s	0.0	0.0	0.2	4.3	0.0	0.8	0.0	4.9

Intersection Summary	
HCM 6th Ctrl Delay	35.3
HCM 6th LOS	D

Notes

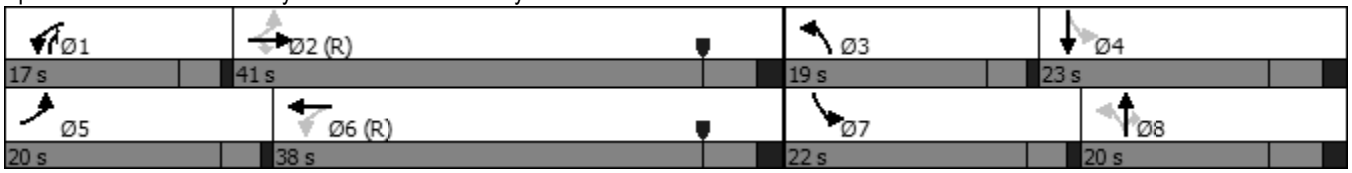
User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	200	1170	180	140	615	215	120	235	240	135	200
Future Volume (vph)	200	1170	180	140	615	215	120	235	240	135	200
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	pm+ov	pm+pt	NA	Free
Protected Phases	5	2		1	6	3	8	1	7	4	
Permitted Phases	2		2	6		8		8	4		Free
Detector Phase	5	2	2	1	6	3	8	1	7	4	
Switch Phase											
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0	3.0	5.0	3.0	3.0	5.0	
Minimum Split (s)	9.5	32.0	32.0	9.5	32.0	9.5	11.0	9.5	9.5	11.0	
Total Split (s)	20.0	41.0	41.0	17.0	38.0	19.0	20.0	17.0	22.0	23.0	
Total Split (%)	20.0%	41.0%	41.0%	17.0%	38.0%	19.0%	20.0%	17.0%	22.0%	23.0%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.0	3.0	3.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	1.0	2.0	1.0	1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	4.0	4.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None	None	
Act Effct Green (s)	57.9	45.6	45.6	53.9	43.6	26.4	11.2	21.5	29.8	12.9	100.0
Actuated g/C Ratio	0.58	0.46	0.46	0.54	0.44	0.26	0.11	0.22	0.30	0.13	1.00
v/c Ratio	0.56	0.78	0.25	0.64	0.55	0.58	0.62	0.60	0.62	0.60	0.13

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 60 (60%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 22.2
Intersection Capacity Utilization 77.0%
Analysis Period (min) 15

Splits and Phases: 2: Perry St. & Plum Creek Pkwy.





Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	217	1272	196	147	842	234	130	255	261	147	217
v/c Ratio	0.56	0.78	0.25	0.64	0.55	0.58	0.62	0.60	0.62	0.60	0.13
Control Delay	8.5	22.0	5.2	34.7	16.3	32.0	54.6	22.5	32.9	50.7	0.2
Queue Delay	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.5	22.8	5.2	34.7	16.3	32.0	54.6	22.5	32.9	50.7	0.2
Queue Length 50th (ft)	11	393	24	45	108	114	80	76	129	90	0
Queue Length 95th (ft)	m32	#590	m58	m111	234	168	138	138	186	147	0
Internal Link Dist (ft)		473			1330		455			497	
Turn Bay Length (ft)	170		70	100		185		65	120		120
Base Capacity (vph)	474	1630	778	313	1528	430	263	499	464	323	1615
Starvation Cap Reductn	0	127	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.85	0.25	0.47	0.55	0.54	0.49	0.51	0.56	0.46	0.13

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	200	1170	180	140	615	185	215	120	235	240	135	200
Future Volume (veh/h)	200	1170	180	140	615	185	215	120	235	240	135	200
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	217	1272	196	147	647	195	234	130	255	261	147	0
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	0	0	0
Cap, veh/h	470	1622	723	236	1171	353	406	264	327	406	289	
Arrive On Green	0.06	0.30	0.30	0.13	0.86	0.86	0.13	0.14	0.14	0.14	0.15	0.00
Sat Flow, veh/h	1795	3582	1596	1795	2712	816	1795	1885	1594	1810	1900	1610
Grp Volume(v), veh/h	217	1272	196	147	427	415	234	130	255	261	147	0
Grp Sat Flow(s),veh/h/ln	1795	1791	1596	1795	1791	1737	1795	1885	1594	1810	1900	1610
Q Serve(g_s), s	6.5	32.5	9.3	4.6	6.2	6.2	10.9	6.4	14.0	12.1	7.1	0.0
Cycle Q Clear(g_c), s	6.5	32.5	9.3	4.6	6.2	6.2	10.9	6.4	14.0	12.1	7.1	0.0
Prop In Lane	1.00		1.00	1.00		0.47	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	470	1622	723	236	774	750	406	264	327	406	289	
V/C Ratio(X)	0.46	0.78	0.27	0.62	0.55	0.55	0.58	0.49	0.78	0.64	0.51	
Avail Cap(c_a), veh/h	603	1622	723	352	774	750	443	264	327	475	323	
HCM Platoon Ratio	0.67	0.67	0.67	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.56	0.56	0.56	0.90	0.90	0.90	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	13.9	30.4	22.3	19.5	4.3	4.3	30.9	39.7	37.6	30.4	39.0	0.0
Incr Delay (d2), s/veh	0.1	2.2	0.5	0.9	2.5	2.6	0.8	1.1	11.0	1.4	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	14.9	3.7	1.7	1.9	1.9	4.7	3.0	6.8	5.3	3.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.0	32.6	22.8	20.4	6.8	6.9	31.7	40.8	48.5	31.8	40.0	0.0
LnGrp LOS	B	C	C	C	A	A	C	D	D	C	D	
Approach Vol, veh/h		1685			989			619			408	A
Approach Delay, s/veh		29.0			8.9			40.5			34.7	
Approach LOS		C			A			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.5	51.3	17.0	21.2	12.6	49.2	18.2	20.0
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	13.0	35.0	15.0	17.0	16.0	32.0	18.0	14.0
Max Q Clear Time (g_c+I1), s	6.6	34.5	12.9	9.1	8.5	8.2	14.1	16.0
Green Ext Time (p_c), s	0.1	0.4	0.0	0.3	0.1	5.6	0.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	26.2
HCM 6th LOS	C

Notes

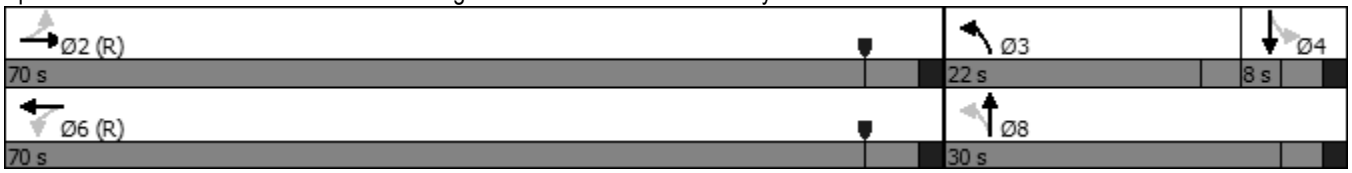
User approved pedestrian interval to be less than phase max green.

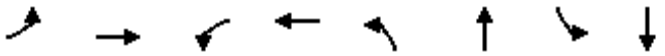
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	30	1230	30	670	260	0	1	1
Future Volume (vph)	30	1230	30	670	260	0	1	1
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases		2		6	3	8		4
Permitted Phases	2		6		8		4	
Detector Phase	2	2	6	6	3	8	4	4
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0	2.0	2.0
Minimum Split (s)	33.0	33.0	28.0	28.0	14.5	10.0	7.0	7.0
Total Split (s)	70.0	70.0	70.0	70.0	22.0	30.0	8.0	8.0
Total Split (%)	70.0%	70.0%	70.0%	70.0%	22.0%	30.0%	8.0%	8.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	3.0	5.0	5.0	5.0
Lead/Lag					Lead		Lag	Lag
Lead-Lag Optimize?					Yes		Yes	Yes
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	Max	Max	Max
Act Effct Green (s)	64.0	64.0	64.0	64.0	27.0	25.0	5.5	5.5
Actuated g/C Ratio	0.64	0.64	0.64	0.64	0.27	0.25	0.06	0.06
v/c Ratio	0.08	0.79	0.41	0.32	0.72	0.07	0.03	0.10

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 85 (85%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 13.5
Intersection Capacity Utilization 76.6%
Analysis Period (min) 15

Splits and Phases: 3: Plum Creek Blvd./Fairgrounds Rd. & Plum Creek Pkwy.





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	33	1755	33	730	283	33	2	10
v/c Ratio	0.08	0.79	0.41	0.32	0.72	0.07	0.03	0.10
Control Delay	4.7	10.7	27.8	8.6	43.5	2.1	48.0	31.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.7	10.7	27.8	8.6	43.5	2.1	48.0	31.8
Queue Length 50th (ft)	4	153	9	101	157	0	1	1
Queue Length 95th (ft)	m6	280	#50	131	243	7	6	11
Internal Link Dist (ft)		1330		637		613		434
Turn Bay Length (ft)	70		55				110	
Base Capacity (vph)	423	2221	80	2265	412	449	76	98
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.79	0.41	0.32	0.69	0.07	0.03	0.10

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	1230	385	30	670	2	260	0	30	1	1	5
Future Volume (veh/h)	30	1230	385	30	670	2	260	0	30	1	1	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1870	1870	1870	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	33	1337	418	33	728	2	283	0	33	2	2	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.60	0.60	0.60
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	0	0	0
Cap, veh/h	474	1733	524	247	2327	6	437	0	399	151	19	75
Arrive On Green	1.00	1.00	1.00	0.64	0.64	0.64	0.16	0.00	0.25	0.06	0.06	0.06
Sat Flow, veh/h	731	2708	818	273	3635	10	1795	0	1598	1398	332	1329
Grp Volume(v), veh/h	33	868	887	33	356	374	283	0	33	2	0	10
Grp Sat Flow(s),veh/h/ln	731	1791	1736	273	1777	1869	1795	0	1598	1398	0	1661
Q Serve(g_s), s	0.7	0.0	0.0	4.9	9.0	9.0	14.2	0.0	1.6	0.1	0.0	0.6
Cycle Q Clear(g_c), s	9.7	0.0	0.0	4.9	9.0	9.0	14.2	0.0	1.6	0.1	0.0	0.6
Prop In Lane	1.00		0.47	1.00		0.01	1.00		1.00	1.00		0.80
Lane Grp Cap(c), veh/h	474	1146	1111	247	1137	1196	437	0	399	151	0	94
V/C Ratio(X)	0.07	0.76	0.80	0.13	0.31	0.31	0.65	0.00	0.08	0.01	0.00	0.11
Avail Cap(c_a), veh/h	474	1146	1111	247	1137	1196	485	0	399	151	0	94
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.61	0.61	0.61	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	0.7	0.0	0.0	7.4	8.1	8.1	34.3	0.0	28.7	44.6	0.0	44.8
Incr Delay (d2), s/veh	0.2	2.9	3.8	1.1	0.7	0.7	1.7	0.0	0.4	0.2	0.0	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.9	1.2	0.3	3.3	3.4	6.3	0.0	0.6	0.1	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.9	2.9	3.8	8.5	8.8	8.8	36.1	0.0	29.1	44.7	0.0	47.1
LnGrp LOS	A	A	A	A	A	A	D	A	C	D	A	D
Approach Vol, veh/h		1788			763			316			12	
Approach Delay, s/veh		3.3			8.8			35.3			46.7	
Approach LOS		A			A			D			D	

Timer - Assigned Phs	2	3	4	6	8
Phs Duration (G+Y+Rc), s	70.0	19.3	10.7	70.0	30.0
Change Period (Y+Rc), s	6.0	3.0	5.0	6.0	5.0
Max Green Setting (Gmax), s	64.0	19.0	3.0	64.0	25.0
Max Q Clear Time (g_c+I1), s	11.7	16.2	2.6	11.0	3.6
Green Ext Time (p_c), s	23.0	0.1	0.0	6.2	0.1

Intersection Summary	
HCM 6th Ctrl Delay	8.4
HCM 6th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

DELAY (CONTROL)

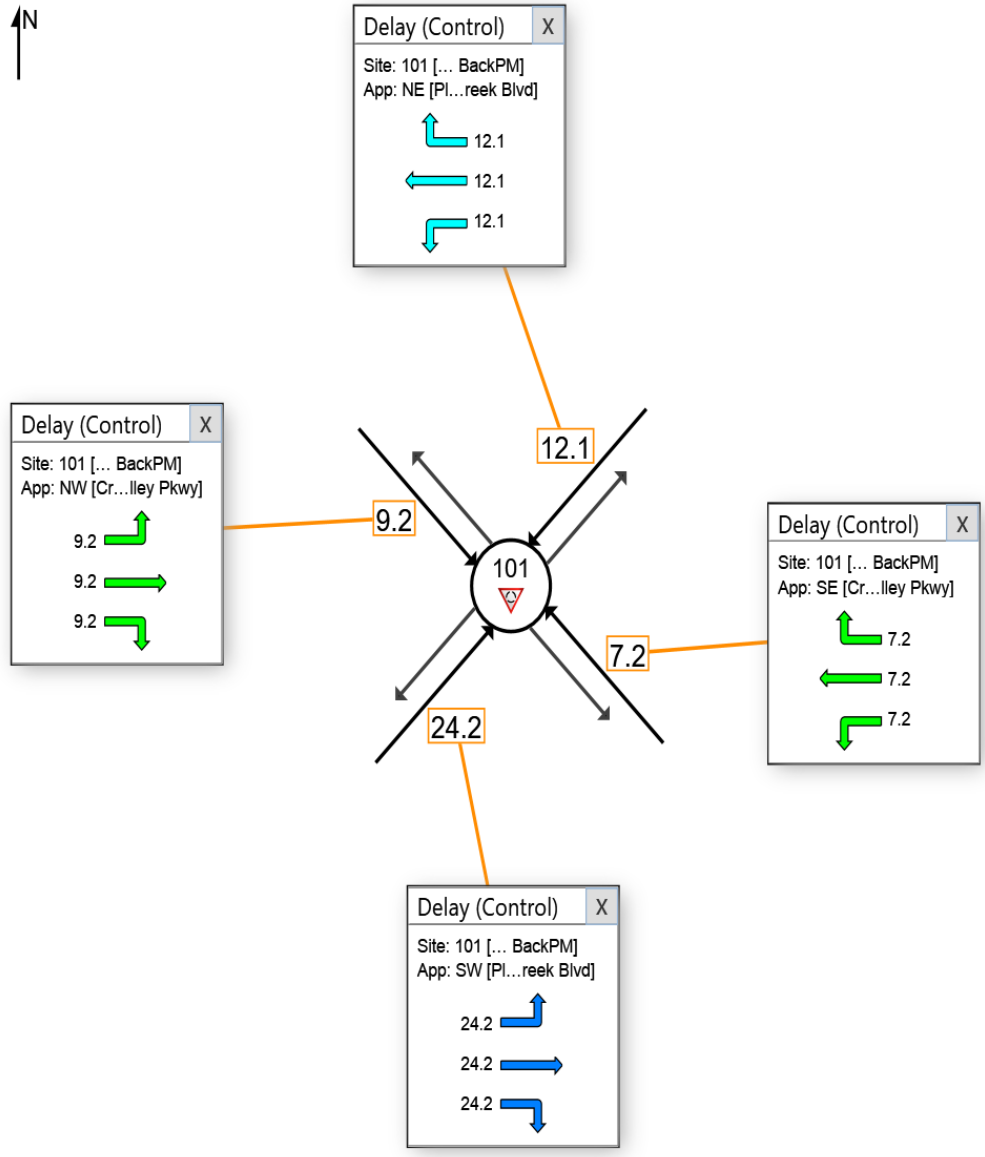
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 101 [Int #5_2030 Back_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

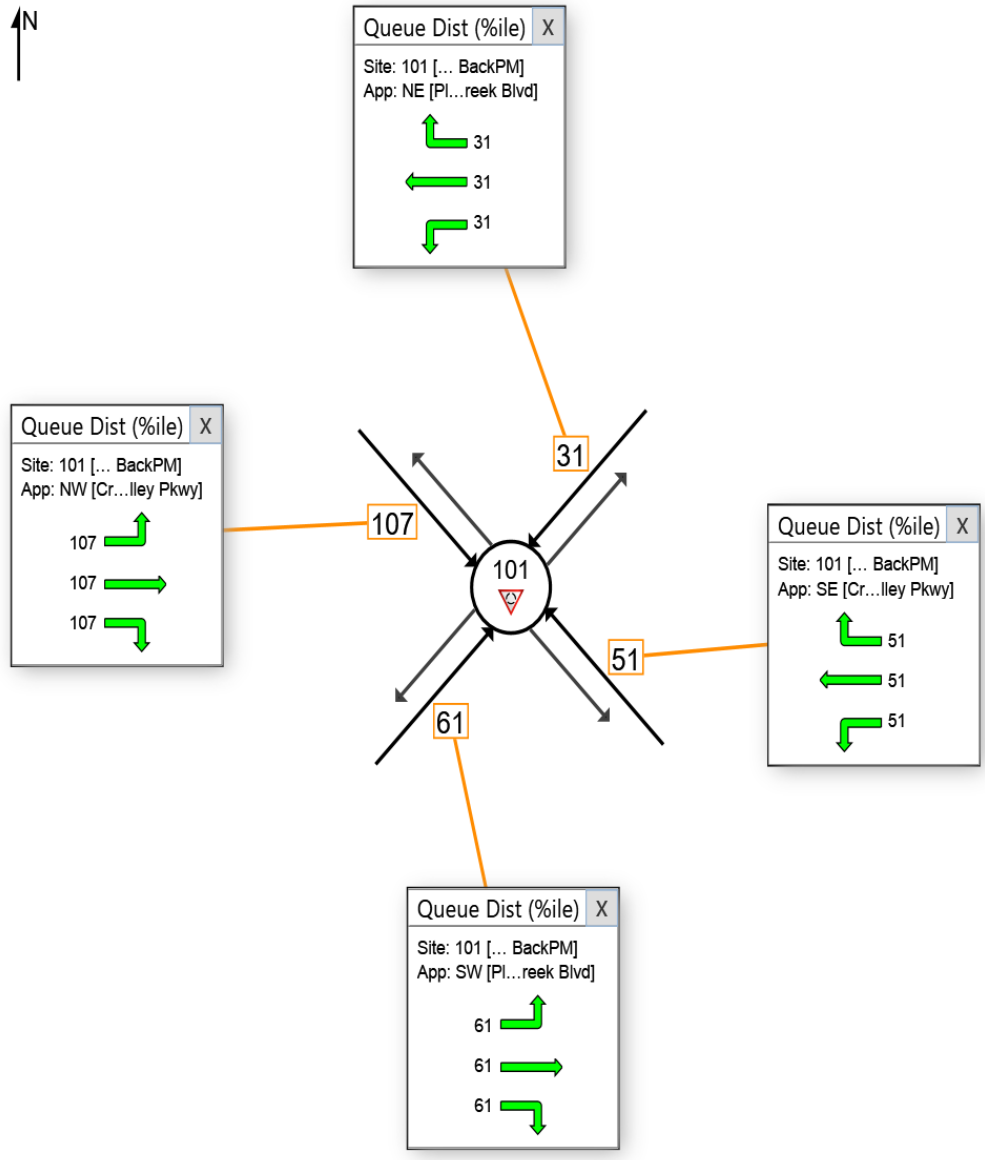
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 101 [Int #5_2030 Back_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

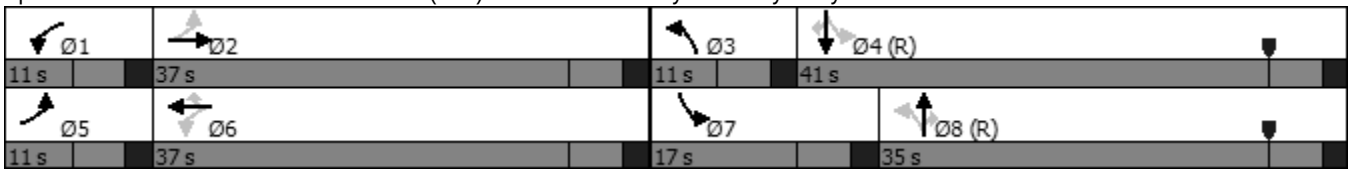
Close All Popups



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	5	5	10	15	65	5	95	35	155	130	10
Future Volume (vph)	5	5	10	15	65	5	95	35	155	130	10
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2	1	6		3	8		7	4	
Permitted Phases	2		6		6	8		8	4		4
Detector Phase	5	2	1	6	6	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.0	33.0	11.0	33.0	33.0	11.0	33.0	33.0	11.0	33.0	33.0
Total Split (s)	11.0	37.0	11.0	37.0	37.0	11.0	35.0	35.0	17.0	41.0	41.0
Total Split (%)	11.0%	37.0%	11.0%	37.0%	37.0%	11.0%	35.0%	35.0%	17.0%	41.0%	41.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	40.8	39.8	40.8	39.8	39.8	35.0	30.0	30.0	46.0	43.8	43.8
Actuated g/C Ratio	0.41	0.40	0.41	0.40	0.40	0.35	0.30	0.30	0.46	0.44	0.44
v/c Ratio	0.01	0.01	0.02	0.02	0.10	0.01	0.18	0.06	0.30	0.18	0.01

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 51 (51%), Referenced to phase 4:SBTL and 8:NBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.30
Intersection Signal Delay: 16.3
Intersection Capacity Utilization 40.3%
Analysis Period (min) 15

Splits and Phases: 7: Dawson Trail Blvd. (new) & Territorial Rd./Crystal Valley Pkwy.





Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	8	8	11	16	71	5	103	38	168	141	11
v/c Ratio	0.01	0.01	0.02	0.02	0.10	0.01	0.18	0.06	0.30	0.18	0.01
Control Delay	17.2	21.0	17.2	20.7	0.3	15.4	27.6	0.2	17.8	19.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.2	21.0	17.2	20.7	0.3	15.4	27.6	0.2	17.8	19.0	0.0
Queue Length 50th (ft)	3	3	4	6	0	2	49	0	62	51	0
Queue Length 95th (ft)	8	10	15	23	0	8	92	0	105	109	0
Internal Link Dist (ft)		1067		1733			1614			1008	
Turn Bay Length (ft)	200		500			500		1000	500		500
Base Capacity (vph)	598	741	589	741	728	460	558	589	558	792	766
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.01	0.02	0.02	0.10	0.01	0.18	0.06	0.30	0.18	0.01

Intersection Summary

Twin Mesa Metropolitan District New Service Plan
SV2023-003
Planning Commission Supplemental Memo Page 403 of 1222

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	5	0	10	15	65	5	95	35	155	130	10
Future Volume (veh/h)	5	5	0	10	15	65	5	95	35	155	130	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900	1870	1870	1870	1870	1870	1870	1870	1826	1826
Adj Flow Rate, veh/h	8	8	0	11	16	71	5	103	38	168	141	11
Peak Hour Factor	0.60	0.60	0.60	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	0	2	2	2	2	2	2	2	5	5
Cap, veh/h	499	580	0	528	586	496	528	673	570	612	786	666
Arrive On Green	0.01	0.31	0.00	0.01	0.31	0.31	0.01	0.36	0.36	0.08	0.43	0.43
Sat Flow, veh/h	1810	1870	0	1781	1870	1585	1781	1870	1585	1781	1826	1547
Grp Volume(v), veh/h	8	8	0	11	16	71	5	103	38	168	141	11
Grp Sat Flow(s),veh/h/ln	1810	1870	0	1781	1870	1585	1781	1870	1585	1781	1826	1547
Q Serve(g_s), s	0.3	0.3	0.0	0.4	0.6	3.2	0.2	3.7	1.6	5.7	4.8	0.4
Cycle Q Clear(g_c), s	0.3	0.3	0.0	0.4	0.6	3.2	0.2	3.7	1.6	5.7	4.8	0.4
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	499	580	0	528	586	496	528	673	570	612	786	666
V/C Ratio(X)	0.02	0.01	0.00	0.02	0.03	0.14	0.01	0.15	0.07	0.27	0.18	0.02
Avail Cap(c_a), veh/h	571	580	0	593	586	496	605	673	570	670	786	666
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.84	0.84	0.84	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.2	23.9	0.0	23.0	23.8	24.7	20.1	21.7	21.0	16.5	17.6	16.3
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.1	0.5	0.0	0.5	0.2	0.2	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.1	0.0	0.2	0.3	1.3	0.1	1.7	0.6	2.3	2.1	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.2	24.0	0.0	23.1	23.9	25.2	20.2	22.2	21.2	16.7	18.1	16.4
LnGrp LOS	C	C	A	C	C	C	C	C	C	B	B	B
Approach Vol, veh/h		16			98			146			320	
Approach Delay, s/veh		23.6			24.7			21.9			17.3	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.3	37.0	6.6	49.0	7.0	37.3	13.7	42.0
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	5.0	31.0	5.0	35.0	5.0	31.0	11.0	29.0
Max Q Clear Time (g_c+I1), s	2.4	2.3	2.2	6.8	2.3	5.2	7.7	5.7
Green Ext Time (p_c), s	0.0	0.0	0.0	0.8	0.0	0.3	0.1	0.6

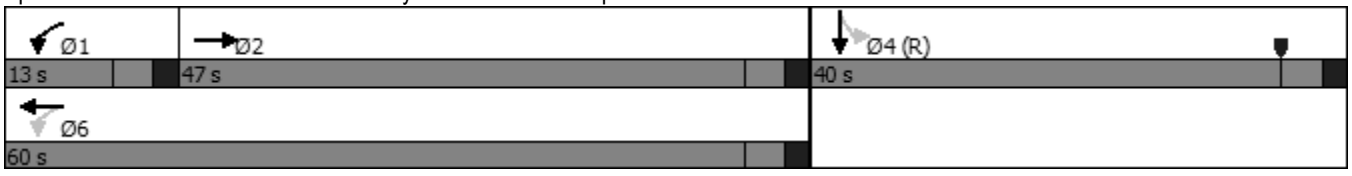
Intersection Summary	
HCM 6th Ctrl Delay	19.9
HCM 6th LOS	B

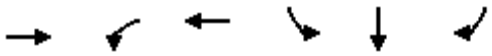
Twin Mesa Metropolitan District New Service Plan
SV2023-003
Planning Commission Supplemental Memo Page 404 of 1222

Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	875	135	689	1040	5	456
Future Volume (vph)	875	135	689	1040	5	456
Turn Type	NA	pm+pt	NA	Perm	NA	Free
Protected Phases	2	1	6		4	
Permitted Phases		6		4		Free
Detector Phase	2	1	6	4	4	
Switch Phase						
Minimum Initial (s)	10.0	5.0	10.0	5.0	5.0	
Minimum Split (s)	30.0	10.0	30.0	10.0	10.0	
Total Split (s)	47.0	13.0	60.0	40.0	40.0	
Total Split (%)	47.0%	13.0%	60.0%	40.0%	40.0%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes				
Recall Mode	Max	None	Max	C-Max	C-Max	
Act Effct Green (s)	43.3	56.0	56.0	36.0	36.0	100.0
Actuated g/C Ratio	0.43	0.56	0.56	0.36	0.36	1.00
v/c Ratio	0.54	0.50	0.36	0.63	0.62	0.30

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 4:SBTL, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.63
Intersection Signal Delay: 16.0
Intersection Capacity Utilization 88.0%
Analysis Period (min) 15

Splits and Phases: 8: Plum Creek Pkwy & I-25 SB Off-Ramp





Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1171	141	718	726	362	475
v/c Ratio	0.54	0.50	0.36	0.63	0.62	0.30
Control Delay	7.9	24.3	13.5	29.4	32.1	0.5
Queue Delay	0.0	1.8	2.6	0.0	0.0	0.0
Total Delay	7.9	26.1	16.1	29.4	32.1	0.5
Queue Length 50th (ft)	42	54	120	207	206	0
Queue Length 95th (ft)	78	m115	185	273	316	0
Internal Link Dist (ft)	437		181		388	
Turn Bay Length (ft)						160
Base Capacity (vph)	2178	284	1981	1159	581	1583
Starvation Cap Reductn	0	54	1109	0	0	0
Spillback Cap Reductn	26	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.61	0.82	0.63	0.62	0.30

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	875	250	135	689	0	0	0	0	1040	5	456
Future Volume (vph)	0	875	250	135	689	0	0	0	0	1040	5	456
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.91		1.00	0.95					0.91	0.91	1.00
Frt		0.97		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		4916		1770	3539					3221	1615	1583
Flt Permitted		1.00		0.14	1.00					0.95	0.95	1.00
Satd. Flow (perm)		4916		267	3539					3221	1615	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	911	260	141	718	0	0	0	0	1083	5	475
RTOR Reduction (vph)	0	51	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1120	0	141	718	0	0	0	0	726	362	475
Turn Type		NA		pm+pt	NA					Perm	NA	Free
Protected Phases		2		1	6						4	
Permitted Phases				6						4		Free
Actuated Green, G (s)		42.3		55.0	55.0					35.0	35.0	100.0
Effective Green, g (s)		43.3		56.0	56.0					36.0	36.0	100.0
Actuated g/C Ratio		0.43		0.56	0.56					0.36	0.36	1.00
Clearance Time (s)		5.0		5.0	5.0					5.0	5.0	
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		2128		280	1981					1159	581	1583
v/s Ratio Prot		0.23		c0.04	0.20							
v/s Ratio Perm				c0.24						c0.23	0.22	0.30
v/c Ratio		0.53		0.50	0.36					0.63	0.62	0.30
Uniform Delay, d1		20.8		12.9	12.1					26.4	26.4	0.0
Progression Factor		0.36		1.77	1.06					1.00	1.00	1.00
Incremental Delay, d2		0.9		1.2	0.4					2.6	5.0	0.5
Delay (s)		8.4		24.0	13.3					29.0	31.4	0.5
Level of Service		A		C	B					C	C	A
Approach Delay (s)		8.4			15.1			0.0			20.9	
Approach LOS		A			B			A			C	

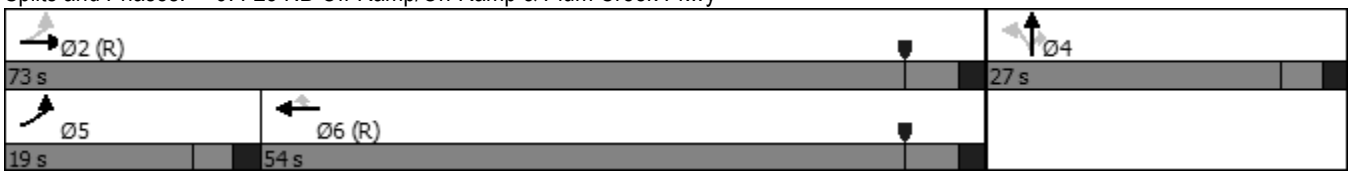
Intersection Summary			
HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	88.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	307	1608	684	850	181	5	185
Future Volume (vph)	307	1608	684	850	181	5	185
Turn Type	pm+pt	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6			4	
Permitted Phases	2			6	4		4
Detector Phase	5	2	6	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0	5.0
Minimum Split (s)	10.0	31.0	24.0	24.0	40.0	40.0	40.0
Total Split (s)	19.0	73.0	54.0	54.0	27.0	27.0	27.0
Total Split (%)	19.0%	73.0%	54.0%	54.0%	27.0%	27.0%	27.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-2.0	-2.0	-2.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max
Act Effct Green (s)	69.0	69.0	51.4	51.4	23.0	23.0	23.0
Actuated g/C Ratio	0.69	0.69	0.51	0.51	0.23	0.23	0.23
v/c Ratio	0.79	0.47	0.62	0.52	0.34	0.33	0.29

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 83 (83%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 12.9
Intersection Capacity Utilization 88.0%
Analysis Period (min) 15

Splits and Phases: 9: I-25 NB Off-Ramp/On-Ramp & Plum Creek Pkwy





Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	313	1641	1053	512	131	127	121
v/c Ratio	0.79	0.47	0.62	0.52	0.34	0.33	0.29
Control Delay	32.3	6.2	17.3	3.4	35.1	23.4	13.4
Queue Delay	1.0	0.3	0.0	0.0	0.3	0.2	0.0
Total Delay	33.3	6.5	17.3	3.4	35.4	23.7	13.4
Queue Length 50th (ft)	99	89	230	0	73	47	17
Queue Length 95th (ft)	#199	138	302	56	131	104	68
Internal Link Dist (ft)		181	431			480	
Turn Bay Length (ft)					350		150
Base Capacity (vph)	416	3508	1709	989	386	385	412
Starvation Cap Reductn	19	1077	0	0	0	0	0
Spillback Cap Reductn	0	0	3	0	45	41	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.68	0.62	0.52	0.38	0.37	0.29

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	307	1608	0	0	684	850	181	5	185	0	0	0
Future Volume (veh/h)	307	1608	0	0	684	850	181	5	185	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	313	1641	0	0	694	869	246	0	127			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	358	3523	0	0	1003	1699	819	0	365			
Arrive On Green	0.23	1.00	0.00	0.00	0.54	0.54	0.23	0.00	0.23			
Sat Flow, veh/h	1781	5274	0	0	1870	3170	3563	0	1585			
Grp Volume(v), veh/h	313	1641	0	0	694	869	246	0	127			
Grp Sat Flow(s),veh/h/ln	1781	1702	0	0	1870	1585	1781	0	1585			
Q Serve(g_s), s	8.0	0.0	0.0	0.0	27.4	17.5	5.7	0.0	6.7			
Cycle Q Clear(g_c), s	8.0	0.0	0.0	0.0	27.4	17.5	5.7	0.0	6.7			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	358	3523	0	0	1003	1699	819	0	365			
V/C Ratio(X)	0.87	0.47	0.00	0.00	0.69	0.51	0.30	0.00	0.35			
Avail Cap(c_a), veh/h	422	3523	0	0	1003	1699	819	0	365			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.80	0.80	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	15.9	0.0	0.0	0.0	17.1	14.8	31.8	0.0	32.2			
Incr Delay (d2), s/veh	13.4	0.4	0.0	0.0	3.9	1.1	0.9	0.0	2.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	4.7	0.1	0.0	0.0	12.1	6.2	2.5	0.0	6.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.3	0.4	0.0	0.0	21.0	15.9	32.8	0.0	34.8			
LnGrp LOS	C	A	A	A	C	B	C	A	C			
Approach Vol, veh/h		1954			1563			373				
Approach Delay, s/veh		5.0			18.2			33.5				
Approach LOS		A			B			C				

Timer - Assigned Phs		2		4	5	6			
Phs Duration (G+Y+Rc), s		73.0		27.0	15.4	57.6			
Change Period (Y+Rc), s		6.0		5.0	5.0	6.0			
Max Green Setting (Gmax), s		67.0		22.0	14.0	48.0			
Max Q Clear Time (g_c+I1), s		2.0		8.7	10.0	29.4			
Green Ext Time (p_c), s		21.0		1.1	0.4	8.8			

Intersection Summary		
HCM 6th Ctrl Delay	13.0	
HCM 6th LOS	B	

Notes

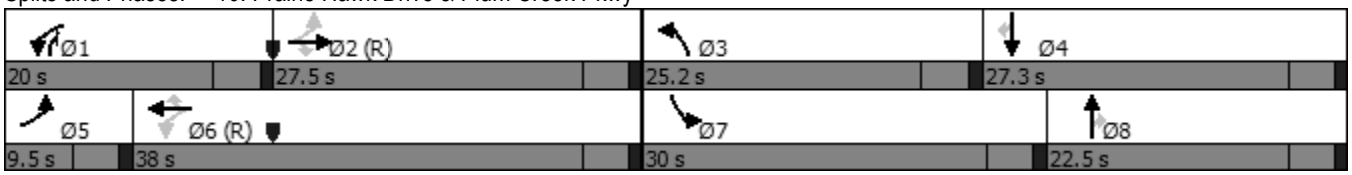
User approved pedestrian interval to be less than phase max green.

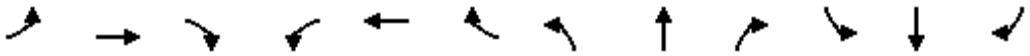
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	551	135	255	874	93	93	75	97	260	135	38
Future Volume (vph)	32	551	135	255	874	93	93	75	97	260	135	38
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases	2		2	6		6			8			4
Detector Phase	5	2	2	1	6	6	3	8	1	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	9.5	9.5	22.5	22.5
Total Split (s)	9.5	27.5	27.5	20.0	38.0	38.0	25.2	22.5	20.0	30.0	27.3	27.3
Total Split (%)	9.5%	27.5%	27.5%	20.0%	38.0%	38.0%	25.2%	22.5%	20.0%	30.0%	27.3%	27.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	Max	Max
Act Effct Green (s)	30.1	24.6	24.6	43.5	37.8	37.8	11.5	24.9	41.7	21.7	35.2	35.2
Actuated g/C Ratio	0.30	0.25	0.25	0.44	0.38	0.38	0.12	0.25	0.42	0.22	0.35	0.35
v/c Ratio	0.19	0.69	0.27	0.78	0.71	0.14	0.50	0.09	0.14	0.38	0.12	0.06

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 33.6
Intersection Capacity Utilization 54.3%
Analysis Period (min) 15

Splits and Phases: 10: Prairie Hawk Drive & Plum Creek Pkwy





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	35	599	147	277	950	101	101	82	105	283	147	41
v/c Ratio	0.19	0.69	0.27	0.78	0.71	0.14	0.50	0.09	0.14	0.38	0.12	0.06
Control Delay	20.2	39.3	2.3	41.9	39.6	6.4	49.1	26.9	2.9	38.3	24.3	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.2	39.3	2.3	41.9	39.6	6.4	49.1	26.9	2.9	38.3	24.3	0.2
Queue Length 50th (ft)	13	185	0	156	323	4	61	19	0	88	34	0
Queue Length 95th (ft)	31	248	14	#255	394	29	109	39	24	125	61	0
Internal Link Dist (ft)		710			922			624			1039	
Turn Bay Length (ft)	230		230	230		230	230		230	230		250
Base Capacity (vph)	180	871	549	373	1337	700	375	967	743	1047	1246	663
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.69	0.27	0.74	0.71	0.14	0.27	0.08	0.14	0.27	0.12	0.06

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	551	135	255	874	93	93	75	97	260	135	38
Future Volume (veh/h)	32	551	135	255	874	93	93	75	97	260	135	38
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	35	599	147	277	950	0	101	82	105	283	147	41
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	318	1485	662	485	1753		138	704	491	389	828	369
Arrive On Green	0.04	0.42	0.42	0.11	0.49	0.00	0.08	0.20	0.20	0.11	0.23	0.23
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	35	599	147	277	950	0	101	82	105	283	147	41
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1777	1585	1728	1777	1585
Q Serve(g_s), s	1.1	11.8	5.9	8.3	18.5	0.0	5.5	1.9	4.9	7.9	3.3	2.0
Cycle Q Clear(g_c), s	1.1	11.8	5.9	8.3	18.5	0.0	5.5	1.9	4.9	7.9	3.3	2.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	318	1485	662	485	1753		138	704	491	389	828	369
V/C Ratio(X)	0.11	0.40	0.22	0.57	0.54		0.73	0.12	0.21	0.73	0.18	0.11
Avail Cap(c_a), veh/h	352	1485	662	571	1753		378	704	491	898	828	369
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.8	20.4	18.7	13.6	17.5	0.0	45.1	32.9	25.5	42.9	30.7	30.2
Incr Delay (d2), s/veh	0.2	0.8	0.8	1.1	1.2	0.0	7.2	0.1	0.2	2.6	0.5	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	4.7	2.3	3.1	7.1	0.0	2.7	0.8	1.8	3.5	1.4	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.0	21.2	19.4	14.6	18.7	0.0	52.4	33.0	25.7	45.5	31.2	30.8
LnGrp LOS	B	C	B	B	B		D	C	C	D	C	C
Approach Vol, veh/h		781			1227	A		288			471	
Approach Delay, s/veh		20.6			17.8			37.1			39.8	
Approach LOS		C			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.2	45.8	11.8	27.3	7.6	53.3	15.2	23.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	15.5	23.0	20.7	22.8	5.0	33.5	25.5	18.0
Max Q Clear Time (g_c+I1), s	10.3	13.8	7.5	5.3	3.1	20.5	9.9	6.9
Green Ext Time (p_c), s	0.4	2.8	0.2	0.8	0.0	5.0	0.8	0.5

Intersection Summary	
HCM 6th Ctrl Delay	24.3
HCM 6th LOS	C

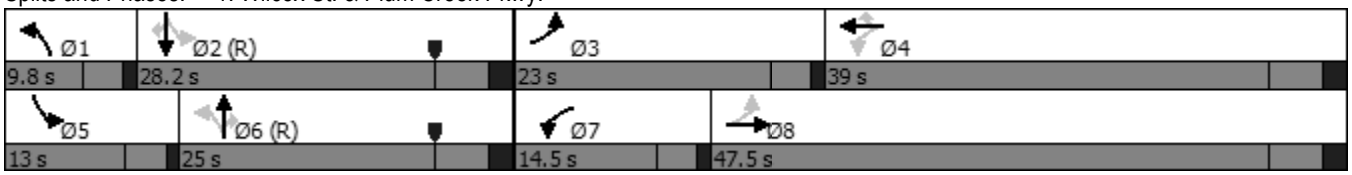
Notes

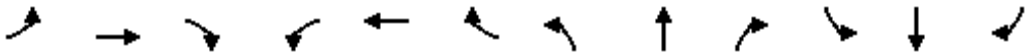
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	260	1075	295	75	870	165	250	160	70	165	205	240
Future Volume (vph)	260	1075	295	75	870	165	250	160	70	165	205	240
Turn Type	pm+pt	NA	Free	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		Free	4		4	6		6	2		2
Detector Phase	3	8		7	4	4	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	5.0	10.0	10.0	5.0	4.0	4.0
Minimum Split (s)	9.5	31.0		14.5	31.0	31.0	9.5	16.0	16.0	9.5	10.0	10.0
Total Split (s)	23.0	47.5		14.5	39.0	39.0	9.8	25.0	25.0	13.0	28.2	28.2
Total Split (%)	23.0%	47.5%		14.5%	39.0%	39.0%	9.8%	25.0%	25.0%	13.0%	28.2%	28.2%
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	2.0		1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	53.2	40.4	100.0	45.0	33.0	33.0	32.3	23.6	23.6	36.5	25.7	25.7
Actuated g/C Ratio	0.53	0.40	1.00	0.45	0.33	0.33	0.32	0.24	0.24	0.36	0.26	0.26
v/c Ratio	0.80	0.79	0.20	0.31	0.80	0.28	0.37	0.40	0.16	0.42	0.47	0.43

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 29.6
Intersection Capacity Utilization 89.3%
Analysis Period (min) 15

Splits and Phases: 1: Wilcox St. & Plum Creek Pkwy.





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	274	1132	311	82	946	179	272	174	76	179	223	261
v/c Ratio	0.80	0.79	0.20	0.31	0.80	0.28	0.37	0.40	0.16	0.42	0.47	0.43
Control Delay	38.0	31.0	0.3	19.0	46.5	14.1	24.7	37.8	0.7	26.3	36.8	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.0	31.0	0.3	19.0	46.5	14.1	24.7	37.8	0.7	26.3	36.8	6.7
Queue Length 50th (ft)	104	326	0	32	334	26	61	100	0	81	126	0
Queue Length 95th (ft)	187	399	0	m58	405	m94	95	168	0	139	202	63
Internal Link Dist (ft)		553			473			812			658	
Turn Bay Length (ft)	280		250	185			190		195	130		130
Base Capacity (vph)	411	1475	1583	269	1225	654	733	436	490	441	479	601
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.77	0.20	0.30	0.77	0.27	0.37	0.40	0.16	0.41	0.47	0.43

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	260	1075	295	75	870	165	250	160	70	165	205	240
Future Volume (veh/h)	260	1075	295	75	870	165	250	160	70	165	205	240
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1885	1885	1885	1856	1856	1856	1870	1870	1870
Adj Flow Rate, veh/h	274	1132	0	82	946	179	272	174	76	179	223	261
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	1	1	1	3	3	3	2	2	2
Cap, veh/h	324	1310		270	1218	542	670	467	395	429	530	449
Arrive On Green	0.12	0.37	0.00	0.03	0.11	0.11	0.06	0.25	0.25	0.09	0.28	0.28
Sat Flow, veh/h	1781	3554	1585	1795	3582	1595	3428	1856	1569	1781	1870	1582
Grp Volume(v), veh/h	274	1132	0	82	946	179	272	174	76	179	223	261
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1795	1791	1595	1714	1856	1569	1781	1870	1582
Q Serve(g_s), s	9.7	29.5	0.0	2.8	25.7	10.3	5.8	7.7	3.8	7.2	9.7	14.2
Cycle Q Clear(g_c), s	9.7	29.5	0.0	2.8	25.7	10.3	5.8	7.7	3.8	7.2	9.7	14.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	324	1310		270	1218	542	670	467	395	429	530	449
V/C Ratio(X)	0.84	0.86		0.30	0.78	0.33	0.41	0.37	0.19	0.42	0.42	0.58
Avail Cap(c_a), veh/h	452	1475		297	1218	542	670	467	395	429	530	449
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.80	0.80	0.80	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.2	29.2	0.0	22.8	40.7	33.9	26.3	30.9	29.4	23.7	29.1	30.7
Incr Delay (d2), s/veh	7.5	5.1	0.0	0.2	2.6	0.3	0.1	2.3	1.1	0.2	2.4	5.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	12.9	0.0	1.2	12.7	4.4	2.4	3.8	1.5	3.1	4.7	5.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.7	34.4	0.0	23.0	43.3	34.2	26.4	33.2	30.5	23.9	31.6	36.2
LnGrp LOS	C	C		C	D	C	C	C	C	C	C	D
Approach Vol, veh/h		1406	A		1207			522			663	
Approach Delay, s/veh		33.5			40.6			29.3			31.3	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.8	34.4	15.8	40.0	13.0	31.2	13.0	42.9
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	5.8	22.2	19.0	33.0	9.0	19.0	10.5	41.5
Max Q Clear Time (g_c+I1), s	7.8	16.2	11.7	27.7	9.2	9.7	4.8	31.5
Green Ext Time (p_c), s	0.0	1.7	0.2	3.1	0.0	1.1	0.0	5.4

Intersection Summary	
HCM 6th Ctrl Delay	34.8
HCM 6th LOS	C

Notes

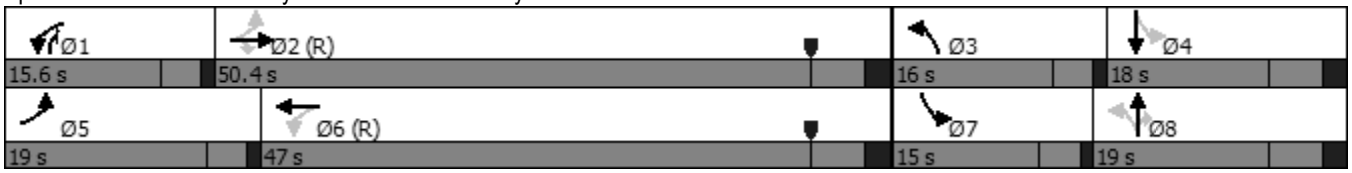
User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	230	945	155	155	780	205	120	150	195	125	200
Future Volume (vph)	230	945	155	155	780	205	120	150	195	125	200
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	pm+ov	pm+pt	NA	Free
Protected Phases	5	2		1	6	3	8	1	7	4	
Permitted Phases	2		2	6		8		8	4		Free
Detector Phase	5	2	2	1	6	3	8	1	7	4	
Switch Phase											
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0	3.0	5.0	3.0	3.0	5.0	
Minimum Split (s)	9.5	32.0	32.0	9.5	32.0	9.5	11.0	9.5	9.5	11.0	
Total Split (s)	19.0	50.4	50.4	15.6	47.0	16.0	19.0	15.6	15.0	18.0	
Total Split (%)	19.0%	50.4%	50.4%	15.6%	47.0%	16.0%	19.0%	15.6%	15.0%	18.0%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.0	3.0	3.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	1.0	2.0	1.0	1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	4.0	4.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None	None	
Act Effct Green (s)	62.6	50.2	50.2	57.4	47.5	24.9	11.5	21.4	23.0	10.6	100.0
Actuated g/C Ratio	0.63	0.50	0.50	0.57	0.48	0.25	0.12	0.21	0.23	0.11	1.00
v/c Ratio	0.68	0.54	0.19	0.48	0.64	0.65	0.60	0.38	0.59	0.66	0.13

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 21.1
Intersection Capacity Utilization 76.2%
Analysis Period (min) 15

Splits and Phases: 2: Perry St. & Plum Creek Pkwy.





Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	235	964	158	168	1065	223	130	163	207	133	213
v/c Ratio	0.68	0.54	0.19	0.48	0.64	0.65	0.60	0.38	0.59	0.66	0.13
Control Delay	14.4	16.8	5.8	15.5	19.4	39.1	53.8	13.2	36.9	58.9	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.4	16.8	5.8	15.5	19.4	39.1	53.8	13.2	36.9	58.9	0.2
Queue Length 50th (ft)	27	300	37	35	187	114	79	26	104	82	0
Queue Length 95th (ft)	m37	365	m54	93	276	182	139	75	169	143	0
Internal Link Dist (ft)		473			1330		455			497	
Turn Bay Length (ft)	170		70	100		185		65	120		120
Base Capacity (vph)	414	1792	842	418	1657	354	244	480	359	228	1615
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.54	0.19	0.40	0.64	0.63	0.53	0.34	0.58	0.58	0.13

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	230	945	155	155	780	200	205	120	150	195	125	200
Future Volume (veh/h)	230	945	155	155	780	200	205	120	150	195	125	200
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	235	964	158	168	848	217	223	130	163	207	133	0
Peak Hour Factor	0.98	0.98	0.98	0.92	0.92	0.92	0.92	0.92	0.92	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	0	0	0
Cap, veh/h	477	1813	807	380	1375	352	337	219	292	327	202	
Arrive On Green	0.12	0.67	0.67	0.14	0.97	0.97	0.12	0.12	0.12	0.11	0.11	0.00
Sat Flow, veh/h	1795	3582	1594	1795	2822	722	1795	1885	1585	1810	1900	1610
Grp Volume(v), veh/h	235	964	158	168	538	527	223	130	163	207	133	0
Grp Sat Flow(s),veh/h/ln	1795	1791	1594	1795	1791	1753	1795	1885	1585	1810	1900	1610
Q Serve(g_s), s	6.5	13.7	3.7	4.8	1.9	1.9	11.0	6.5	9.4	10.1	6.7	0.0
Cycle Q Clear(g_c), s	6.5	13.7	3.7	4.8	1.9	1.9	11.0	6.5	9.4	10.1	6.7	0.0
Prop In Lane	1.00		1.00	1.00		0.41	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	477	1813	807	380	872	854	337	219	292	327	202	
V/C Ratio(X)	0.49	0.53	0.20	0.44	0.62	0.62	0.66	0.59	0.56	0.63	0.66	
Avail Cap(c_a), veh/h	591	1813	807	467	872	854	337	245	314	327	228	
HCM Platoon Ratio	1.33	1.33	1.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.64	0.64	0.64	0.82	0.82	0.82	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	10.2	10.3	8.7	11.1	0.7	0.7	34.4	41.9	37.1	34.9	42.9	0.0
Incr Delay (d2), s/veh	0.2	0.7	0.3	0.2	2.7	2.7	3.9	2.5	1.5	3.0	5.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	4.3	1.3	1.6	1.0	1.0	5.0	3.1	3.7	4.6	3.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.4	11.0	9.0	11.4	3.4	3.4	38.3	44.4	38.6	37.9	47.9	0.0
LnGrp LOS	B	B	A	B	A	A	D	D	D	D	D	
Approach Vol, veh/h		1357			1233			516			340	A
Approach Delay, s/veh		10.7			4.5			39.9			41.8	
Approach LOS		B			A			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.8	56.6	16.0	16.6	12.6	54.7	15.0	17.6
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	11.6	44.4	12.0	12.0	15.0	41.0	11.0	13.0
Max Q Clear Time (g_c+I1), s	6.8	15.7	13.0	8.7	8.5	3.9	12.1	11.4
Green Ext Time (p_c), s	0.1	8.3	0.0	0.1	0.1	8.5	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	15.9
HCM 6th LOS	B

Notes

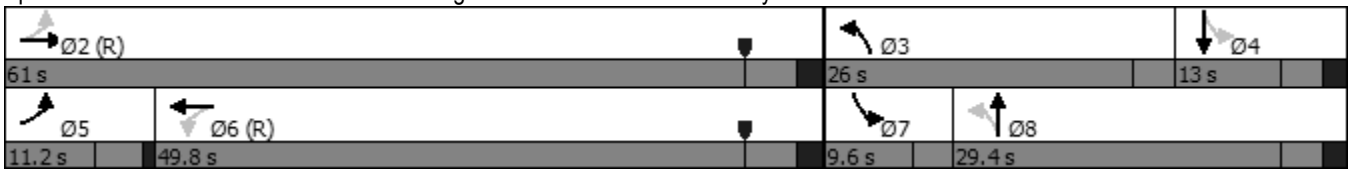
User approved pedestrian interval to be less than phase max green.

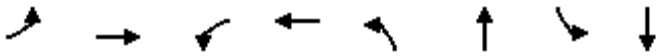
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	95	890	40	800	290	0	5	5
Future Volume (vph)	95	890	40	800	290	0	5	5
Turn Type	pm+pt	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases	5	2		6	3	8	7	4
Permitted Phases	2		6		8		4	
Detector Phase	5	2	6	6	3	8	7	4
Switch Phase								
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0	3.0	2.0
Minimum Split (s)	9.5	33.0	28.0	28.0	14.5	10.0	9.5	7.0
Total Split (s)	11.2	61.0	49.8	49.8	26.0	29.4	9.6	13.0
Total Split (%)	11.2%	61.0%	49.8%	49.8%	26.0%	29.4%	9.6%	13.0%
Yellow Time (s)	3.5	4.0	4.0	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	6.0	6.0	3.0	5.0	3.0	5.0
Lead/Lag	Lead		Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	C-Max	None	Max	None	Max
Act Effct Green (s)	56.5	55.0	46.0	46.0	36.0	32.4	19.9	13.2
Actuated g/C Ratio	0.56	0.55	0.46	0.46	0.36	0.32	0.20	0.13
v/c Ratio	0.34	0.69	0.35	0.53	0.60	0.07	0.02	0.19

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 18.2
Intersection Capacity Utilization 79.7%
Analysis Period (min) 15

Splits and Phases: 3: Plum Creek Blvd./Fairgrounds Rd. & Plum Creek Pkwy.





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	104	1313	43	875	315	43	5	48
v/c Ratio	0.34	0.69	0.35	0.53	0.60	0.07	0.02	0.19
Control Delay	12.4	13.8	29.1	21.4	30.4	0.2	22.8	17.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.4	13.8	29.1	21.4	30.4	0.2	22.8	17.4
Queue Length 50th (ft)	19	181	18	212	154	0	2	3
Queue Length 95th (ft)	m56	313	53	272	236	0	10	38
Internal Link Dist (ft)		1330		637		613		434
Turn Bay Length (ft)	70		55				110	
Base Capacity (vph)	305	1912	123	1644	559	653	329	254
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.69	0.35	0.53	0.56	0.07	0.02	0.19

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	890	305	40	800	5	290	0	40	5	5	40
Future Volume (veh/h)	95	890	305	40	800	5	290	0	40	5	5	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	104	978	335	43	870	5	315	0	43	5	5	43
Peak Hour Factor	0.91	0.91	0.91	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	0	0	0
Cap, veh/h	386	1582	538	288	1867	11	460	0	403	189	14	117
Arrive On Green	0.09	1.00	1.00	0.51	0.51	0.51	0.18	0.00	0.25	0.00	0.08	0.08
Sat Flow, veh/h	1795	2621	891	422	3651	21	1795	0	1596	1810	170	1461
Grp Volume(v), veh/h	104	666	647	43	427	448	315	0	43	5	0	48
Grp Sat Flow(s),veh/h/ln	1795	1791	1721	422	1791	1881	1795	0	1596	1810	0	1631
Q Serve(g_s), s	2.6	0.0	0.0	5.6	15.3	15.3	15.4	0.0	2.1	0.3	0.0	2.8
Cycle Q Clear(g_c), s	2.6	0.0	0.0	5.6	15.3	15.3	15.4	0.0	2.1	0.3	0.0	2.8
Prop In Lane	1.00		0.52	1.00		0.01	1.00		1.00	1.00		0.90
Lane Grp Cap(c), veh/h	386	1081	1039	288	916	962	460	0	403	189	0	130
V/C Ratio(X)	0.27	0.62	0.62	0.15	0.47	0.47	0.68	0.00	0.11	0.03	0.00	0.37
Avail Cap(c_a), veh/h	421	1081	1039	288	916	962	556	0	403	302	0	130
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.84	0.84	0.84	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.7	0.0	0.0	13.3	15.7	15.7	31.9	0.0	28.7	42.1	0.0	43.6
Incr Delay (d2), s/veh	0.3	2.2	2.4	1.1	1.7	1.6	1.7	0.0	0.5	0.0	0.0	7.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.7	0.7	0.6	6.3	6.6	6.8	0.0	0.8	0.1	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.0	2.2	2.4	14.4	17.4	17.3	33.6	0.0	29.2	42.1	0.0	51.4
LnGrp LOS	B	A	A	B	B	B	C	A	C	D	A	D
Approach Vol, veh/h		1417			918			358			53	
Approach Delay, s/veh		2.9			17.2			33.1			50.5	
Approach LOS		A			B			C			D	

Timer - Assigned Phs	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	66.3	20.7	13.0	9.2	57.1	3.4	30.3
Change Period (Y+Rc), s	6.0	3.0	5.0	4.5	6.0	3.0	5.0
Max Green Setting (Gmax), s	55.0	23.0	8.0	6.7	43.8	6.6	24.4
Max Q Clear Time (g_c+I1), s	2.0	17.4	4.8	4.6	17.3	2.3	4.1
Green Ext Time (p_c), s	12.8	0.3	0.0	0.0	6.6	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	12.5
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

DELAY (CONTROL)

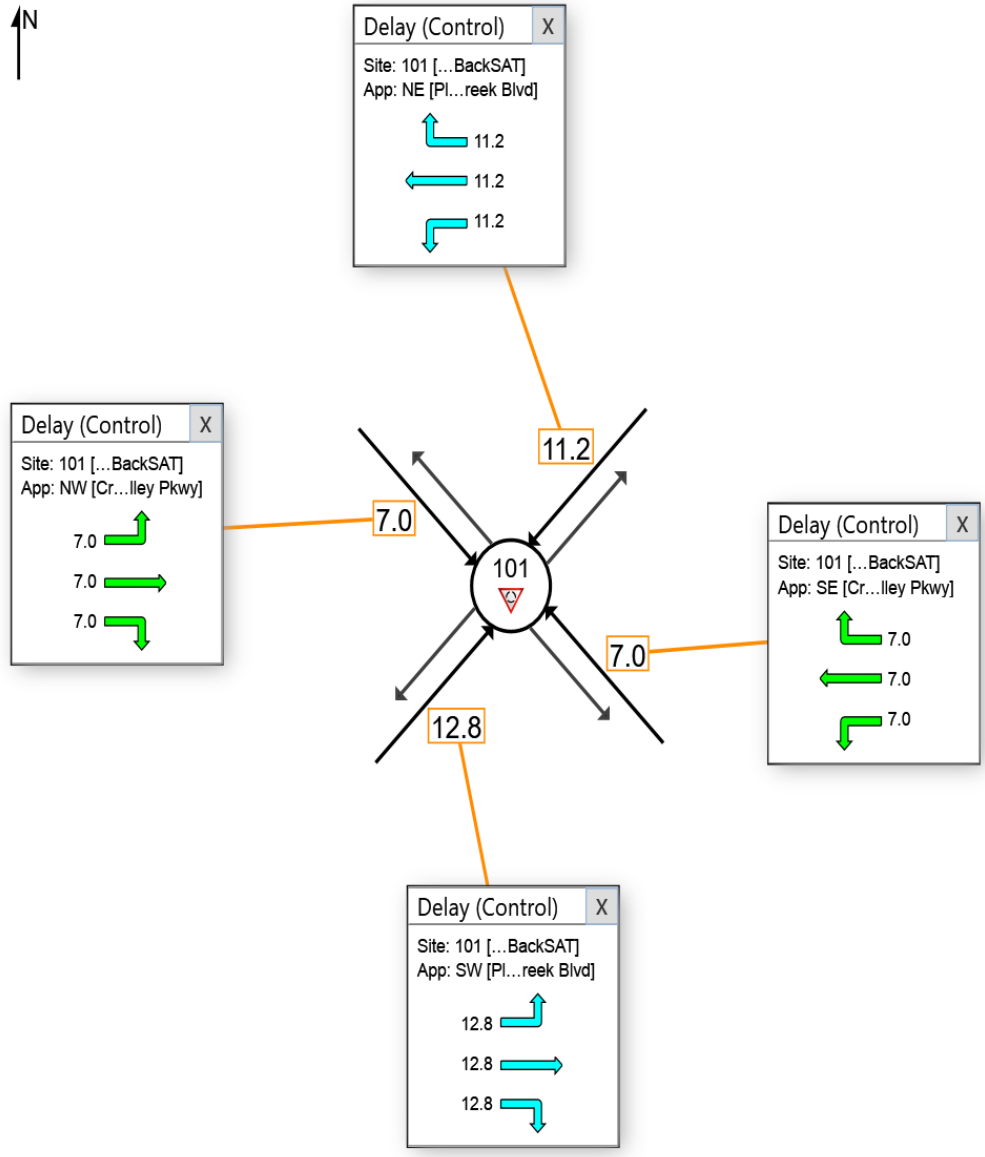
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 101 [Int #5_2030 Back_SAT (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

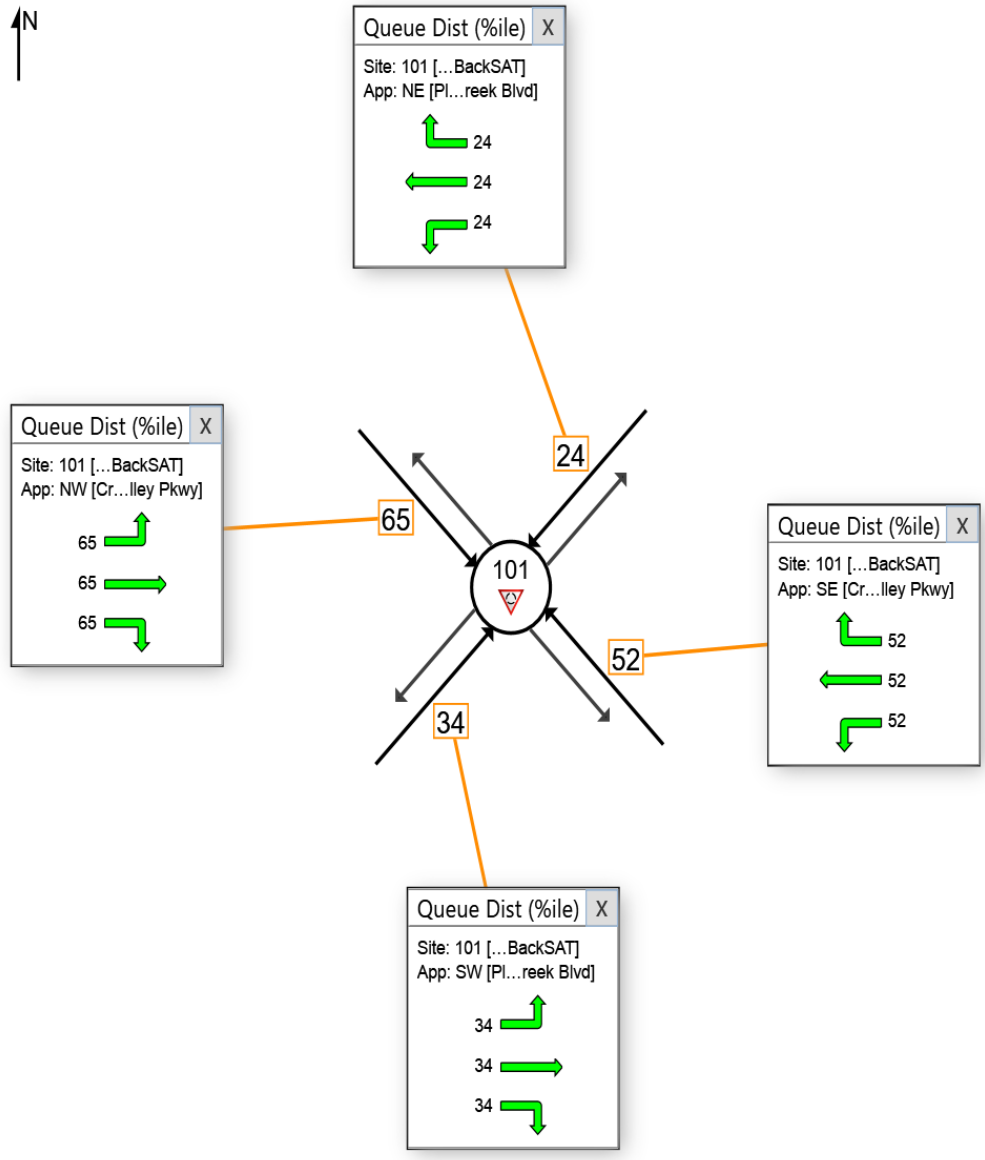
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 101 [Int #5_2030 Back_SAT (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

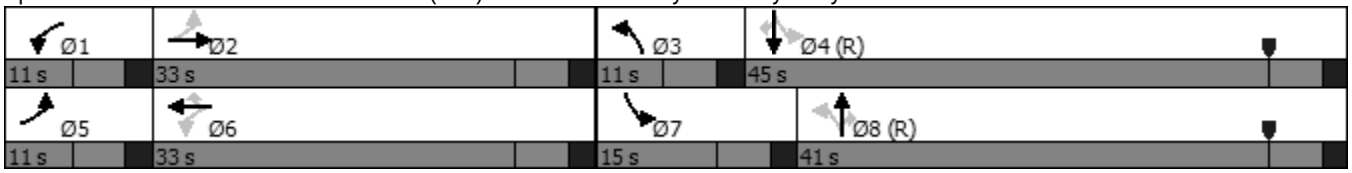
Close All Popups



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	5	5	10	15	60	1	130	50	205	465	10
Future Volume (vph)	5	5	10	15	60	1	130	50	205	465	10
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2	1	6		3	8		7	4	
Permitted Phases	2		6		6	8		8	4		4
Detector Phase	5	2	1	6	6	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.0	33.0	11.0	33.0	33.0	11.0	33.0	33.0	11.0	33.0	33.0
Total Split (s)	11.0	33.0	11.0	33.0	33.0	11.0	41.0	41.0	15.0	45.0	45.0
Total Split (%)	11.0%	33.0%	11.0%	33.0%	33.0%	11.0%	41.0%	41.0%	15.0%	45.0%	45.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	Max	Max	None	C-Max	C-Max	Max	C-Max	C-Max
Act Effct Green (s)	36.8	35.8	36.8	35.8	35.8	40.0	35.0	35.0	49.6	47.8	47.8
Actuated g/C Ratio	0.37	0.36	0.37	0.36	0.36	0.40	0.35	0.35	0.50	0.48	0.48
v/c Ratio	0.01	0.02	0.02	0.02	0.10	0.00	0.22	0.08	0.38	0.58	0.01

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 56 (56%), Referenced to phase 4:SBTL and 8:NBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.58
Intersection Signal Delay: 19.0
Intersection Capacity Utilization 52.0%
Analysis Period (min) 15

Splits and Phases: 7: Dawson Trail Blvd. (new) & Territorial Rd./Crystal Valley Pkwy.



Twin Mesa Metropolitan District New Service Plan
SV2023-003
Planning Commission Supplemental Memo Page 425 of 1222



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	7	10	11	16	65	1	141	54	223	505	11
v/c Ratio	0.01	0.02	0.02	0.02	0.10	0.00	0.22	0.08	0.38	0.58	0.01
Control Delay	19.6	20.4	19.7	23.4	0.3	13.0	24.0	0.2	16.7	23.3	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.6	20.4	19.7	23.4	0.3	13.0	24.0	0.2	16.7	23.3	0.0
Queue Length 50th (ft)	3	3	4	6	0	0	63	0	78	214	0
Queue Length 95th (ft)	10	13	16	24	0	3	109	0	125	392	0
Internal Link Dist (ft)		1067		1733			1614			1008	
Turn Bay Length (ft)	200		500			500		1000	500		500
Base Capacity (vph)	541	642	533	666	672	295	652	660	580	865	821
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.02	0.02	0.02	0.10	0.00	0.22	0.08	0.38	0.58	0.01

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	5	2	10	15	60	1	130	50	205	465	10
Future Volume (veh/h)	5	5	2	10	15	60	1	130	50	205	465	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900	1870	1870	1870	1870	1870	1870	1870	1826	1826
Adj Flow Rate, veh/h	7	7	3	11	16	65	1	141	54	223	505	11
Peak Hour Factor	0.75	0.75	0.75	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	0	2	2	2	2	2	2	2	5	5
Cap, veh/h	447	335	144	469	513	435	318	724	613	632	868	736
Arrive On Green	0.01	0.27	0.27	0.01	0.27	0.27	0.00	0.39	0.39	0.09	0.48	0.48
Sat Flow, veh/h	1810	1242	532	1781	1870	1585	1781	1870	1585	1781	1826	1547
Grp Volume(v), veh/h	7	0	10	11	16	65	1	141	54	223	505	11
Grp Sat Flow(s),veh/h/ln	1810	0	1775	1781	1870	1585	1781	1870	1585	1781	1826	1547
Q Serve(g_s), s	0.3	0.0	0.4	0.4	0.6	3.1	0.0	5.0	2.2	7.2	20.1	0.4
Cycle Q Clear(g_c), s	0.3	0.0	0.4	0.4	0.6	3.1	0.0	5.0	2.2	7.2	20.1	0.4
Prop In Lane	1.00		0.30	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	447	0	479	469	513	435	318	724	613	632	868	736
V/C Ratio(X)	0.02	0.00	0.02	0.02	0.03	0.15	0.00	0.19	0.09	0.35	0.58	0.01
Avail Cap(c_a), veh/h	521	0	479	535	513	435	404	724	613	632	868	736
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.84	0.84	0.84	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.1	0.0	26.8	25.9	26.6	27.5	19.4	20.3	19.5	14.8	19.0	13.9
Incr Delay (d2), s/veh	0.0	0.0	0.1	0.0	0.1	0.6	0.0	0.6	0.3	1.5	2.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.2	0.2	0.3	1.2	0.0	2.3	0.8	3.1	8.8	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.1	0.0	26.9	25.9	26.7	28.1	19.4	20.9	19.7	16.3	21.9	13.9
LnGrp LOS	C	A	C	C	C	C	B	C	B	B	C	B
Approach Vol, veh/h		17			92			196			739	
Approach Delay, s/veh		26.6			27.6			20.6			20.1	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.3	33.0	6.1	53.5	6.9	33.4	15.0	44.7
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	5.0	27.0	5.0	39.0	5.0	27.0	9.0	35.0
Max Q Clear Time (g_c+I1), s	2.4	2.4	2.0	22.1	2.3	5.1	9.2	7.0
Green Ext Time (p_c), s	0.0	0.0	0.0	3.1	0.0	0.2	0.0	0.9

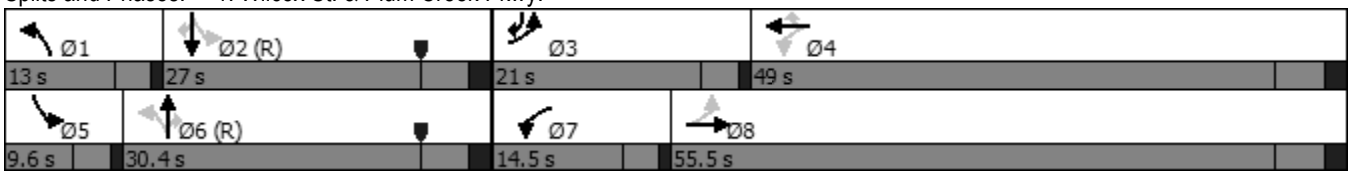
Intersection Summary	
HCM 6th Ctrl Delay	20.9
HCM 6th LOS	C

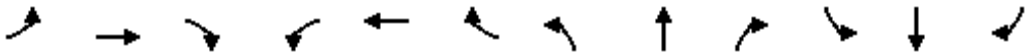
Intersection Capacity Worksheets: 2040 Background

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	215	755	285	120	1095	125	370	220	130	70	165	125
Future Volume (vph)	215	755	285	120	1095	125	370	220	130	70	165	125
Turn Type	pm+pt	NA	Free	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+ov
Protected Phases	3	8		7	4		1	6		5	2	3
Permitted Phases	8		Free	4		4	6		6	2		2
Detector Phase	3	8		7	4	4	1	6	6	5	2	3
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	5.0	10.0	10.0	5.0	4.0	5.0
Minimum Split (s)	9.5	31.0		14.5	31.0	31.0	9.5	16.0	16.0	9.5	10.0	9.5
Total Split (s)	21.0	55.5		14.5	49.0	49.0	13.0	30.4	30.4	9.6	27.0	21.0
Total Split (%)	19.1%	50.5%		13.2%	44.5%	44.5%	11.8%	27.6%	27.6%	8.7%	24.5%	19.1%
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	3.0
All-Red Time (s)	1.0	2.0		1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	None
Act Effct Green (s)	60.9	46.4	110.0	54.5	42.5	42.5	39.3	29.9	29.9	31.7	24.1	44.0
Actuated g/C Ratio	0.55	0.42	1.00	0.50	0.39	0.39	0.36	0.27	0.27	0.29	0.22	0.40
v/c Ratio	0.83	0.57	0.20	0.37	0.87	0.19	0.53	0.48	0.26	0.23	0.45	0.21

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 35 (32%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 25.5
Intersection Capacity Utilization 78.1%
Analysis Period (min) 15

Splits and Phases: 1: Wilcox St. & Plum Creek Pkwy.





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	234	821	310	130	1190	136	402	239	141	76	179	136
v/c Ratio	0.83	0.57	0.20	0.37	0.87	0.19	0.53	0.48	0.26	0.23	0.45	0.21
Control Delay	48.5	25.5	0.3	11.1	27.1	3.3	29.9	39.8	6.5	28.0	43.0	12.1
Queue Delay	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.5	25.5	0.3	11.1	28.2	3.3	29.9	39.8	6.5	28.0	43.0	12.1
Queue Length 50th (ft)	104	213	0	17	112	1	110	152	0	38	115	31
Queue Length 95th (ft)	#195	271	0	m47	223	m20	153	235	46	73	187	71
Internal Link Dist (ft)		553			473			812			658	
Turn Bay Length (ft)	280		250	185			190		195	130		130
Base Capacity (vph)	330	1556	1538	364	1400	716	752	501	534	334	396	698
Starvation Cap Reductn	0	0	0	0	66	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.53	0.20	0.36	0.89	0.19	0.53	0.48	0.26	0.23	0.45	0.19

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Twin Mesa Metropolitan District New Service Plan
SV2023-003
Planning Commission Supplemental Memo Page 430 of 1222

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	215	755	285	120	1095	125	370	220	130	70	165	125
Future Volume (veh/h)	215	755	285	120	1095	125	370	220	130	70	165	125
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1870	1870	1870	1856	1856	1856	1826	1826	1826
Adj Flow Rate, veh/h	234	821	0	130	1190	136	402	239	141	76	179	136
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	2	2	2	3	3	3	5	5	5
Cap, veh/h	272	1288		342	1270	567	815	581	493	350	504	586
Arrive On Green	0.10	0.37	0.00	0.18	0.72	0.72	0.08	0.31	0.31	0.04	0.28	0.28
Sat Flow, veh/h	1739	3469	1547	1781	3554	1585	3428	1856	1572	1739	1826	1547
Grp Volume(v), veh/h	234	821	0	130	1190	136	402	239	141	76	179	136
Grp Sat Flow(s),veh/h/ln	1739	1735	1547	1781	1777	1585	1714	1856	1572	1739	1826	1547
Q Serve(g_s), s	9.2	21.4	0.0	4.7	31.8	3.2	9.0	11.2	7.4	3.4	8.7	6.6
Cycle Q Clear(g_c), s	9.2	21.4	0.0	4.7	31.8	3.2	9.0	11.2	7.4	3.4	8.7	6.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	272	1288		342	1270	567	815	581	493	350	504	586
V/C Ratio(X)	0.86	0.64		0.38	0.94	0.24	0.49	0.41	0.29	0.22	0.36	0.23
Avail Cap(c_a), veh/h	362	1561		353	1389	620	815	581	493	361	504	586
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.68	0.68	0.68	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.1	28.5	0.0	18.3	14.6	10.5	25.0	29.8	28.5	26.8	32.0	23.3
Incr Delay (d2), s/veh	11.9	0.6	0.0	0.2	8.5	0.1	0.2	2.1	1.5	0.1	2.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	8.8	0.0	1.7	6.6	1.1	3.7	5.4	3.0	1.4	4.1	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.0	29.1	0.0	18.5	23.1	10.7	25.2	31.9	30.0	26.9	33.9	24.2
LnGrp LOS	D	C		B	C	B	C	C	C	C	C	C
Approach Vol, veh/h		1055	A		1456			782			391	
Approach Delay, s/veh		30.9			21.5			28.1			29.2	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	36.3	15.3	45.3	8.9	40.5	13.8	46.8
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	9.0	21.0	17.0	43.0	5.6	24.4	10.5	49.5
Max Q Clear Time (g_c+I1), s	11.0	10.7	11.2	33.8	5.4	13.2	6.7	23.4
Green Ext Time (p_c), s	0.0	1.5	0.1	5.5	0.0	2.0	0.0	6.1

Intersection Summary	
HCM 6th Ctrl Delay	26.4
HCM 6th LOS	C

Notes

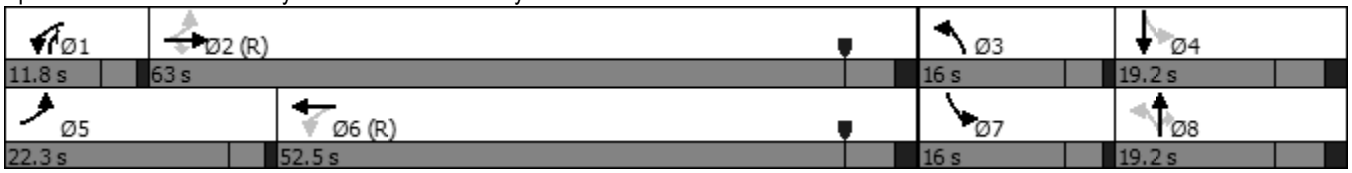
User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	190	635	140	140	1185	85	45	70	90	70	85
Future Volume (vph)	190	635	140	140	1185	85	45	70	90	70	85
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	pm+ov	pm+pt	NA	Free
Protected Phases	5	2		1	6	3	8	1	7	4	
Permitted Phases	2		2	6		8		8	4		Free
Detector Phase	5	2	2	1	6	3	8	1	7	4	
Switch Phase											
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0	3.0	5.0	3.0	3.0	5.0	
Minimum Split (s)	9.5	32.0	32.0	9.5	32.0	9.5	11.0	9.5	9.5	11.0	
Total Split (s)	22.3	63.0	63.0	11.8	52.5	16.0	19.2	11.8	16.0	19.2	
Total Split (%)	20.3%	57.3%	57.3%	10.7%	47.7%	14.5%	17.5%	10.7%	14.5%	17.5%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.0	3.0	3.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	1.0	2.0	1.0	1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	4.0	4.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None	None	
Act Effct Green (s)	78.9	67.3	67.3	71.2	62.4	18.2	9.0	16.3	19.0	9.3	110.0
Actuated g/C Ratio	0.72	0.61	0.61	0.65	0.57	0.17	0.08	0.15	0.17	0.08	1.00
v/c Ratio	0.75	0.33	0.15	0.28	0.73	0.36	0.32	0.23	0.39	0.48	0.06

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 17.5
Intersection Capacity Utilization 74.1%
Analysis Period (min) 15

Splits and Phases: 2: Perry St. & Plum Creek Pkwy.



Twin Mesa Metropolitan District New Service Plan
SV2023-003
Planning Commission Supplemental Memo Page 432 of 1222



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	207	690	152	152	1467	92	49	76	98	76	92
v/c Ratio	0.75	0.33	0.15	0.28	0.73	0.36	0.32	0.23	0.39	0.48	0.06
Control Delay	56.8	5.4	0.8	5.6	16.3	38.5	52.0	4.3	39.1	57.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.8	5.4	0.8	5.6	16.3	38.5	52.0	4.3	39.1	57.2	0.1
Queue Length 50th (ft)	102	46	0	20	246	54	33	0	58	52	0
Queue Length 95th (ft)	182	70	1	m37	#700	92	70	18	97	97	0
Internal Link Dist (ft)		473			1330		455			497	
Turn Bay Length (ft)	170		70	100		185		65	120		120
Base Capacity (vph)	375	2122	992	555	1999	309	225	344	296	228	1615
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	21	0	0	0	0	0	10
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.33	0.15	0.27	0.74	0.30	0.22	0.22	0.33	0.33	0.06

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	635	140	140	1185	165	85	45	70	90	70	85
Future Volume (veh/h)	190	635	140	140	1185	165	85	45	70	90	70	85
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1885	1885	1885	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	207	690	152	152	1288	179	92	49	76	98	76	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	4	4	1	1	1	1	1	1	0	0	0
Cap, veh/h	399	2226	993	564	1965	271	218	127	186	237	134	
Arrive On Green	0.13	1.00	1.00	0.10	1.00	1.00	0.06	0.07	0.07	0.06	0.07	0.00
Sat Flow, veh/h	1753	3497	1560	1795	3161	437	1795	1885	1583	1810	1900	1610
Grp Volume(v), veh/h	207	690	152	152	726	741	92	49	76	98	76	0
Grp Sat Flow(s),veh/h/ln	1753	1749	1560	1795	1791	1807	1795	1885	1583	1810	1900	1610
Q Serve(g_s), s	5.0	0.0	0.0	3.5	0.0	0.0	5.2	2.7	4.9	5.5	4.3	0.0
Cycle Q Clear(g_c), s	5.0	0.0	0.0	3.5	0.0	0.0	5.2	2.7	4.9	5.5	4.3	0.0
Prop In Lane	1.00		1.00	1.00		0.24	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	399	2226	993	564	1113	1123	218	127	186	237	134	
V/C Ratio(X)	0.52	0.31	0.15	0.27	0.65	0.66	0.42	0.39	0.41	0.41	0.57	
Avail Cap(c_a), veh/h	578	2226	993	602	1113	1123	304	226	269	317	228	
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.86	0.86	0.86	0.74	0.74	0.74	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	5.8	0.0	0.0	6.2	0.0	0.0	44.1	49.1	45.0	43.8	49.5	0.0
Incr Delay (d2), s/veh	0.3	0.3	0.3	0.1	2.2	2.3	0.5	1.4	1.1	0.4	2.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.1	0.1	1.1	0.7	0.7	2.3	1.3	2.0	2.4	2.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.1	0.3	0.3	6.2	2.2	2.3	44.5	50.5	46.1	44.3	52.3	0.0
LnGrp LOS	A	A	A	A	A	A	D	D	D	D	D	
Approach Vol, veh/h		1049			1619			217			174	A
Approach Delay, s/veh		1.5			2.6			46.4			47.8	
Approach LOS		A			A			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	76.0	10.8	13.8	11.1	74.4	11.1	13.4
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	7.8	57.0	12.0	13.2	18.3	46.5	12.0	13.2
Max Q Clear Time (g_c+I1), s	5.5	2.0	7.2	6.3	7.0	2.0	7.5	6.9
Green Ext Time (p_c), s	0.0	6.0	0.0	0.1	0.1	14.7	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	7.9
HCM 6th LOS	A

Notes

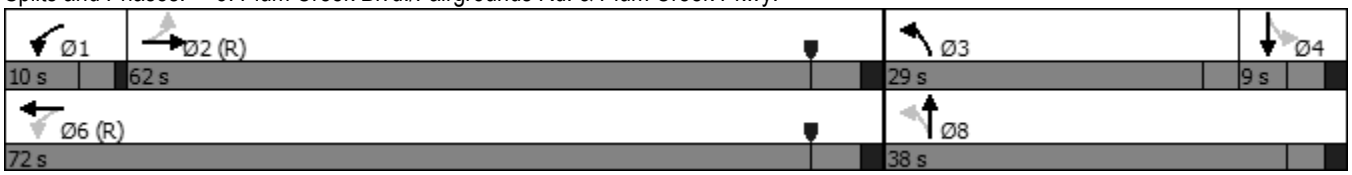
User approved pedestrian interval to be less than phase max green.

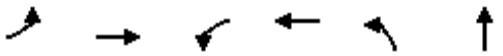
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	Ø4
Lane Configurations							
Traffic Volume (vph)	15	535	55	1120	365	0	
Future Volume (vph)	15	535	55	1120	365	0	
Turn Type	Perm	NA	pm+pt	NA	pm+pt	NA	
Protected Phases		2	1	6	3	8	4
Permitted Phases	2		6		8		
Detector Phase	2	2	1	6	3	8	
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	5.0	5.0	2.0
Minimum Split (s)	33.0	33.0	9.5	28.0	14.5	10.0	7.0
Total Split (s)	62.0	62.0	10.0	72.0	29.0	38.0	9.0
Total Split (%)	56.4%	56.4%	9.1%	65.5%	26.4%	34.5%	8%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	1.0	2.0	0.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	4.0	6.0	3.0	5.0	
Lead/Lag	Lag	Lag	Lead		Lead		Lag
Lead-Lag Optimize?	Yes	Yes	Yes		Yes		Yes
Recall Mode	C-Max	C-Max	None	C-Max	None	Max	Max
Act Effct Green (s)	58.0	58.0	68.0	66.0	35.0	33.0	
Actuated g/C Ratio	0.53	0.53	0.62	0.60	0.32	0.30	
v/c Ratio	0.09	0.47	0.17	0.57	0.82	0.06	

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 19.3
Intersection Capacity Utilization 73.7%
Analysis Period (min) 15

Splits and Phases: 3: Plum Creek Blvd./Fairgrounds Rd. & Plum Creek Pkwy.





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT
Lane Group Flow (vph)	16	848	60	1218	397	43
v/c Ratio	0.09	0.47	0.17	0.57	0.82	0.06
Control Delay	16.6	13.9	9.4	14.7	48.4	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.6	13.9	9.4	14.7	48.4	0.2
Queue Length 50th (ft)	4	111	16	256	245	0
Queue Length 95th (ft)	m17	165	32	316	#384	0
Internal Link Dist (ft)		1330		637		613
Turn Bay Length (ft)	70		55			
Base Capacity (vph)	184	1790	361	2144	501	709
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.47	0.17	0.57	0.79	0.06

Intersection Summary

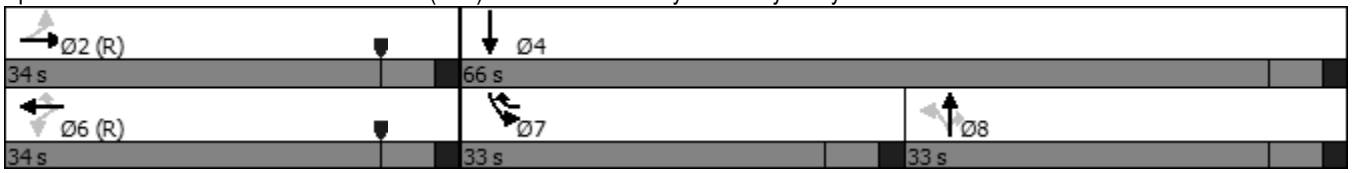
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	5	5	10	15	300	2	135	55	155	135
Future Volume (vph)	5	5	10	15	300	2	135	55	155	135
Turn Type	Perm	NA	Perm	NA	pm+ov	Perm	NA	Perm	Prot	NA
Protected Phases		2		6	7		8		7	4
Permitted Phases	2		6		6	8		8		
Detector Phase	2	2	6	6	7	8	8	8	7	4
Switch Phase										
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	33.0	33.0	33.0	33.0	11.0	33.0	33.0	33.0	11.0	33.0
Total Split (s)	34.0	34.0	34.0	34.0	33.0	33.0	33.0	33.0	33.0	66.0
Total Split (%)	34.0%	34.0%	34.0%	34.0%	33.0%	33.0%	33.0%	33.0%	33.0%	66.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag					Lead	Lag	Lag	Lag	Lead	
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	Max	Max	Max	None	Max
Act Effct Green (s)	28.0	28.0	28.0	28.0	44.4	43.6	43.6	43.6	10.4	60.0
Actuated g/C Ratio	0.28	0.28	0.28	0.28	0.44	0.44	0.44	0.44	0.10	0.60
v/c Ratio	0.02	0.02	0.03	0.03	0.37	0.00	0.10	0.08	0.47	0.07

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.47
Intersection Signal Delay: 17.5
Intersection Capacity Utilization 50.2%
Analysis Period (min) 15

Splits and Phases: 7: Dawson Trail Blvd. (new) & Territorial Rd./Crystal Valley Pkwy.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	535	245	55	1120	1	365	0	40	0	0	0
Future Volume (veh/h)	15	535	245	55	1120	1	365	0	40	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1885	1885	1885	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	16	582	266	60	1217	1	397	0	43	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	4	4	1	1	1	1	1	1	0	0	0
Cap, veh/h	247	1225	559	478	2204	2	536	0	479	65	98	0
Arrive On Green	1.00	1.00	1.00	0.04	0.60	0.60	0.22	0.00	0.30	0.00	0.00	0.00
Sat Flow, veh/h	451	2332	1064	1795	3673	3	1795	0	1598	1385	1900	0
Grp Volume(v), veh/h	16	436	412	60	593	625	397	0	43	0	0	0
Grp Sat Flow(s),veh/h/ln	451	1749	1648	1795	1791	1885	1795	0	1598	1385	1900	0
Q Serve(g_s), s	1.0	0.0	0.0	1.6	21.8	21.8	22.1	0.0	2.1	0.0	0.0	0.0
Cycle Q Clear(g_c), s	14.6	0.0	0.0	1.6	21.8	21.8	22.1	0.0	2.1	0.0	0.0	0.0
Prop In Lane	1.00		0.65	1.00		0.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	247	919	866	478	1075	1131	536	0	479	65	98	0
V/C Ratio(X)	0.06	0.47	0.48	0.13	0.55	0.55	0.74	0.00	0.09	0.00	0.00	0.00
Avail Cap(c_a), veh/h	247	919	866	507	1075	1131	564	0	479	65	98	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.96	0.96	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	1.7	0.0	0.0	10.0	13.2	13.2	35.5	0.0	27.7	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.5	1.7	1.8	0.1	2.0	1.9	4.2	0.0	0.4	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.4	0.4	0.6	8.7	9.1	10.2	0.0	0.9	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	2.2	1.7	1.8	10.1	15.2	15.1	39.7	0.0	28.1	0.0	0.0	0.0
LnGrp LOS	A	A	A	B	B	B	D	A	C	A	A	A
Approach Vol, veh/h		864			1278			440			0	
Approach Delay, s/veh		1.7			14.9			38.6			0.0	
Approach LOS		A			B			D				

Timer - Assigned Phs	1	2	3	4		6		8				
Phs Duration (G+Y+Rc), s	8.2	63.8	27.3	10.7		72.0		38.0				
Change Period (Y+Rc), s	4.0	6.0	3.0	5.0		6.0		5.0				
Max Green Setting (Gmax), s	6.0	56.0	26.0	4.0		66.0		33.0				
Max Q Clear Time (g_c+I1), s	3.6	16.6	24.1	0.0		23.8		4.1				
Green Ext Time (p_c), s	0.0	6.6	0.2	0.0		10.3		0.1				

Intersection Summary												
HCM 6th Ctrl Delay			14.5									
HCM 6th LOS			B									

Notes

User approved pedestrian interval to be less than phase max green.

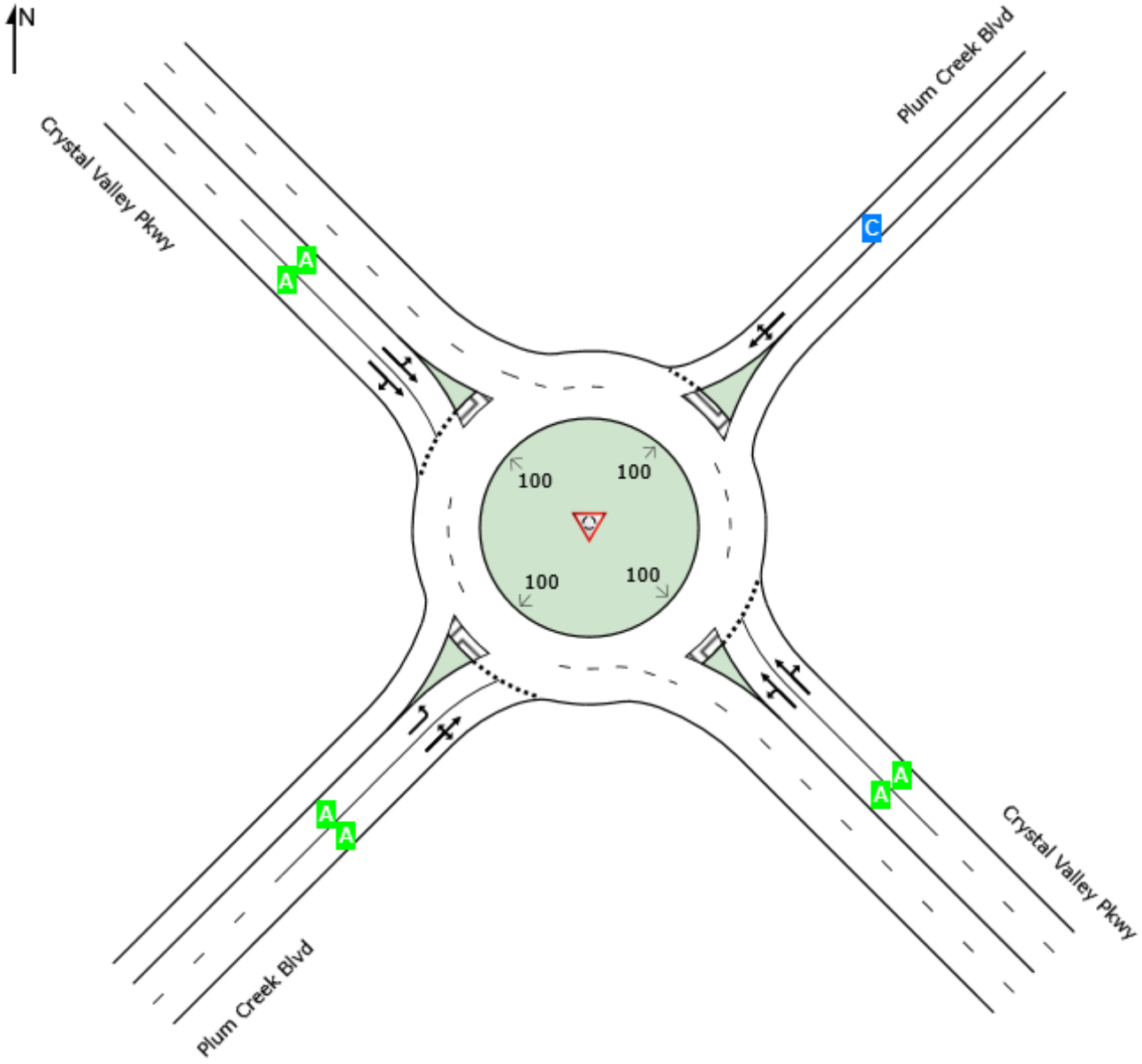
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 005 [Int #5_2040 Back AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
LOS	A	C	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 7:02:42 AM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #5.sip9

DELAY (CONTROL)

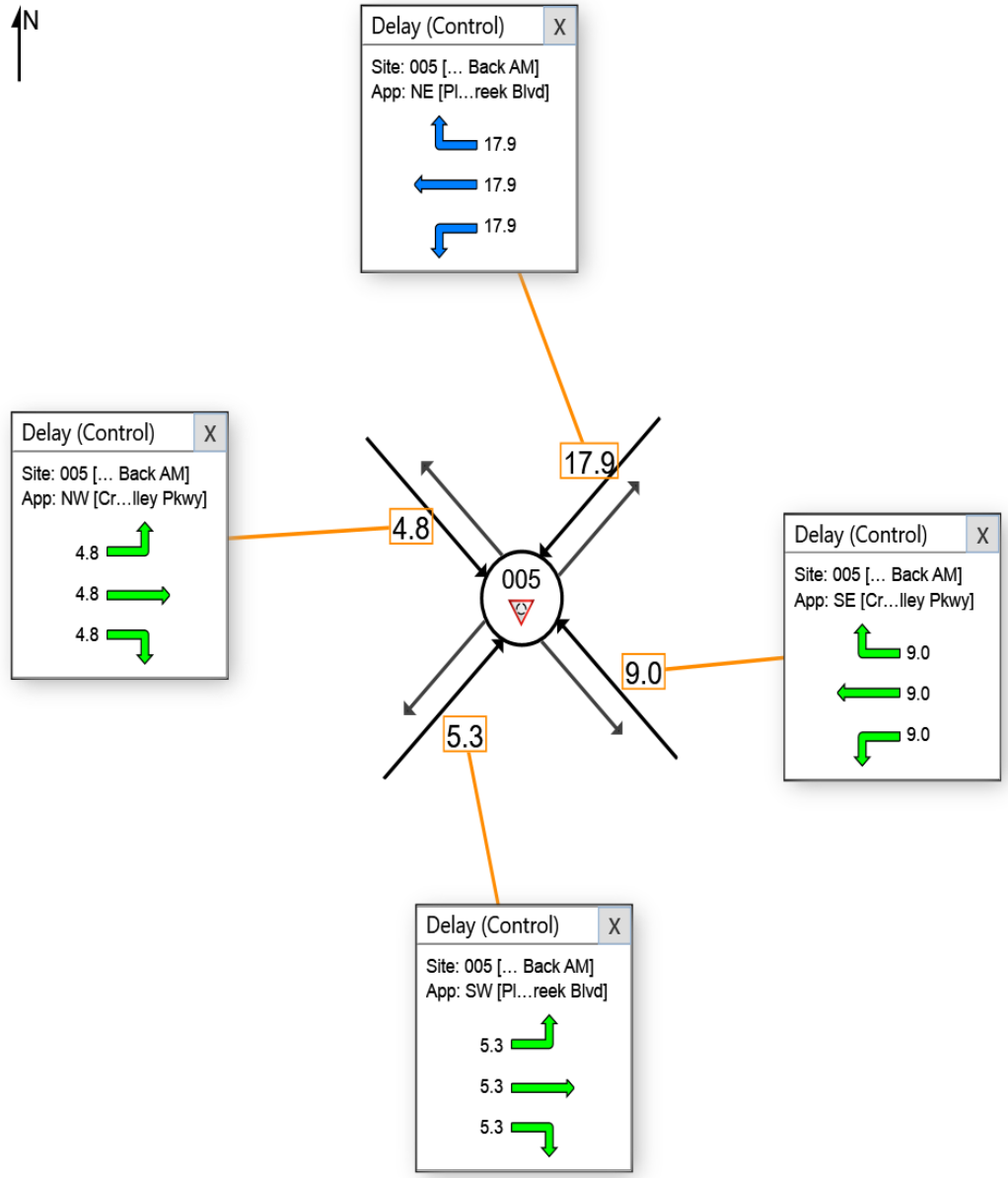
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 005 [Int #5_2040 Back AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



Colour code based on Level of Service



LOS A LOS B LOS C LOS D LOS E LOS F

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Roundabout Level of Service Method: Same as Sign Control
Delay Model: HCM Delay Formula (Geometric Delay is not included).

Approach values are flow-weighted average values for vehicle movements (pedestrian delays not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 7:02:42 AM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #5.sip9

QUEUE DISTANCE (PERCENTILE)

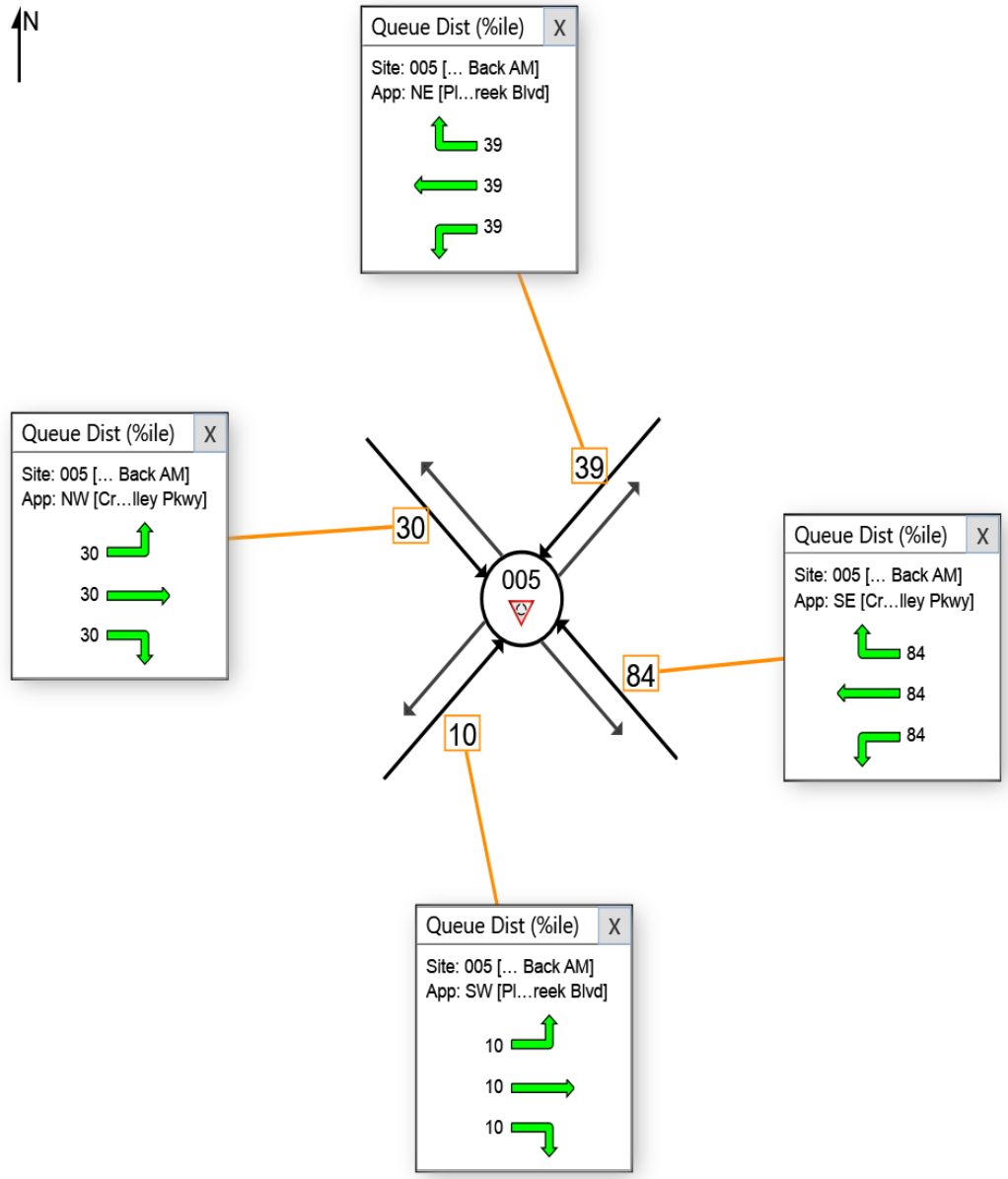
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 005 [Int #5_2040 Back AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



Colour code based on Queue Storage Ratio



[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0]

Queue Model: HCM Queue Formula.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 7:02:42 AM

Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #5.sip9



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	7	8	11	16	326	2	147	60	168	152
v/c Ratio	0.02	0.02	0.03	0.03	0.37	0.00	0.10	0.08	0.47	0.07
Control Delay	26.4	24.8	49.1	48.9	7.2	17.5	17.5	1.5	46.1	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.4	24.8	49.1	48.9	7.2	17.5	17.5	1.5	46.1	8.2
Queue Length 50th (ft)	3	3	7	11	45	1	27	0	53	18
Queue Length 95th (ft)	12	12	m12	m18	m78	5	51	9	82	32
Internal Link Dist (ft)		1067		1733			1614			1008
Turn Bay Length (ft)	200		500			500		1000	500	
Base Capacity (vph)	397	513	392	521	1092	532	1542	745	926	2054
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.02	0.03	0.03	0.30	0.00	0.10	0.08	0.18	0.07

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	5	1	10	15	300	2	135	55	155	135	5
Future Volume (veh/h)	5	5	1	10	15	300	2	135	55	155	135	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900	1870	1870	1870	1870	1870	1870	1870	1826	1826
Adj Flow Rate, veh/h	7	7	1	11	16	326	2	147	60	168	147	5
Peak Hour Factor	0.75	0.75	0.75	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	0	2	2	2	2	2	2	2	5	5
Cap, veh/h	361	448	64	462	524	558	650	1664	742	248	2054	70
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.47	0.47	0.47	0.07	0.60	0.60
Sat Flow, veh/h	1055	1601	229	1407	1870	1585	1235	3554	1585	3456	3424	116
Grp Volume(v), veh/h	7	0	8	11	16	326	2	147	60	168	74	78
Grp Sat Flow(s),veh/h/ln	1055	0	1829	1407	1870	1585	1235	1777	1585	1728	1735	1805
Q Serve(g_s), s	0.5	0.0	0.3	0.6	0.6	16.8	0.1	2.3	2.1	4.7	1.8	1.8
Cycle Q Clear(g_c), s	1.1	0.0	0.3	0.9	0.6	16.8	0.1	2.3	2.1	4.7	1.8	1.8
Prop In Lane	1.00		0.13	1.00		1.00	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	361	0	512	462	524	558	650	1664	742	248	1041	1083
V/C Ratio(X)	0.02	0.00	0.02	0.02	0.03	0.58	0.00	0.09	0.08	0.68	0.07	0.07
Avail Cap(c_a), veh/h	361	0	512	462	524	558	650	1664	742	933	1041	1083
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.72	0.72	0.72	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.5	0.0	26.0	26.4	26.1	26.5	14.2	14.7	14.7	45.3	8.4	8.4
Incr Delay (d2), s/veh	0.1	0.0	0.1	0.1	0.1	3.2	0.0	0.1	0.2	3.2	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.1	0.2	0.3	6.7	0.0	0.9	0.8	2.1	0.7	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.6	0.0	26.1	26.4	26.2	29.7	14.2	14.9	14.9	48.5	8.5	8.5
LnGrp LOS	C	A	C	C	C	C	B	B	B	D	A	A
Approach Vol, veh/h		15			353			209			320	
Approach Delay, s/veh		26.3			29.4			14.9			29.5	
Approach LOS		C			C			B			C	

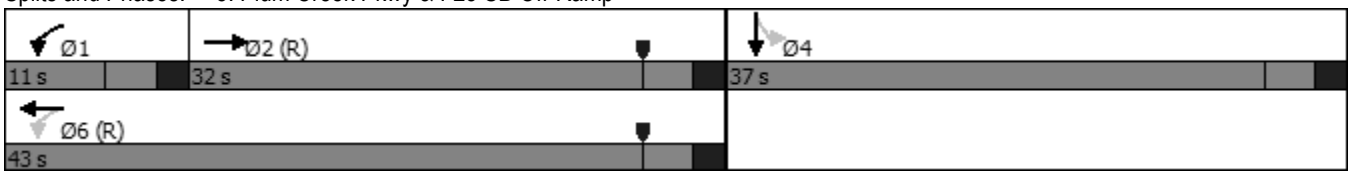
Timer - Assigned Phs		2		4		6	7	8				
Phs Duration (G+Y+Rc), s		34.0		66.0		34.0	13.2	52.8				
Change Period (Y+Rc), s		6.0		6.0		6.0	6.0	6.0				
Max Green Setting (Gmax), s		28.0		60.0		28.0	27.0	27.0				
Max Q Clear Time (g_c+I1), s		3.1		3.8		18.8	6.7	4.3				
Green Ext Time (p_c), s		0.0		0.9		0.9	0.5	1.0				

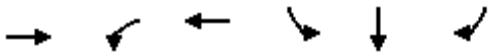
Intersection Summary												
HCM 6th Ctrl Delay			26.0									
HCM 6th LOS			C									

Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	587	105	638	710	5	411
Future Volume (vph)	587	105	638	710	5	411
Turn Type	NA	pm+pt	NA	Perm	NA	Free
Protected Phases	2	1	6		4	
Permitted Phases		6		4		Free
Detector Phase	2	1	6	4	4	
Switch Phase						
Minimum Initial (s)	10.0	5.0	10.0	5.0	5.0	
Minimum Split (s)	30.0	10.0	30.0	10.0	10.0	
Total Split (s)	32.0	11.0	43.0	37.0	37.0	
Total Split (%)	40.0%	13.8%	53.8%	46.3%	46.3%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes				
Recall Mode	C-Max	None	C-Max	None	None	
Act Effct Green (s)	38.2	48.6	48.6	21.4	21.4	80.0
Actuated g/C Ratio	0.48	0.61	0.61	0.27	0.27	1.00
v/c Ratio	0.32	0.27	0.33	0.61	0.62	0.29

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 20 (25%), Referenced to phase 2:EBT and 6:WBTL, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 15.0
Intersection Capacity Utilization 85.9%
Analysis Period (min) 15

Splits and Phases: 8: Plum Creek Pkwy & I-25 SB Off-Ramp





Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	775	117	709	529	266	457
v/c Ratio	0.32	0.27	0.33	0.61	0.62	0.29
Control Delay	14.5	9.8	9.2	28.0	31.0	0.5
Queue Delay	0.0	0.0	1.0	0.0	0.0	0.0
Total Delay	14.5	9.8	10.2	28.0	31.0	0.5
Queue Length 50th (ft)	81	22	81	127	128	0
Queue Length 95th (ft)	136	56	148	152	181	0
Internal Link Dist (ft)	437		181		388	
Turn Bay Length (ft)						160
Base Capacity (vph)	2398	434	2148	1288	646	1583
Starvation Cap Reductn	0	0	1102	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.27	0.68	0.41	0.41	0.29

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	587	111	105	638	0	0	0	0	710	5	411
Future Volume (veh/h)	0	587	111	105	638	0	0	0	0	710	5	411
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	652	123	117	709	0				793	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90				0.90	0.90	0.90
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2389	445	521	2391	0				1081	0	
Arrive On Green	0.00	0.55	0.55	0.06	0.67	0.00				0.20	0.00	0.00
Sat Flow, veh/h	0	4493	805	1781	3647	0				5344	0	1585
Grp Volume(v), veh/h	0	511	264	117	709	0				793	0	0
Grp Sat Flow(s),veh/h/ln	0	1702	1725	1781	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	6.3	6.5	2.1	6.5	0.0				11.1	0.0	0.0
Cycle Q Clear(g_c), s	0.0	6.3	6.5	2.1	6.5	0.0				11.1	0.0	0.0
Prop In Lane	0.00		0.47	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1880	953	521	2391	0				1081	0	
V/C Ratio(X)	0.00	0.27	0.28	0.22	0.30	0.00				0.73	0.00	
Avail Cap(c_a), veh/h	0	1880	953	552	2391	0				2138	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.64	0.64	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	9.4	9.5	6.2	5.4	0.0				29.9	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.4	0.7	0.1	0.2	0.0				1.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.2	2.4	0.7	2.0	0.0				4.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	9.8	10.2	6.4	5.6	0.0				30.9	0.0	0.0
LnGrp LOS	A	A	B	A	A	A				C	A	
Approach Vol, veh/h		775			826						793	A
Approach Delay, s/veh		9.9			5.7						30.9	
Approach LOS		A			A						C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	9.6	49.2		21.2		58.8
Change Period (Y+Rc), s	5.0	5.0		5.0		5.0
Max Green Setting (Gmax), s	6.0	27.0		32.0		38.0
Max Q Clear Time (g_c+I1), s	4.1	8.5		13.1		8.5
Green Ext Time (p_c), s	0.0	5.0		3.1		5.5

Intersection Summary		
HCM 6th Ctrl Delay		15.4
HCM 6th LOS		B

Notes

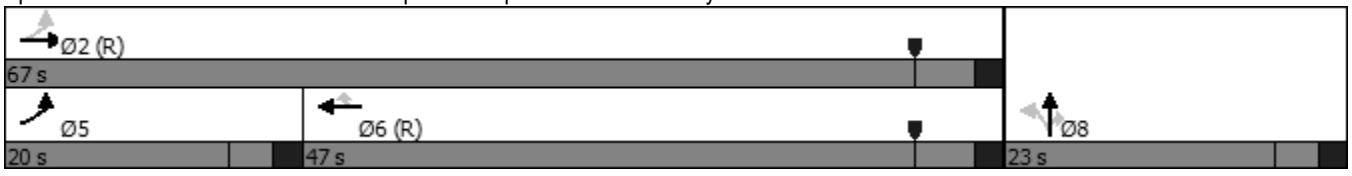
User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	289	1007	580	1100	159	2	130
Future Volume (vph)	289	1007	580	1100	159	2	130
Turn Type	pm+pt	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6			8	
Permitted Phases	2			6	8		8
Detector Phase	5	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0	5.0
Minimum Split (s)	10.0	31.0	24.0	24.0	40.0	40.0	40.0
Total Split (s)	20.0	67.0	47.0	47.0	23.0	23.0	23.0
Total Split (%)	22.2%	74.4%	52.2%	52.2%	25.6%	25.6%	25.6%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max
Act Effct Green (s)	62.0	61.0	42.0	42.0	18.0	18.0	18.0
Actuated g/C Ratio	0.69	0.68	0.47	0.47	0.20	0.20	0.20
v/c Ratio	0.87	0.32	0.74	0.60	0.32	0.32	0.26

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 53 (59%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 15.1
Intersection Capacity Utilization 85.9%
Analysis Period (min) 15

Splits and Phases: 9: I-25 NB Off-Ramp/On-Ramp & Plum Creek Pkwy





Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	314	1095	1228	598	109	107	100
v/c Ratio	0.87	0.32	0.74	0.60	0.32	0.32	0.26
Control Delay	45.3	6.3	17.1	4.3	34.0	25.1	8.6
Queue Delay	1.4	1.1	0.0	0.0	0.0	0.0	0.0
Total Delay	46.7	7.3	17.1	4.3	34.0	25.1	8.6
Queue Length 50th (ft)	118	81	223	0	55	40	0
Queue Length 95th (ft)	#256	101	313	62	107	92	43
Internal Link Dist (ft)		181	431			480	
Turn Bay Length (ft)					350		150
Base Capacity (vph)	380	3446	1653	991	336	335	380
Starvation Cap Reductn	12	1998	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.76	0.74	0.60	0.32	0.32	0.26

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	289	1007	0	0	580	1100	159	2	130	0	0	0
Future Volume (veh/h)	289	1007	0	0	580	1100	159	2	130	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	314	1095	0	0	630	1196	218	0	95			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	354	3461	0	0	944	1601	713	0	317			
Arrive On Green	0.12	0.68	0.00	0.00	0.50	0.50	0.20	0.00	0.20			
Sat Flow, veh/h	1781	5274	0	0	1870	3170	3563	0	1585			
Grp Volume(v), veh/h	314	1095	0	0	630	1196	218	0	95			
Grp Sat Flow(s),veh/h/ln	1781	1702	0	0	1870	1585	1781	0	1585			
Q Serve(g_s), s	8.1	7.9	0.0	0.0	22.6	27.0	4.7	0.0	4.6			
Cycle Q Clear(g_c), s	8.1	7.9	0.0	0.0	22.6	27.0	4.7	0.0	4.6			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	354	3461	0	0	944	1601	713	0	317			
V/C Ratio(X)	0.89	0.32	0.00	0.00	0.67	0.75	0.31	0.00	0.30			
Avail Cap(c_a), veh/h	442	3461	0	0	944	1601	713	0	317			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.90	0.90	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	19.7	5.9	0.0	0.0	16.6	17.7	30.7	0.0	30.6			
Incr Delay (d2), s/veh	15.2	0.2	0.0	0.0	3.7	3.2	1.1	0.0	2.4			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	4.7	2.5	0.0	0.0	10.0	9.8	2.1	0.0	1.9			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.9	6.2	0.0	0.0	20.4	20.9	31.8	0.0	33.0			
LnGrp LOS	C	A	A	A	C	C	C	A	C			
Approach Vol, veh/h		1409			1826			313				
Approach Delay, s/veh		12.6			20.7			32.2				
Approach LOS		B			C			C				

Timer - Assigned Phs	2			5	6		8				
Phs Duration (G+Y+Rc), s	67.0			15.6	51.4		23.0				
Change Period (Y+Rc), s	6.0			5.0	6.0		5.0				
Max Green Setting (Gmax), s	61.0			15.0	41.0		18.0				
Max Q Clear Time (g_c+I1), s	9.9			10.1	29.0		6.7				
Green Ext Time (p_c), s	10.4			0.4	7.6		0.8				

Intersection Summary	
HCM 6th Ctrl Delay	18.5
HCM 6th LOS	B

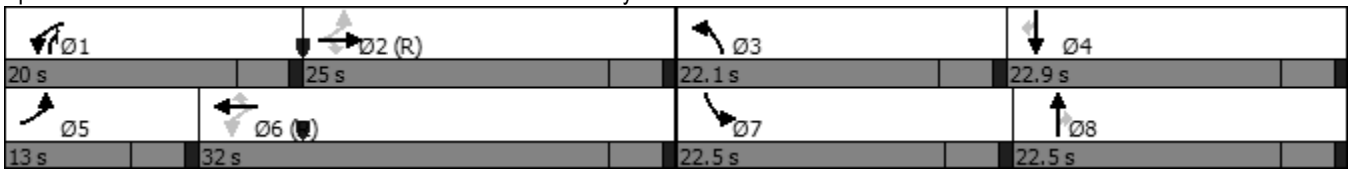
Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	363	28	167	569	59	83	75	229	87	130	26
Future Volume (vph)	27	363	28	167	569	59	83	75	229	87	130	26
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases	2		2	6		6			8			4
Detector Phase	5	2	2	1	6	6	3	8	1	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	9.5	22.5	22.5	22.5
Total Split (s)	13.0	25.0	25.0	20.0	32.0	32.0	22.1	22.5	20.0	22.5	22.9	22.9
Total Split (%)	14.4%	27.8%	27.8%	22.2%	35.6%	35.6%	24.6%	25.0%	22.2%	25.0%	25.4%	25.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	Max	Max	Max
Act Effct Green (s)	31.2	24.8	24.8	40.5	35.8	35.8	9.9	15.5	29.2	22.5	28.2	28.2
Actuated g/C Ratio	0.35	0.28	0.28	0.45	0.40	0.40	0.11	0.17	0.32	0.25	0.31	0.31
v/c Ratio	0.09	0.41	0.05	0.41	0.44	0.09	0.46	0.13	0.37	0.11	0.13	0.05

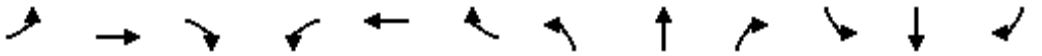
Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.46
Intersection Signal Delay: 21.3
Intersection Capacity Utilization 43.7%
Analysis Period (min) 15

Splits and Phases: 10: Prairie Hawk Drive & Plum Creek Pkwy



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	29	395	30	182	618	64	90	82	249	95	141	28
v/c Ratio	0.09	0.41	0.05	0.41	0.44	0.09	0.46	0.13	0.37	0.11	0.13	0.05
Control Delay	15.2	28.9	0.2	18.4	22.2	0.4	44.6	30.4	4.0	29.6	24.6	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.2	28.9	0.2	18.4	22.2	0.4	44.6	30.4	4.0	29.6	24.6	0.2
Queue Length 50th (ft)	9	96	0	61	118	0	49	20	0	23	31	0
Queue Length 95th (ft)	24	147	0	105	206	2	92	40	43	43	57	0
Internal Link Dist (ft)		969			922			624			872	
Turn Bay Length (ft)	230		230	230		230	230		230	230		250
Base Capacity (vph)	381	973	567	491	1408	706	346	707	745	858	1109	621
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.41	0.05	0.37	0.44	0.09	0.26	0.12	0.33	0.11	0.13	0.05

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	363	28	167	569	59	83	75	229	87	130	26
Future Volume (veh/h)	27	363	28	167	569	59	83	75	229	87	130	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	29	395	30	182	618	0	90	82	249	95	141	28
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	356	1234	550	489	1439		117	591	401	691	1069	477
Arrive On Green	0.03	0.35	0.35	0.09	0.40	0.00	0.07	0.17	0.17	0.20	0.30	0.30
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	29	395	30	182	618	0	90	82	249	95	141	28
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1777	1585	1728	1777	1585
Q Serve(g_s), s	0.9	7.3	1.1	5.6	11.3	0.0	4.5	1.8	12.5	2.0	2.6	1.1
Cycle Q Clear(g_c), s	0.9	7.3	1.1	5.6	11.3	0.0	4.5	1.8	12.5	2.0	2.6	1.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	356	1234	550	489	1439		117	591	401	691	1069	477
V/C Ratio(X)	0.08	0.32	0.05	0.37	0.43		0.77	0.14	0.62	0.14	0.13	0.06
Avail Cap(c_a), veh/h	473	1234	550	642	1439		348	711	454	691	1069	477
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.0	21.6	19.5	15.4	19.3	0.0	41.4	32.0	29.8	29.6	22.9	22.4
Incr Delay (d2), s/veh	0.1	0.7	0.2	0.5	0.9	0.0	10.1	0.1	2.1	0.4	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.9	0.4	2.1	4.4	0.0	2.2	0.8	4.8	0.9	1.1	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.1	22.3	19.7	15.9	20.2	0.0	51.5	32.1	31.9	30.0	23.2	22.6
LnGrp LOS	B	C	B	B	C		D	C	C	C	C	C
Approach Vol, veh/h		454			800	A		421			264	
Approach Delay, s/veh		21.8			19.2			36.2			25.6	
Approach LOS		C			B			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.3	35.8	10.4	31.6	7.1	40.9	22.5	19.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	15.5	20.5	17.6	18.4	8.5	27.5	18.0	18.0
Max Q Clear Time (g_c+I1), s	7.6	9.3	6.5	4.6	2.9	13.3	4.0	14.5
Green Ext Time (p_c), s	0.3	1.8	0.1	0.7	0.0	3.2	0.2	0.4

Intersection Summary	
HCM 6th Ctrl Delay	24.4
HCM 6th LOS	C

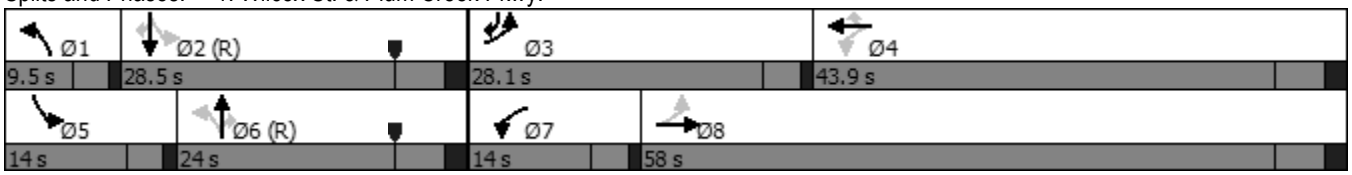
Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

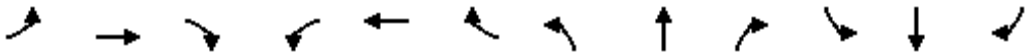
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	395	1555	265	45	915	195	190	190	100	205	185	340
Future Volume (vph)	395	1555	265	45	915	195	190	190	100	205	185	340
Turn Type	pm+pt	NA	Free	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+ov
Protected Phases	3	8		7	4		1	6		5	2	3
Permitted Phases	8		Free	4		4	6		6	2		2
Detector Phase	3	8		7	4	4	1	6	6	5	2	3
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	5.0	10.0	10.0	5.0	4.0	5.0
Minimum Split (s)	9.5	31.0		14.5	31.0	31.0	9.5	16.0	16.0	9.5	10.0	9.5
Total Split (s)	28.1	58.0		14.0	43.9	43.9	9.5	24.0	24.0	14.0	28.5	28.1
Total Split (%)	25.5%	52.7%		12.7%	39.9%	39.9%	8.6%	21.8%	21.8%	12.7%	25.9%	25.5%
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	3.0
All-Red Time (s)	1.0	2.0		1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	None
Act Effct Green (s)	65.6	52.4	110.0	49.2	37.2	37.2	28.3	20.7	20.7	36.1	24.8	53.2
Actuated g/C Ratio	0.60	0.48	1.00	0.45	0.34	0.34	0.26	0.19	0.19	0.33	0.23	0.48
v/c Ratio	0.94	0.97	0.18	0.20	0.80	0.31	0.32	0.58	0.24	0.65	0.46	0.44

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 54.6
Intersection Capacity Utilization 104.3%
Analysis Period (min) 15

Splits and Phases: 1: Wilcox St. & Plum Creek Pkwy.



Twin Mesa Metropolitan District New Service Plan
SV2023-003
Planning Commission Supplemental Memo Page 456 of 1222



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	416	1637	279	47	963	205	200	200	105	216	195	358
v/c Ratio	0.94	0.97	0.18	0.20	0.80	0.31	0.32	0.58	0.24	0.65	0.46	0.44
Control Delay	58.8	44.9	0.2	18.9	52.8	16.0	29.7	49.6	1.2	40.0	42.2	17.0
Queue Delay	0.0	42.1	0.0	0.0	0.3	0.0	0.0	0.0	0.1	8.4	0.0	0.0
Total Delay	58.8	87.0	0.2	18.9	53.1	16.0	29.7	49.6	1.3	48.5	42.2	17.0
Queue Length 50th (ft)	219	579	0	21	375	43	53	134	0	120	123	129
Queue Length 95th (ft)	#397	#759	0	m36	445	m101	82	214	0	189	196	207
Internal Link Dist (ft)		553			473			812			658	
Turn Bay Length (ft)	280		250	185			190		195	130		130
Base Capacity (vph)	466	1685	1564	231	1231	684	633	347	444	337	424	833
Starvation Cap Reductn	0	0	0	0	37	0	0	0	0	0	0	0
Spillback Cap Reductn	0	377	0	0	0	0	0	0	38	86	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	1.25	0.18	0.20	0.81	0.30	0.32	0.58	0.26	0.86	0.46	0.43

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Twin Mesa Metropolitan District New Service Plan
SV2023-003
Planning Commission Supplemental Memo Page 457 of 1222

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	395	1555	265	45	915	195	190	190	100	205	185	340
Future Volume (veh/h)	395	1555	265	45	915	195	190	190	100	205	185	340
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1856	1856	1856	1885	1885	1885
Adj Flow Rate, veh/h	416	1637	0	47	963	205	200	200	105	216	195	358
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	1	1	1
Cap, veh/h	443	1678		195	1273	567	528	345	292	323	427	654
Arrive On Green	0.18	0.47	0.00	0.05	0.24	0.24	0.05	0.19	0.19	0.09	0.23	0.23
Sat Flow, veh/h	1781	3554	1585	1781	3554	1583	3428	1856	1570	1795	1885	1595
Grp Volume(v), veh/h	416	1637	0	47	963	205	200	200	105	216	195	358
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1583	1714	1856	1570	1795	1885	1595
Q Serve(g_s), s	18.0	49.6	0.0	1.7	27.7	11.9	5.2	10.8	6.4	10.0	9.8	18.8
Cycle Q Clear(g_c), s	18.0	49.6	0.0	1.7	27.7	11.9	5.2	10.8	6.4	10.0	9.8	18.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	443	1678		195	1273	567	528	345	292	323	427	654
V/C Ratio(X)	0.94	0.98		0.24	0.76	0.36	0.38	0.58	0.36	0.67	0.46	0.55
Avail Cap(c_a), veh/h	507	1680		234	1273	567	528	345	292	323	427	654
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.81	0.81	0.81	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.2	28.4	0.0	26.0	37.3	31.3	34.3	40.9	39.1	32.7	36.7	24.7
Incr Delay (d2), s/veh	22.8	16.4	0.0	0.2	2.2	0.3	0.2	7.0	3.4	4.2	3.5	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.0	23.6	0.0	0.7	12.8	4.8	2.2	5.6	0.3	5.0	5.0	7.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.0	44.8	0.0	26.2	39.5	31.6	34.4	47.8	42.5	36.9	40.2	28.0
LnGrp LOS	D	D		C	D	C	C	D	D	D	D	C
Approach Vol, veh/h		2053	A		1215			505			769	
Approach Delay, s/veh		45.9			37.7			41.4			33.6	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	30.9	24.2	45.4	14.0	26.4	11.6	57.9
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	5.5	22.5	24.1	37.9	10.0	18.0	10.0	52.0
Max Q Clear Time (g_c+I1), s	7.2	20.8	20.0	29.7	12.0	12.8	3.7	51.6
Green Ext Time (p_c), s	0.0	0.6	0.2	4.4	0.0	0.9	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	41.1
HCM 6th LOS	D

Notes

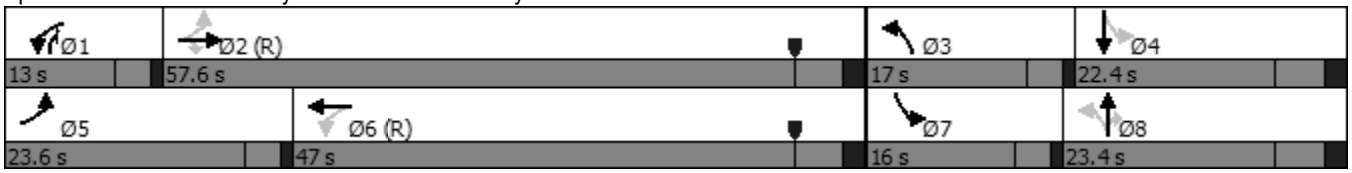
User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	275	1455	205	160	695	240	135	265	270	150	230
Future Volume (vph)	275	1455	205	160	695	240	135	265	270	150	230
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	pm+ov	pm+pt	NA	Free
Protected Phases	5	2		1	6	3	8	1	7	4	
Permitted Phases	2		2	6		8		8	4		Free
Detector Phase	5	2	2	1	6	3	8	1	7	4	
Switch Phase											
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0	3.0	5.0	3.0	3.0	5.0	
Minimum Split (s)	9.5	32.0	32.0	9.5	32.0	9.5	11.0	9.5	9.5	11.0	
Total Split (s)	23.6	57.6	57.6	13.0	47.0	17.0	23.4	13.0	16.0	22.4	
Total Split (%)	21.5%	52.4%	52.4%	11.8%	42.7%	15.5%	21.3%	11.8%	14.5%	20.4%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.0	3.0	3.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	1.0	2.0	1.0	1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	4.0	4.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None	None	
Act Effct Green (s)	69.0	55.2	55.2	60.3	49.7	28.9	14.2	24.8	27.6	13.6	110.0
Actuated g/C Ratio	0.63	0.50	0.50	0.55	0.45	0.26	0.13	0.23	0.25	0.12	1.00
v/c Ratio	0.75	0.88	0.27	0.80	0.60	0.79	0.60	0.65	0.83	0.70	0.15

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 44.9
Intersection Capacity Utilization 88.4%
Analysis Period (min) 15

Splits and Phases: 2: Perry St. & Plum Creek Pkwy.





Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	299	1582	223	168	953	261	147	288	293	163	250
v/c Ratio	0.75	0.88	0.27	0.80	0.60	0.79	0.60	0.65	0.83	0.70	0.15
Control Delay	15.5	27.7	6.3	52.9	22.1	50.0	55.3	28.3	55.1	61.6	0.2
Queue Delay	0.0	45.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.5	73.4	6.3	52.9	22.1	50.0	55.3	28.3	55.1	61.6	0.2
Queue Length 50th (ft)	48	621	52	58	291	150	98	104	172	111	0
Queue Length 95th (ft)	m73	m651	m64	m#163	m351	#232	162	189	#279	179	0
Internal Link Dist (ft)		473			1330		455			497	
Turn Bay Length (ft)	170		70	100		185		65	120		120
Base Capacity (vph)	473	1794	839	221	1582	338	297	451	351	283	1615
Starvation Cap Reductn	0	353	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	14
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.63	1.10	0.27	0.76	0.60	0.77	0.49	0.64	0.83	0.58	0.16

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	275	1455	205	160	695	210	240	135	265	270	150	230
Future Volume (veh/h)	275	1455	205	160	695	210	240	135	265	270	150	230
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	299	1582	223	168	732	221	261	147	288	293	163	0
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	0	0	0
Cap, veh/h	485	1721	767	279	1185	358	363	298	365	347	283	
Arrive On Green	0.23	0.96	0.96	0.14	0.87	0.87	0.12	0.16	0.16	0.11	0.15	0.00
Sat Flow, veh/h	1795	3582	1596	1795	2710	818	1795	1885	1595	1810	1900	1610
Grp Volume(v), veh/h	299	1582	223	168	484	469	261	147	288	293	163	0
Grp Sat Flow(s),veh/h/ln	1795	1791	1596	1795	1791	1737	1795	1885	1595	1810	1900	1610
Q Serve(g_s), s	10.3	16.2	0.8	5.8	8.1	8.1	13.0	7.8	17.4	12.0	8.8	0.0
Cycle Q Clear(g_c), s	10.3	16.2	0.8	5.8	8.1	8.1	13.0	7.8	17.4	12.0	8.8	0.0
Prop In Lane	1.00		1.00	1.00		0.47	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	485	1721	767	279	783	760	363	298	365	347	283	
V/C Ratio(X)	0.62	0.92	0.29	0.60	0.62	0.62	0.72	0.49	0.79	0.84	0.58	
Avail Cap(c_a), veh/h	601	1721	767	300	783	760	363	298	365	347	283	
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.32	0.32	0.32	0.86	0.86	0.86	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	11.6	1.4	1.1	15.0	4.4	4.4	35.4	42.3	40.0	38.5	43.6	0.0
Incr Delay (d2), s/veh	0.2	3.5	0.3	1.6	3.1	3.2	5.9	0.9	10.8	16.3	2.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	1.6	0.3	2.1	2.3	2.2	6.5	3.7	8.3	3.3	4.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.7	4.9	1.4	16.6	7.5	7.6	41.3	43.2	50.7	54.8	46.0	0.0
LnGrp LOS	B	A	A	B	A	A	D	D	D	D	D	
Approach Vol, veh/h		2104			1121			696			456	A
Approach Delay, s/veh		5.5			8.9			45.6			51.7	
Approach LOS		A			A			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.7	58.9	17.0	22.4	16.5	54.1	16.0	23.4
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	9.0	51.6	13.0	16.4	19.6	41.0	12.0	17.4
Max Q Clear Time (g_c+I1), s	7.8	18.2	15.0	10.8	12.3	10.1	14.0	19.4
Green Ext Time (p_c), s	0.0	17.3	0.0	0.3	0.2	7.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	17.6
HCM 6th LOS	B

Notes

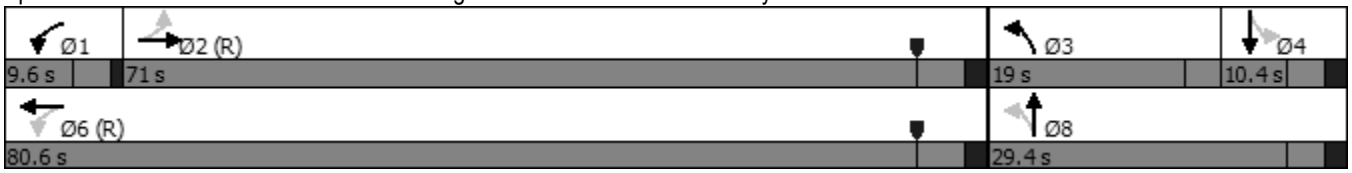
User approved pedestrian interval to be less than phase max green.

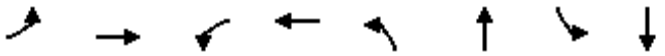
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	35	1495	35	760	290	0	1	1
Future Volume (vph)	35	1495	35	760	290	0	1	1
Turn Type	Perm	NA	pm+pt	NA	pm+pt	NA	Perm	NA
Protected Phases		2	1	6	3	8		4
Permitted Phases	2		6		8		4	
Detector Phase	2	2	1	6	3	8	4	4
Switch Phase								
Minimum Initial (s)	10.0	10.0	5.0	10.0	5.0	5.0	2.0	2.0
Minimum Split (s)	33.0	33.0	9.5	28.0	14.5	10.0	7.0	7.0
Total Split (s)	71.0	71.0	9.6	80.6	19.0	29.4	10.4	10.4
Total Split (%)	64.5%	64.5%	8.7%	73.3%	17.3%	26.7%	9.5%	9.5%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	1.0	2.0	0.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	6.0	3.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead		Lead		Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes		Yes		Yes	Yes
Recall Mode	C-Max	C-Max	None	C-Max	None	Max	Max	Max
Act Effct Green (s)	68.8	68.8	76.6	74.6	26.4	24.4	5.4	5.4
Actuated g/C Ratio	0.63	0.63	0.70	0.68	0.24	0.22	0.05	0.05
v/c Ratio	0.10	0.98	0.24	0.34	0.91	0.09	0.03	0.11

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 28.5
Intersection Capacity Utilization 88.0%
Analysis Period (min) 15

Splits and Phases: 3: Plum Creek Blvd./Fairgrounds Rd. & Plum Creek Pkwy.





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	38	2125	38	828	315	38	2	10
v/c Ratio	0.10	0.98	0.24	0.34	0.91	0.09	0.03	0.11
Control Delay	13.9	31.3	8.9	7.9	70.9	0.4	51.0	32.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.9	31.3	8.9	7.9	70.9	0.4	51.0	32.8
Queue Length 50th (ft)	13	~821	7	116	206	0	1	1
Queue Length 95th (ft)	m16	#963	17	147	#320	0	6	11
Internal Link Dist (ft)		1330		637		613		434
Turn Bay Length (ft)	70		55				110	
Base Capacity (vph)	400	2169	157	2400	345	440	69	89
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.98	0.24	0.34	0.91	0.09	0.03	0.11

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	1495	460	35	760	2	290	0	35	1	1	5
Future Volume (veh/h)	35	1495	460	35	760	2	290	0	35	1	1	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1870	1870	1870	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	38	1625	500	38	826	2	315	0	38	2	2	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.60	0.60	0.60
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	0	0	0
Cap, veh/h	455	1668	487	121	2466	6	388	0	354	134	16	65
Arrive On Green	0.81	0.81	0.81	0.03	0.68	0.68	0.15	0.00	0.22	0.05	0.05	0.05
Sat Flow, veh/h	667	2732	798	1781	3637	9	1795	0	1598	1391	332	1329
Grp Volume(v), veh/h	38	1035	1090	38	404	424	315	0	38	2	0	10
Grp Sat Flow(s),veh/h/ln	667	1791	1739	1781	1777	1869	1795	0	1598	1391	0	1661
Q Serve(g_s), s	1.5	51.7	67.2	0.8	10.4	10.4	16.0	0.0	2.1	0.2	0.0	0.6
Cycle Q Clear(g_c), s	4.5	51.7	67.2	0.8	10.4	10.4	16.0	0.0	2.1	0.2	0.0	0.6
Prop In Lane	1.00		0.46	1.00		0.00	1.00		1.00	1.00		0.80
Lane Grp Cap(c), veh/h	455	1094	1062	121	1205	1267	388	0	354	134	0	82
V/C Ratio(X)	0.08	0.95	1.03	0.31	0.33	0.33	0.81	0.00	0.11	0.01	0.00	0.12
Avail Cap(c_a), veh/h	455	1094	1062	156	1205	1267	388	0	354	134	0	82
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.42	0.42	0.42	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	4.8	8.9	10.3	28.2	7.4	7.4	41.8	0.0	34.1	49.8	0.0	50.0
Incr Delay (d2), s/veh	0.2	8.9	24.9	1.5	0.8	0.7	11.5	0.0	0.6	0.2	0.0	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	9.9	16.4	0.7	3.8	3.9	9.6	0.0	0.9	0.1	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.0	17.8	35.3	29.7	8.1	8.1	53.3	0.0	34.7	50.0	0.0	53.1
LnGrp LOS	A	B	D	C	A	A	D	A	C	D	A	D
Approach Vol, veh/h		2163			866			353			12	
Approach Delay, s/veh		26.4			9.0			51.3			52.6	
Approach LOS		C			A			D			D	

Timer - Assigned Phs	1	2	3	4		6		8				
Phs Duration (G+Y+Rc), s	7.4	73.2	19.0	10.4		80.6		29.4				
Change Period (Y+Rc), s	4.0	6.0	3.0	5.0		6.0		5.0				
Max Green Setting (Gmax), s	5.6	65.0	16.0	5.4		74.6		24.4				
Max Q Clear Time (g_c+I1), s	2.8	69.2	18.0	2.6		12.4		4.1				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0		5.9		0.1				

Intersection Summary												
HCM 6th Ctrl Delay			24.7									
HCM 6th LOS			C									

Notes

User approved pedestrian interval to be less than phase max green.

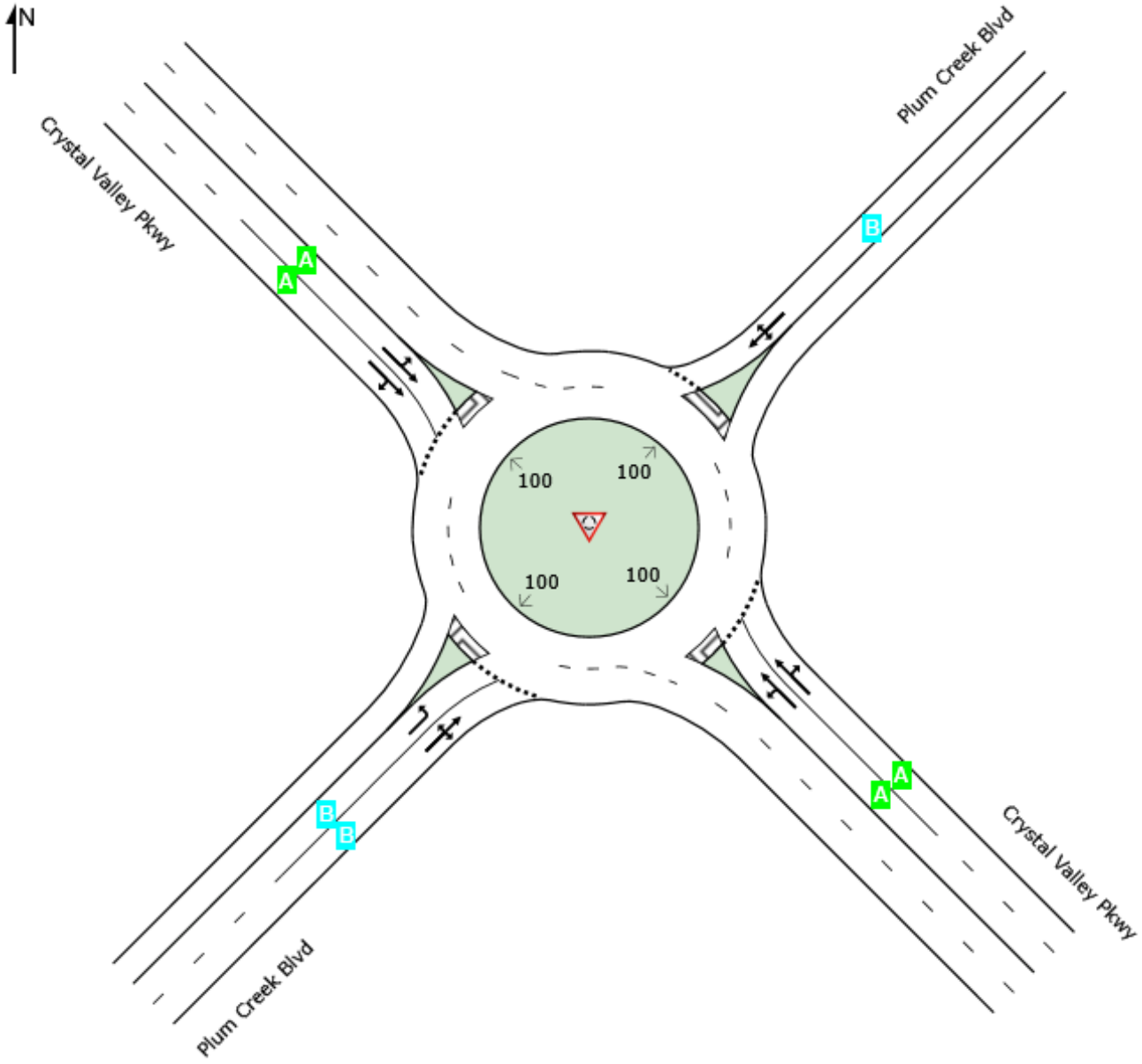
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 005 [Int #5_2040 Back PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
LOS	A	B	A	B	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 7:02:42 AM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #5.sip9

DELAY (CONTROL)

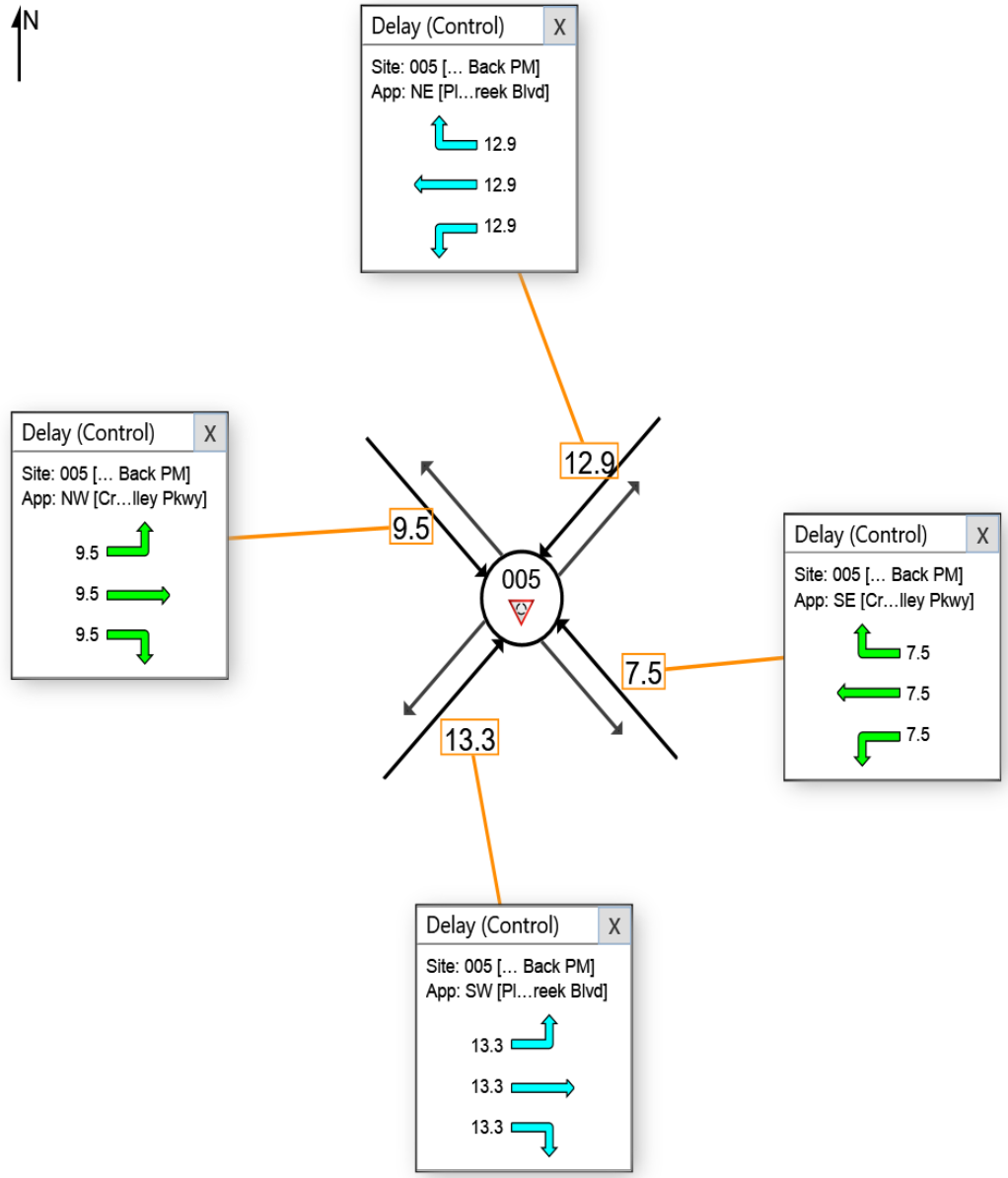
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 005 [Int #5_2040 Back PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

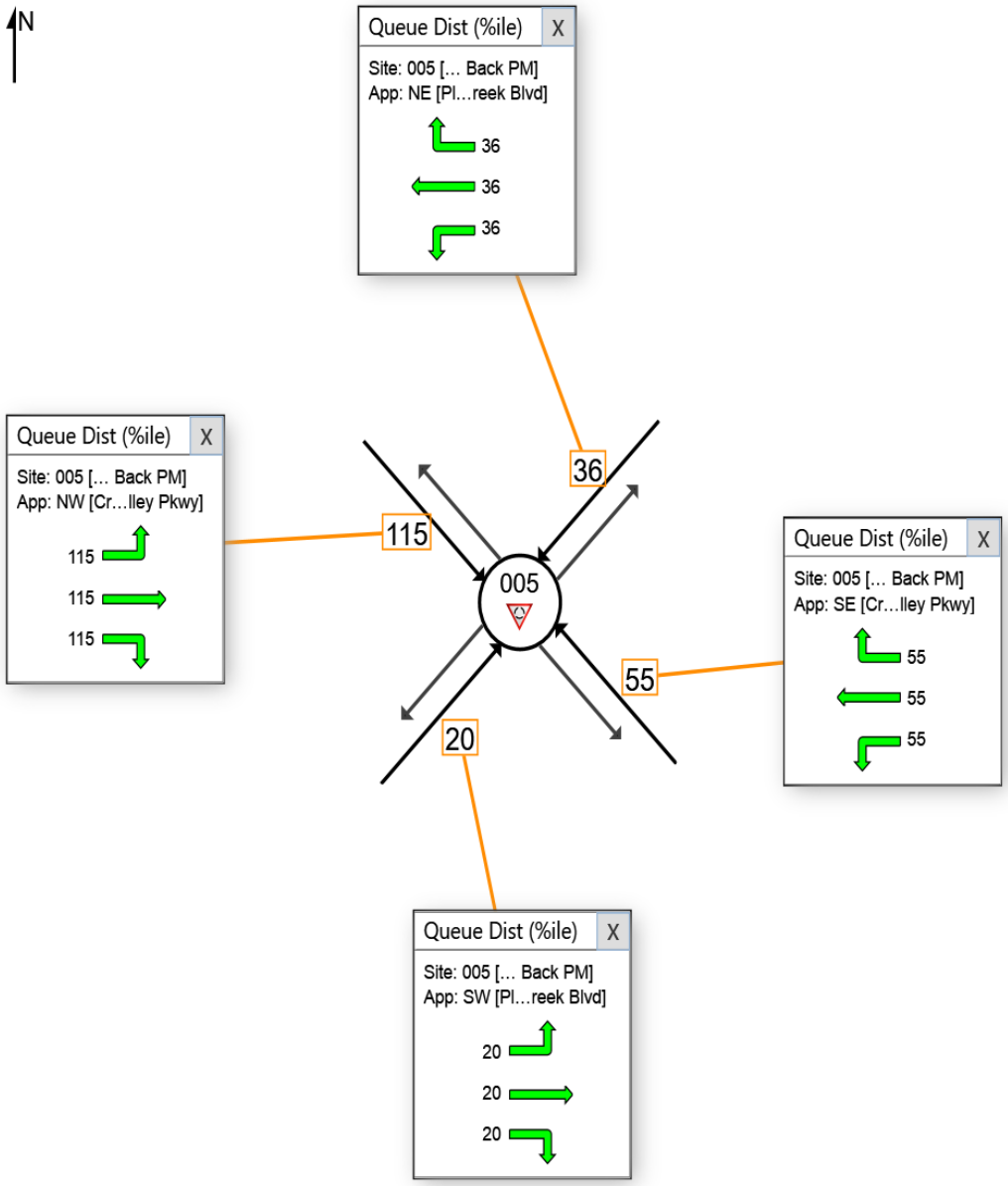
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 005 [Int #5_2040 Back PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

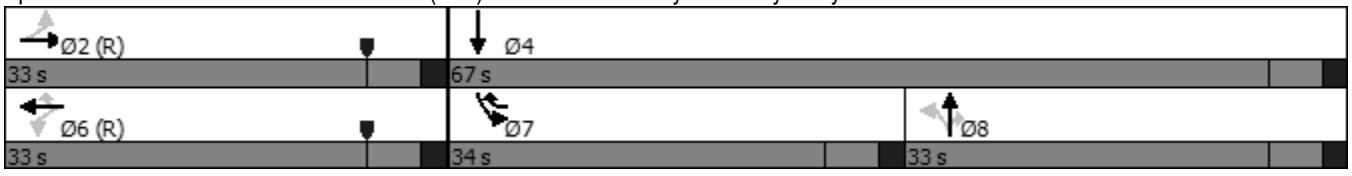
Close All Popups



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	5	5	10	15	240	5	120	35	475	170
Future Volume (vph)	5	5	10	15	240	5	120	35	475	170
Turn Type	Perm	NA	Perm	NA	pm+ov	Perm	NA	Perm	Prot	NA
Protected Phases		2		6	7		8		7	4
Permitted Phases	2		6		6	8		8		
Detector Phase	2	2	6	6	7	8	8	8	7	4
Switch Phase										
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	33.0	33.0	33.0	33.0	11.0	33.0	33.0	33.0	11.0	33.0
Total Split (s)	33.0	33.0	33.0	33.0	34.0	33.0	33.0	33.0	34.0	67.0
Total Split (%)	33.0%	33.0%	33.0%	33.0%	34.0%	33.0%	33.0%	33.0%	34.0%	67.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag					Lead	Lag	Lag	Lag	Lead	
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	Max	Max	Max	None	Max
Act Effct Green (s)	27.0	27.0	27.0	27.0	53.9	34.1	34.1	34.1	20.9	61.0
Actuated g/C Ratio	0.27	0.27	0.27	0.27	0.54	0.34	0.34	0.34	0.21	0.61
v/c Ratio	0.02	0.02	0.03	0.03	0.27	0.01	0.11	0.06	0.72	0.09

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 24.1
Intersection Capacity Utilization 46.5%
Analysis Period (min) 15

Splits and Phases: 7: Dawson Trail Blvd. (new) & Territorial Rd./Crystal Valley Pkwy.





Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	8	8	11	16	261	5	130	38	516	196
v/c Ratio	0.02	0.02	0.03	0.03	0.27	0.01	0.11	0.06	0.72	0.09
Control Delay	27.2	27.0	47.8	47.6	0.7	24.8	24.3	0.2	42.5	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.2	27.0	47.8	47.6	0.7	24.8	24.3	0.2	42.5	7.7
Queue Length 50th (ft)	4	4	7	11	0	2	29	0	158	23
Queue Length 95th (ft)	10	10	m14	m19	2	11	56	0	198	38
Internal Link Dist (ft)		1067		1733			1614			1008
Turn Bay Length (ft)	200		500			500		1000	500	
Base Capacity (vph)	383	503	378	503	1067	400	1208	605	961	2085
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.02	0.03	0.03	0.24	0.01	0.11	0.06	0.54	0.09

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	5	0	10	15	240	5	120	35	475	170	10
Future Volume (veh/h)	5	5	0	10	15	240	5	120	35	475	170	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900	1870	1870	1870	1870	1870	1870	1870	1826	1826
Adj Flow Rate, veh/h	8	8	0	11	16	261	5	130	38	516	185	11
Peak Hour Factor	0.60	0.60	0.60	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	0	2	2	2	2	2	2	2	5	5
Cap, veh/h	367	505	0	448	505	712	512	1317	587	620	2030	120
Arrive On Green	0.27	0.27	0.00	0.27	0.27	0.27	0.37	0.37	0.37	0.18	0.61	0.61
Sat Flow, veh/h	1120	1870	0	1407	1870	1585	1187	3554	1585	3456	3328	197
Grp Volume(v), veh/h	8	8	0	11	16	261	5	130	38	516	96	100
Grp Sat Flow(s),veh/h/ln	1120	1870	0	1407	1870	1585	1187	1777	1585	1728	1735	1791
Q Serve(g_s), s	0.5	0.3	0.0	0.6	0.6	10.9	0.3	2.4	1.5	14.4	2.3	2.3
Cycle Q Clear(g_c), s	1.2	0.3	0.0	0.9	0.6	10.9	0.3	2.4	1.5	14.4	2.3	2.3
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	367	505	0	448	505	712	512	1317	587	620	1058	1092
V/C Ratio(X)	0.02	0.02	0.00	0.02	0.03	0.37	0.01	0.10	0.06	0.83	0.09	0.09
Avail Cap(c_a), veh/h	367	505	0	448	505	712	512	1317	587	968	1058	1092
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.81	0.81	0.81	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.3	26.8	0.0	27.1	26.9	18.1	19.9	20.6	20.3	39.6	8.0	8.1
Incr Delay (d2), s/veh	0.1	0.1	0.0	0.1	0.1	1.2	0.0	0.1	0.2	3.7	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.1	0.0	0.2	0.3	4.1	0.1	1.0	0.6	6.4	0.9	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.4	26.8	0.0	27.2	27.0	19.3	19.9	20.7	20.5	43.3	8.2	8.2
LnGrp LOS	C	C	A	C	C	B	B	C	C	D	A	A
Approach Vol, veh/h		16			288			173			712	
Approach Delay, s/veh		27.1			20.0			20.6			33.6	
Approach LOS		C			C			C			C	

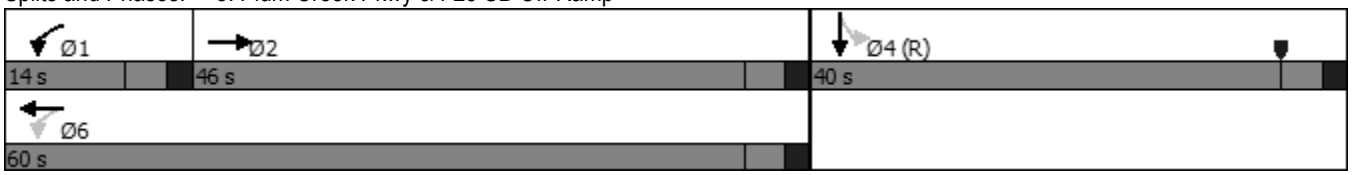
Timer - Assigned Phs		2		4		6	7	8				
Phs Duration (G+Y+Rc), s		33.0		67.0		33.0	23.9	43.1				
Change Period (Y+Rc), s		6.0		6.0		6.0	6.0	6.0				
Max Green Setting (Gmax), s		27.0		61.0		27.0	28.0	27.0				
Max Q Clear Time (g_c+I1), s		3.2		4.3		12.9	16.4	4.4				
Green Ext Time (p_c), s		0.0		1.2		0.8	1.5	0.9				

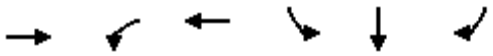
Intersection Summary												
HCM 6th Ctrl Delay			28.4									
HCM 6th LOS			C									

Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	911	155	723	1175	5	491
Future Volume (vph)	911	155	723	1175	5	491
Turn Type	NA	pm+pt	NA	Perm	NA	Free
Protected Phases	2	1	6		4	
Permitted Phases		6		4		Free
Detector Phase	2	1	6	4	4	
Switch Phase						
Minimum Initial (s)	10.0	5.0	10.0	5.0	5.0	
Minimum Split (s)	30.0	10.0	30.0	10.0	10.0	
Total Split (s)	46.0	14.0	60.0	40.0	40.0	
Total Split (%)	46.0%	14.0%	60.0%	40.0%	40.0%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes				
Recall Mode	Max	None	Max	C-Max	C-Max	
Act Effct Green (s)	42.4	56.0	56.0	36.0	36.0	100.0
Actuated g/C Ratio	0.42	0.56	0.56	0.36	0.36	1.00
v/c Ratio	0.57	0.57	0.38	0.71	0.70	0.32

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 40 (40%), Referenced to phase 4:SBTL, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 21.1
Intersection Capacity Utilization 96.7%
Analysis Period (min) 15

Splits and Phases: 8: Plum Creek Pkwy & I-25 SB Off-Ramp





Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1215	161	753	820	409	511
v/c Ratio	0.57	0.57	0.38	0.71	0.70	0.32
Control Delay	26.8	20.0	4.6	31.5	35.3	0.5
Queue Delay	0.0	0.3	0.8	0.8	1.5	0.0
Total Delay	26.8	20.2	5.4	32.4	36.8	0.5
Queue Length 50th (ft)	276	16	24	243	242	0
Queue Length 95th (ft)	324	m52	47	318	367	0
Internal Link Dist (ft)	437		181		388	
Turn Bay Length (ft)						160
Base Capacity (vph)	2136	288	1981	1159	581	1583
Starvation Cap Reductn	0	9	861	0	0	0
Spillback Cap Reductn	2	0	0	123	61	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.58	0.67	0.79	0.79	0.32

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	911	255	155	723	0	0	0	0	1175	5	491
Future Volume (veh/h)	0	911	255	155	723	0	0	0	0	1175	5	491
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	949	266	161	753	0				1228	0	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1762	493	330	1990	0				1924	0	
Arrive On Green	0.00	0.44	0.43	0.05	0.38	0.00				0.36	0.00	0.00
Sat Flow, veh/h	0	4134	1109	1781	3647	0				5344	0	1585
Grp Volume(v), veh/h	0	814	401	161	753	0				1228	0	0
Grp Sat Flow(s),veh/h/ln	0	1702	1671	1781	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	17.5	17.7	4.5	15.4	0.0				19.1	0.0	0.0
Cycle Q Clear(g_c), s	0.0	17.5	17.7	4.5	15.4	0.0				19.1	0.0	0.0
Prop In Lane	0.00		0.66	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1513	742	330	1990	0				1924	0	
V/C Ratio(X)	0.00	0.54	0.54	0.49	0.38	0.00				0.64	0.00	
Avail Cap(c_a), veh/h	0	1513	742	373	1990	0				1924	0	
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.68	0.68	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	20.3	20.6	15.0	18.6	0.0				26.6	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.4	2.8	0.8	0.4	0.0				1.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	7.0	7.3	1.9	6.9	0.0				8.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	21.7	23.4	15.8	18.9	0.0				28.2	0.0	0.0
LnGrp LOS	A	C	C	B	B	A				C	A	
Approach Vol, veh/h		1215			914						1228	A
Approach Delay, s/veh		22.2			18.4						28.2	
Approach LOS		C			B						C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	11.6	48.4		40.0		60.0
Change Period (Y+Rc), s	5.0	5.0		5.0		5.0
Max Green Setting (Gmax), s	9.0	41.0		35.0		55.0
Max Q Clear Time (g_c+I1), s	6.5	19.7		21.1		17.4
Green Ext Time (p_c), s	0.1	8.9		4.6		6.2

Intersection Summary		
HCM 6th Ctrl Delay		23.4
HCM 6th LOS		C

Notes

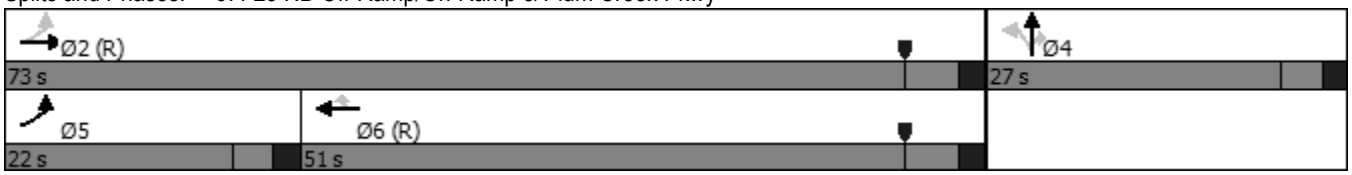
User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	322	1764	733	955	186	5	210
Future Volume (vph)	322	1764	733	955	186	5	210
Turn Type	pm+pt	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6			4	
Permitted Phases	2			6	4		4
Detector Phase	5	2	6	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0	5.0
Minimum Split (s)	10.0	31.0	24.0	24.0	40.0	40.0	40.0
Total Split (s)	22.0	73.0	51.0	51.0	27.0	27.0	27.0
Total Split (%)	22.0%	73.0%	51.0%	51.0%	27.0%	27.0%	27.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-2.0	-2.0	-2.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max
Act Effct Green (s)	69.0	69.0	48.7	48.7	23.0	23.0	23.0
Actuated g/C Ratio	0.69	0.69	0.49	0.49	0.23	0.23	0.23
v/c Ratio	0.84	0.51	0.71	0.57	0.37	0.37	0.32

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 83 (83%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 15.2
Intersection Capacity Utilization 96.7%
Analysis Period (min) 15

Splits and Phases: 9: I-25 NB Off-Ramp/On-Ramp & Plum Creek Pkwy

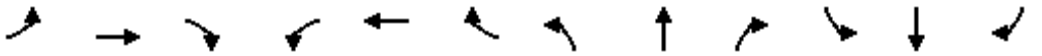




Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	329	1800	1157	565	142	136	131
v/c Ratio	0.84	0.51	0.71	0.57	0.37	0.37	0.32
Control Delay	31.3	5.3	21.2	3.9	35.7	27.8	14.9
Queue Delay	11.7	1.9	0.0	0.0	0.0	0.0	0.0
Total Delay	43.1	7.2	21.2	3.9	35.7	27.8	14.9
Queue Length 50th (ft)	110	103	285	0	81	60	23
Queue Length 95th (ft)	#252	186	372	62	141	121	76
Internal Link Dist (ft)		181	431			480	
Turn Bay Length (ft)					350		150
Base Capacity (vph)	420	3508	1624	991	386	372	412
Starvation Cap Reductn	72	1481	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.89	0.71	0.57	0.37	0.37	0.32

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	322	1764	0	0	733	955	186	5	210	0	0	0
Future Volume (veh/h)	322	1764	0	0	733	955	186	5	210	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	329	1800	0	0	748	974	262	0	140			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	368	3523	0	0	958	1623	819	0	365			
Arrive On Green	0.28	1.00	0.00	0.00	0.51	0.51	0.23	0.00	0.23			
Sat Flow, veh/h	1781	5274	0	0	1870	3170	3563	0	1585			
Grp Volume(v), veh/h	329	1800	0	0	748	974	262	0	140			
Grp Sat Flow(s),veh/h/ln	1781	1702	0	0	1870	1585	1781	0	1585			
Q Serve(g_s), s	10.4	0.0	0.0	0.0	32.5	21.6	6.1	0.0	7.5			
Cycle Q Clear(g_c), s	10.4	0.0	0.0	0.0	32.5	21.6	6.1	0.0	7.5			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	368	3523	0	0	958	1623	819	0	365			
V/C Ratio(X)	0.89	0.51	0.00	0.00	0.78	0.60	0.32	0.00	0.38			
Avail Cap(c_a), veh/h	443	3523	0	0	958	1623	819	0	365			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.74	0.74	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	19.1	0.0	0.0	0.0	19.8	17.2	32.0	0.0	32.5			
Incr Delay (d2), s/veh	14.2	0.4	0.0	0.0	6.3	1.6	1.0	0.0	3.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	4.7	0.1	0.0	0.0	15.0	7.9	2.7	0.0	7.2			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.3	0.4	0.0	0.0	26.1	18.8	33.0	0.0	35.6			
LnGrp LOS	C	A	A	A	C	B	C	A	D			
Approach Vol, veh/h		2129			1722			402				
Approach Delay, s/veh		5.5			22.0			33.9				
Approach LOS		A			C			C				

Timer - Assigned Phs		2		4	5	6			
Phs Duration (G+Y+Rc), s		73.0		27.0	17.8	55.2			
Change Period (Y+Rc), s		6.0		5.0	5.0	6.0			
Max Green Setting (Gmax), s		67.0		22.0	17.0	45.0			
Max Q Clear Time (g_c+I1), s		2.0		9.5	12.4	34.5			
Green Ext Time (p_c), s		25.0		1.1	0.4	6.7			

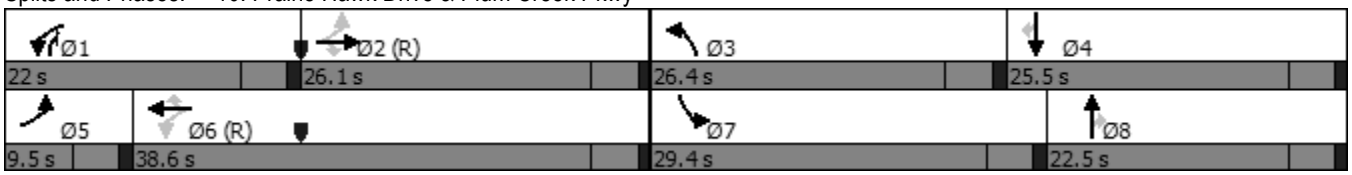
Intersection Summary		
HCM 6th Ctrl Delay	14.9	
HCM 6th LOS	B	

Notes
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	571	110	208	929	98	105	110	110	270	170	38
Future Volume (vph)	37	571	110	208	929	98	105	110	110	270	170	38
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases	2		2	6		6			8			4
Detector Phase	5	2	2	1	6	6	3	8	1	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	9.5	9.5	22.5	22.5
Total Split (s)	9.5	26.1	26.1	22.0	38.6	38.6	26.4	22.5	22.0	29.4	25.5	25.5
Total Split (%)	9.5%	26.1%	26.1%	22.0%	38.6%	38.6%	26.4%	22.5%	22.0%	29.4%	25.5%	25.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	Max	Max
Act Effct Green (s)	31.6	26.1	26.1	44.1	38.4	38.4	12.2	24.2	40.1	21.8	31.7	31.7
Actuated g/C Ratio	0.32	0.26	0.26	0.44	0.38	0.38	0.12	0.24	0.40	0.22	0.32	0.32
v/c Ratio	0.23	0.67	0.23	0.65	0.74	0.16	0.53	0.14	0.17	0.39	0.17	0.07

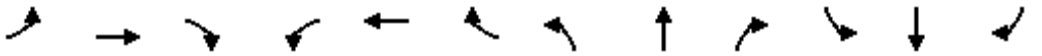
Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 27.6
Intersection Capacity Utilization 55.0%
Analysis Period (min) 15

Splits and Phases: 10: Prairie Hawk Drive & Plum Creek Pkwy



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	40	621	120	226	1010	107	114	120	120	293	185	41
v/c Ratio	0.23	0.67	0.23	0.65	0.74	0.16	0.53	0.14	0.17	0.39	0.17	0.07
Control Delay	20.7	38.2	3.1	22.8	26.7	2.6	49.3	28.5	3.3	38.2	26.1	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.7	38.2	3.1	22.8	26.7	2.6	49.3	28.5	3.3	38.2	26.1	0.2
Queue Length 50th (ft)	14	187	0	73	322	10	69	29	0	91	44	0
Queue Length 95th (ft)	34	263	21	126	407	25	119	54	29	128	76	0
Internal Link Dist (ft)		832			922			624			893	
Turn Bay Length (ft)	230		230	230		230	230		230	230		250
Base Capacity (vph)	174	923	533	406	1358	678	396	941	765	1026	1120	613
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.67	0.23	0.56	0.74	0.16	0.29	0.13	0.16	0.29	0.17	0.07

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	571	110	208	929	98	105	110	110	270	170	38
Future Volume (veh/h)	37	571	110	208	929	98	105	110	110	270	170	38
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	40	621	120	226	1010	0	114	120	120	293	185	41
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	309	1585	707	474	1778		153	659	441	399	764	341
Arrive On Green	0.04	0.45	0.45	0.09	0.50	0.00	0.09	0.19	0.19	0.12	0.22	0.22
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	40	621	120	226	1010	0	114	120	120	293	185	41
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1777	1585	1728	1777	1585
Q Serve(g_s), s	1.2	11.7	4.5	6.4	19.8	0.0	6.2	2.8	5.9	8.2	4.3	2.1
Cycle Q Clear(g_c), s	1.2	11.7	4.5	6.4	19.8	0.0	6.2	2.8	5.9	8.2	4.3	2.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	309	1585	707	474	1778		153	659	441	399	764	341
V/C Ratio(X)	0.13	0.39	0.17	0.48	0.57		0.74	0.18	0.27	0.73	0.24	0.12
Avail Cap(c_a), veh/h	339	1585	707	629	1778		399	659	441	878	764	341
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.7	18.6	16.6	12.5	17.4	0.0	44.6	34.3	28.2	42.7	32.5	31.6
Incr Delay (d2), s/veh	0.2	0.7	0.5	0.7	1.3	0.0	7.0	0.1	0.3	2.6	0.8	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	4.6	1.7	2.3	7.6	0.0	3.0	1.2	2.2	3.6	1.9	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.9	19.3	17.1	13.3	18.8	0.0	51.6	34.5	28.5	45.4	33.3	32.4
LnGrp LOS	B	B	B	B	B		D	C	C	D	C	C
Approach Vol, veh/h		781			1236	A		354			519	
Approach Delay, s/veh		18.8			17.7			37.9			40.0	
Approach LOS		B			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.3	48.6	12.6	25.5	7.9	54.0	15.5	22.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	17.5	21.6	21.9	21.0	5.0	34.1	24.9	18.0
Max Q Clear Time (g_c+I1), s	8.4	13.7	8.2	6.3	3.2	21.8	10.2	7.9
Green Ext Time (p_c), s	0.4	2.6	0.2	1.0	0.0	5.2	0.9	0.7

Intersection Summary	
HCM 6th Ctrl Delay	24.5
HCM 6th LOS	C

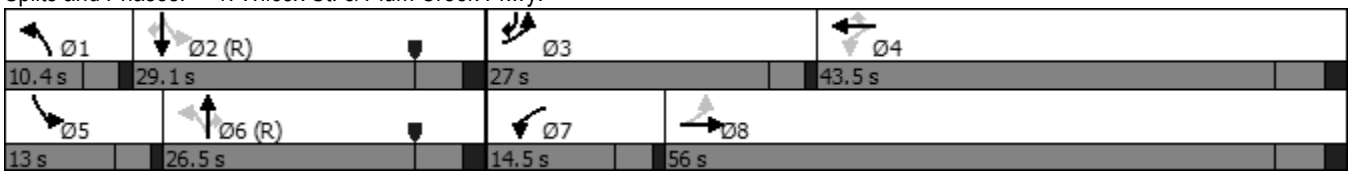
Notes

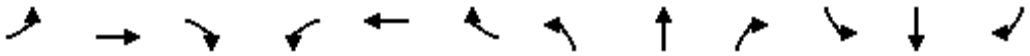
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	350	1385	330	85	995	185	280	175	80	185	225	295
Future Volume (vph)	350	1385	330	85	995	185	280	175	80	185	225	295
Turn Type	pm+pt	NA	Free	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+ov
Protected Phases	3	8		7	4		1	6		5	2	3
Permitted Phases	8		Free	4		4	6		6	2		2
Detector Phase	3	8		7	4	4	1	6	6	5	2	3
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	5.0	10.0	10.0	5.0	4.0	5.0
Minimum Split (s)	9.5	31.0		14.5	31.0	31.0	9.5	16.0	16.0	9.5	10.0	9.5
Total Split (s)	27.0	56.0		14.5	43.5	43.5	10.4	26.5	26.5	13.0	29.1	27.0
Total Split (%)	24.5%	50.9%		13.2%	39.5%	39.5%	9.5%	24.1%	24.1%	11.8%	26.5%	24.5%
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	3.0
All-Red Time (s)	1.0	2.0		1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	None
Act Effct Green (s)	64.2	51.0	110.0	49.6	37.6	37.6	31.6	23.0	23.0	35.9	25.2	51.8
Actuated g/C Ratio	0.58	0.46	1.00	0.45	0.34	0.34	0.29	0.21	0.21	0.33	0.23	0.47
v/c Ratio	0.92	0.89	0.22	0.40	0.89	0.30	0.53	0.49	0.20	0.57	0.58	0.41

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 35 (32%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 32.0
Intersection Capacity Utilization 98.8%
Analysis Period (min) 15

Splits and Phases: 1: Wilcox St. & Plum Creek Pkwy.





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	368	1458	347	92	1082	201	304	190	87	201	245	321
v/c Ratio	0.92	0.89	0.22	0.40	0.89	0.30	0.53	0.49	0.20	0.57	0.58	0.41
Control Delay	57.7	35.2	0.3	19.8	35.7	6.6	32.2	44.8	1.5	35.5	44.9	16.6
Queue Delay	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.7	35.2	0.3	19.8	35.9	6.6	32.2	44.8	1.5	35.5	44.9	16.6
Queue Length 50th (ft)	195	485	0	23	217	4	81	123	0	108	159	110
Queue Length 95th (ft)	#353	#601	0	m47	#419	m26	118	198	5	173	245	182
Internal Link Dist (ft)		553			473			812			658	
Turn Bay Length (ft)	280		250	185			190		195	130		130
Base Capacity (vph)	435	1641	1583	240	1243	670	578	386	441	359	426	814
Starvation Cap Reductn	0	0	0	0	12	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.89	0.22	0.38	0.88	0.30	0.53	0.49	0.20	0.56	0.58	0.39

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	350	1385	330	85	995	185	280	175	80	185	225	295
Future Volume (veh/h)	350	1385	330	85	995	185	280	175	80	185	225	295
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1885	1885	1885	1856	1856	1856	1870	1870	1870
Adj Flow Rate, veh/h	368	1458	0	92	1082	201	304	190	87	201	245	321
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	1	1	1	3	3	3	2	2	2
Cap, veh/h	407	1572		239	1394	621	520	387	327	342	435	587
Arrive On Green	0.14	0.44	0.00	0.17	0.78	0.78	0.06	0.21	0.21	0.08	0.23	0.23
Sat Flow, veh/h	1781	3554	1585	1795	3582	1596	3428	1856	1568	1781	1870	1581
Grp Volume(v), veh/h	368	1458	0	92	1082	201	304	190	87	201	245	321
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1795	1791	1596	1714	1856	1568	1781	1870	1581
Q Serve(g_s), s	13.0	42.7	0.0	3.0	18.6	4.1	6.4	9.9	5.1	9.0	12.7	17.6
Cycle Q Clear(g_c), s	13.0	42.7	0.0	3.0	18.6	4.1	6.4	9.9	5.1	9.0	12.7	17.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	407	1572		239	1394	621	520	387	327	342	435	587
V/C Ratio(X)	0.90	0.93		0.39	0.78	0.32	0.58	0.49	0.27	0.59	0.56	0.55
Avail Cap(c_a), veh/h	533	1615		257	1394	621	520	387	327	342	435	587
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.66	0.66	0.66	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.3	29.0	0.0	21.4	9.5	7.9	34.8	38.4	36.5	32.1	37.3	27.3
Incr Delay (d2), s/veh	13.7	9.6	0.0	0.2	1.9	0.2	1.1	4.4	2.0	1.8	5.2	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	19.3	0.0	1.1	3.8	1.2	0.9	5.0	2.1	4.4	6.5	7.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.0	38.6	0.0	21.6	11.4	8.1	36.0	42.8	38.4	34.0	42.5	30.9
LnGrp LOS	C	D		C	B	A	D	D	D	C	D	C
Approach Vol, veh/h		1826	A		1375			581			767	
Approach Delay, s/veh		37.7			11.6			38.6			35.4	
Approach LOS		D			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.4	31.6	19.2	48.8	13.0	29.0	13.4	54.6
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	6.4	23.1	23.0	37.5	9.0	20.5	10.5	50.0
Max Q Clear Time (g_c+I1), s	8.4	19.6	15.0	20.6	11.0	11.9	5.0	44.7
Green Ext Time (p_c), s	0.0	1.2	0.2	7.7	0.0	1.2	0.0	4.0

Intersection Summary	
HCM 6th Ctrl Delay	29.5
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

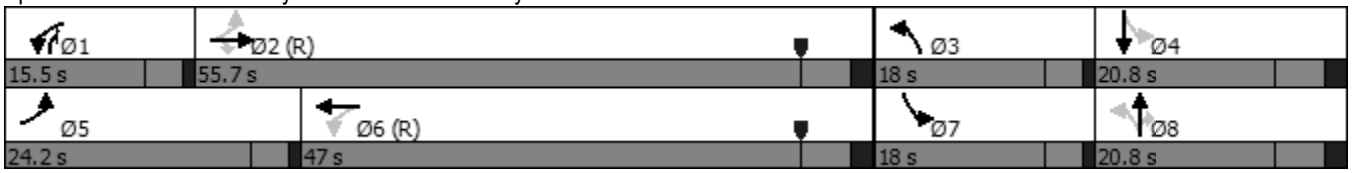
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Twin Mesa Metropolitan District New Service Plan
SV2023-003
Planning Commission Supplemental Memo Page 483 of 1222

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	300	1200	175	175	880	230	135	170	220	140	235
Future Volume (vph)	300	1200	175	175	880	230	135	170	220	140	235
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	pm+ov	pm+pt	NA	Free
Protected Phases	5	2		1	6	3	8	1	7	4	
Permitted Phases	2		2	6		8		8	4		Free
Detector Phase	5	2	2	1	6	3	8	1	7	4	
Switch Phase											
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0	3.0	5.0	3.0	3.0	5.0	
Minimum Split (s)	9.5	32.0	32.0	9.5	32.0	9.5	11.0	9.5	9.5	11.0	
Total Split (s)	24.2	55.7	55.7	15.5	47.0	18.0	20.8	15.5	18.0	20.8	
Total Split (%)	22.0%	50.6%	50.6%	14.1%	42.7%	16.4%	18.9%	14.1%	16.4%	18.9%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.0	3.0	3.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	1.0	2.0	1.0	1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	4.0	4.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None	None	
Act Effct Green (s)	69.9	54.7	54.7	59.1	47.7	28.2	12.9	24.2	27.6	12.5	110.0
Actuated g/C Ratio	0.64	0.50	0.50	0.54	0.43	0.26	0.12	0.22	0.25	0.11	1.00
v/c Ratio	0.88	0.69	0.22	0.69	0.79	0.73	0.67	0.43	0.67	0.69	0.15

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 26.5
Intersection Capacity Utilization 85.7%
Analysis Period (min) 15

Splits and Phases: 2: Perry St. & Plum Creek Pkwy.



Twin Mesa Metropolitan District New Service Plan
SV2023-003
Planning Commission Supplemental Memo Page 484 of 1222



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	306	1224	179	190	1202	250	147	185	234	149	250
v/c Ratio	0.88	0.69	0.22	0.69	0.79	0.73	0.67	0.43	0.67	0.69	0.15
Control Delay	64.8	10.7	2.3	29.6	26.9	45.4	61.5	16.6	41.7	63.2	0.2
Queue Delay	0.0	0.3	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.8	11.0	2.3	29.6	27.1	45.4	61.5	16.6	41.7	63.2	0.2
Queue Length 50th (ft)	178	93	2	38	420	142	100	41	132	102	0
Queue Length 95th (ft)	m218	m138	m4	m112	#559	216	166	99	201	169	0
Internal Link Dist (ft)		473			1330		455			497	
Turn Bay Length (ft)	170		70	100		185		65	120		120
Base Capacity (vph)	404	1777	830	309	1514	353	253	462	366	255	1615
Starvation Cap Reductn	0	144	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	35	0	0	0	0	0	16
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.75	0.22	0.61	0.81	0.71	0.58	0.40	0.64	0.58	0.16

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	300	1200	175	175	880	225	230	135	170	220	140	235
Future Volume (veh/h)	300	1200	175	175	880	225	230	135	170	220	140	235
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	306	1224	179	190	957	245	250	147	185	234	149	0
Peak Hour Factor	0.98	0.98	0.98	0.92	0.92	0.92	0.92	0.92	0.92	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	0	0	0
Cap, veh/h	433	1750	779	378	1274	325	358	237	322	351	239	
Arrive On Green	0.23	0.98	0.98	0.15	0.90	0.90	0.13	0.13	0.13	0.13	0.13	0.00
Sat Flow, veh/h	1795	3582	1594	1795	2823	721	1795	1885	1586	1810	1900	1610
Grp Volume(v), veh/h	306	1224	179	190	606	596	250	147	185	234	149	0
Grp Sat Flow(s),veh/h/ln	1795	1791	1594	1795	1791	1754	1795	1885	1586	1810	1900	1610
Q Serve(g_s), s	10.3	2.7	0.4	6.4	11.2	11.3	13.3	8.1	11.6	12.2	8.2	0.0
Cycle Q Clear(g_c), s	10.3	2.7	0.4	6.4	11.2	11.3	13.3	8.1	11.6	12.2	8.2	0.0
Prop In Lane	1.00		1.00	1.00		0.41	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	433	1750	779	378	808	792	358	237	322	351	239	
V/C Ratio(X)	0.71	0.70	0.23	0.50	0.75	0.75	0.70	0.62	0.58	0.67	0.62	
Avail Cap(c_a), veh/h	558	1750	779	428	808	792	358	254	336	351	256	
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.47	0.47	0.47	0.82	0.82	0.82	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	11.8	0.7	0.6	12.6	3.5	3.5	36.0	45.6	39.6	35.6	45.6	0.0
Incr Delay (d2), s/veh	0.8	1.1	0.3	0.3	5.2	5.4	5.0	3.6	1.8	3.9	3.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	0.6	0.2	2.2	2.7	2.7	6.2	4.0	4.6	5.7	4.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.6	1.8	1.0	12.9	8.7	8.9	41.0	49.2	41.5	39.5	49.3	0.0
LnGrp LOS	B	A	A	B	A	A	D	D	D	D	D	
Approach Vol, veh/h		1709			1392			582			383	A
Approach Delay, s/veh		3.6			9.4			43.2			43.3	
Approach LOS		A			A			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.4	59.7	18.0	19.8	16.5	55.7	18.0	19.8
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	11.5	49.7	14.0	14.8	20.2	41.0	14.0	14.8
Max Q Clear Time (g_c+I1), s	8.4	4.7	15.3	10.2	12.3	13.3	14.2	13.6
Green Ext Time (p_c), s	0.1	13.0	0.0	0.2	0.2	9.4	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	15.0
HCM 6th LOS	B

Notes

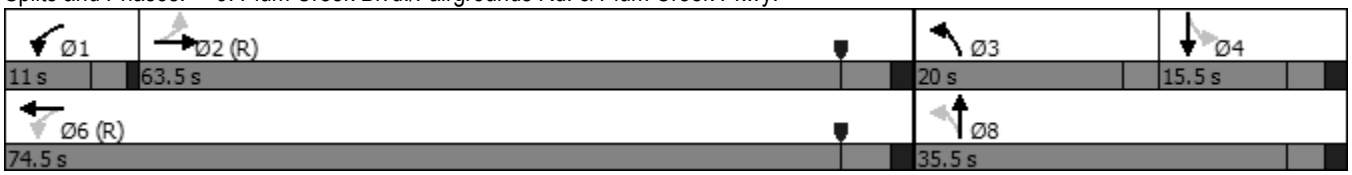
User approved pedestrian interval to be less than phase max green.

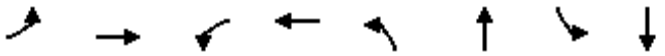
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	105	1110	45	905	325	0	5	5
Future Volume (vph)	105	1110	45	905	325	0	5	5
Turn Type	Perm	NA	pm+pt	NA	pm+pt	NA	Perm	NA
Protected Phases		2	1	6	3	8		4
Permitted Phases	2		6		8		4	
Detector Phase	2	2	1	6	3	8	4	4
Switch Phase								
Minimum Initial (s)	10.0	10.0	5.0	10.0	5.0	5.0	2.0	2.0
Minimum Split (s)	33.0	33.0	9.5	28.0	14.5	10.0	7.0	7.0
Total Split (s)	63.5	63.5	11.0	74.5	20.0	35.5	15.5	15.5
Total Split (%)	57.7%	57.7%	10.0%	67.7%	18.2%	32.3%	14.1%	14.1%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	1.0	2.0	0.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	6.0	3.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead		Lead		Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes		Yes		Yes	Yes
Recall Mode	C-Max	C-Max	None	C-Max	None	Max	Max	Max
Act Effct Green (s)	60.0	60.0	70.5	68.5	32.5	30.5	10.6	10.6
Actuated g/C Ratio	0.55	0.55	0.64	0.62	0.30	0.28	0.10	0.10
v/c Ratio	0.40	0.85	0.28	0.44	0.83	0.09	0.04	0.27

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 23.8
Intersection Capacity Utilization 83.9%
Analysis Period (min) 15

Splits and Phases: 3: Plum Creek Blvd./Fairgrounds Rd. & Plum Creek Pkwy.





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	114	1609	49	989	353	49	5	54
v/c Ratio	0.40	0.85	0.28	0.44	0.83	0.09	0.04	0.27
Control Delay	23.6	26.1	11.4	11.6	52.7	0.3	46.0	18.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.6	26.1	11.4	11.6	52.7	0.3	46.0	18.8
Queue Length 50th (ft)	50	379	12	177	219	0	3	3
Queue Length 95th (ft)	m80	441	26	222	#373	0	15	42
Internal Link Dist (ft)		1330		637		613		434
Turn Bay Length (ft)	70		55				110	
Base Capacity (vph)	288	1892	182	2223	425	553	133	203
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.85	0.27	0.44	0.83	0.09	0.04	0.27

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	1110	370	45	905	5	325	0	45	5	5	45
Future Volume (veh/h)	105	1110	370	45	905	5	325	0	45	5	5	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	114	1207	402	49	984	5	353	0	49	5	5	49
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	0	0	0
Cap, veh/h	343	1463	475	200	2276	12	430	0	442	197	14	141
Arrive On Green	0.73	0.73	0.73	0.04	0.62	0.62	0.15	0.00	0.28	0.10	0.10	0.10
Sat Flow, veh/h	573	2655	863	1795	3654	19	1795	0	1596	1374	151	1478
Grp Volume(v), veh/h	114	805	804	49	482	507	353	0	49	5	0	54
Grp Sat Flow(s),veh/h/ln	573	1791	1726	1795	1791	1882	1795	0	1596	1374	0	1629
Q Serve(g_s), s	10.6	32.8	36.0	1.2	15.3	15.3	17.0	0.0	2.5	0.4	0.0	3.4
Cycle Q Clear(g_c), s	18.0	32.8	36.0	1.2	15.3	15.3	17.0	0.0	2.5	0.4	0.0	3.4
Prop In Lane	1.00		0.50	1.00		0.01	1.00		1.00	1.00		0.91
Lane Grp Cap(c), veh/h	343	987	951	200	1115	1172	430	0	442	197	0	155
V/C Ratio(X)	0.33	0.82	0.85	0.25	0.43	0.43	0.82	0.00	0.11	0.03	0.00	0.35
Avail Cap(c_a), veh/h	343	987	951	251	1115	1172	430	0	442	197	0	155
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.71	0.71	0.71	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.8	11.0	11.4	16.6	10.7	10.7	37.6	0.0	29.6	45.2	0.0	46.5
Incr Delay (d2), s/veh	1.8	5.4	6.7	0.6	1.2	1.2	11.2	0.0	0.5	0.2	0.0	6.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	9.5	10.3	0.5	5.9	6.2	2.1	0.0	1.0	0.1	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.6	16.3	18.1	17.2	11.9	11.9	48.8	0.0	30.1	45.4	0.0	52.6
LnGrp LOS	B	B	B	B	B	B	D	A	C	D	A	D
Approach Vol, veh/h		1723			1038			402			59	
Approach Delay, s/veh		16.9			12.2			46.6			52.0	
Approach LOS		B			B			D			D	

Timer - Assigned Phs	1	2	3	4		6		8				
Phs Duration (G+Y+Rc), s	7.9	66.6	20.0	15.5		74.5		35.5				
Change Period (Y+Rc), s	4.0	6.0	3.0	5.0		6.0		5.0				
Max Green Setting (Gmax), s	7.0	57.5	17.0	10.5		68.5		30.5				
Max Q Clear Time (g_c+I1), s	3.2	38.0	19.0	5.4		17.3		4.5				
Green Ext Time (p_c), s	0.0	12.7	0.0	0.1		7.6		0.1				

Intersection Summary	
HCM 6th Ctrl Delay	19.7
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

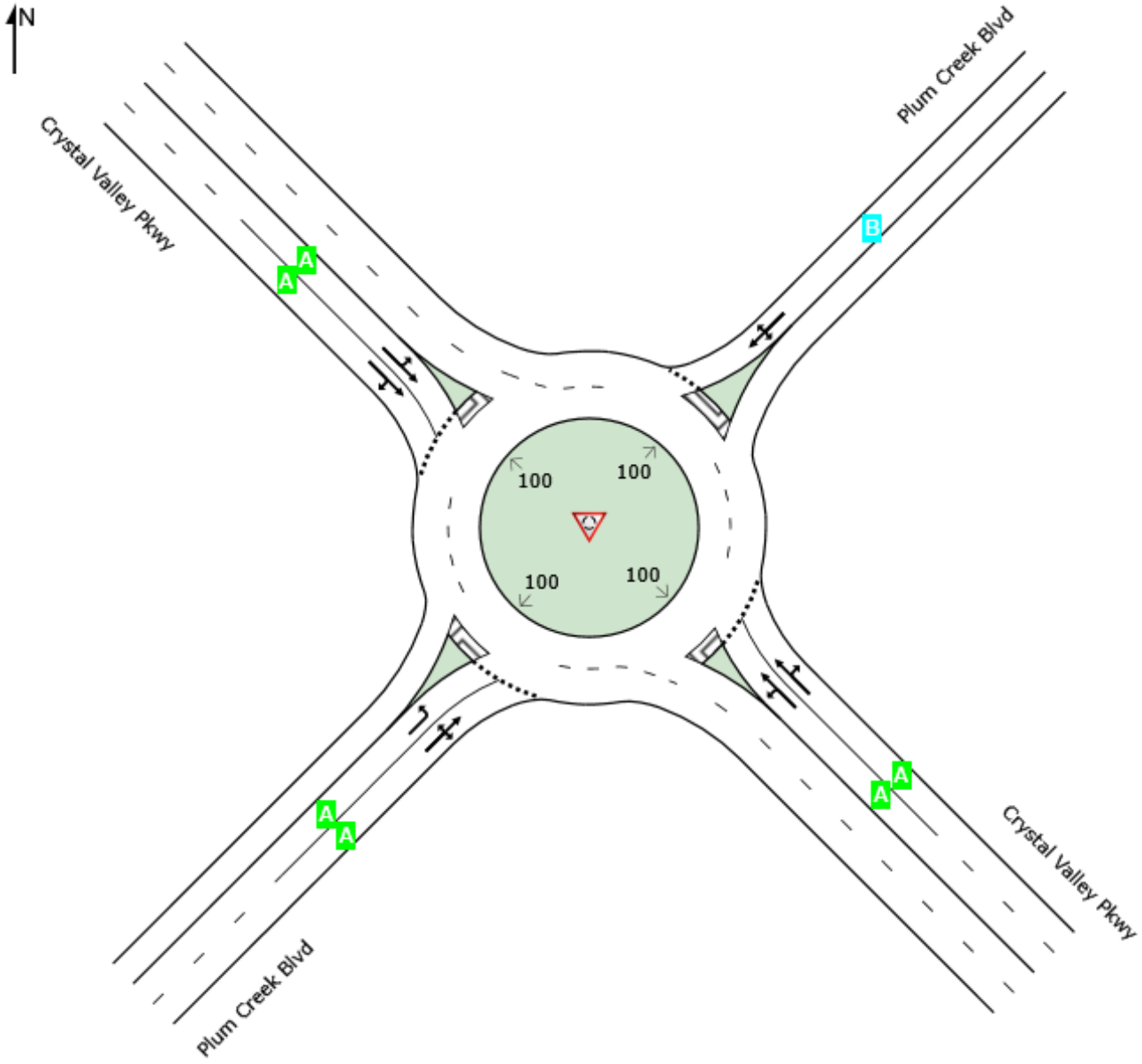
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 005 [Int #5_2040 Back SAT (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
LOS	A	B	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 7:02:43 AM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #5.sip9

DELAY (CONTROL)

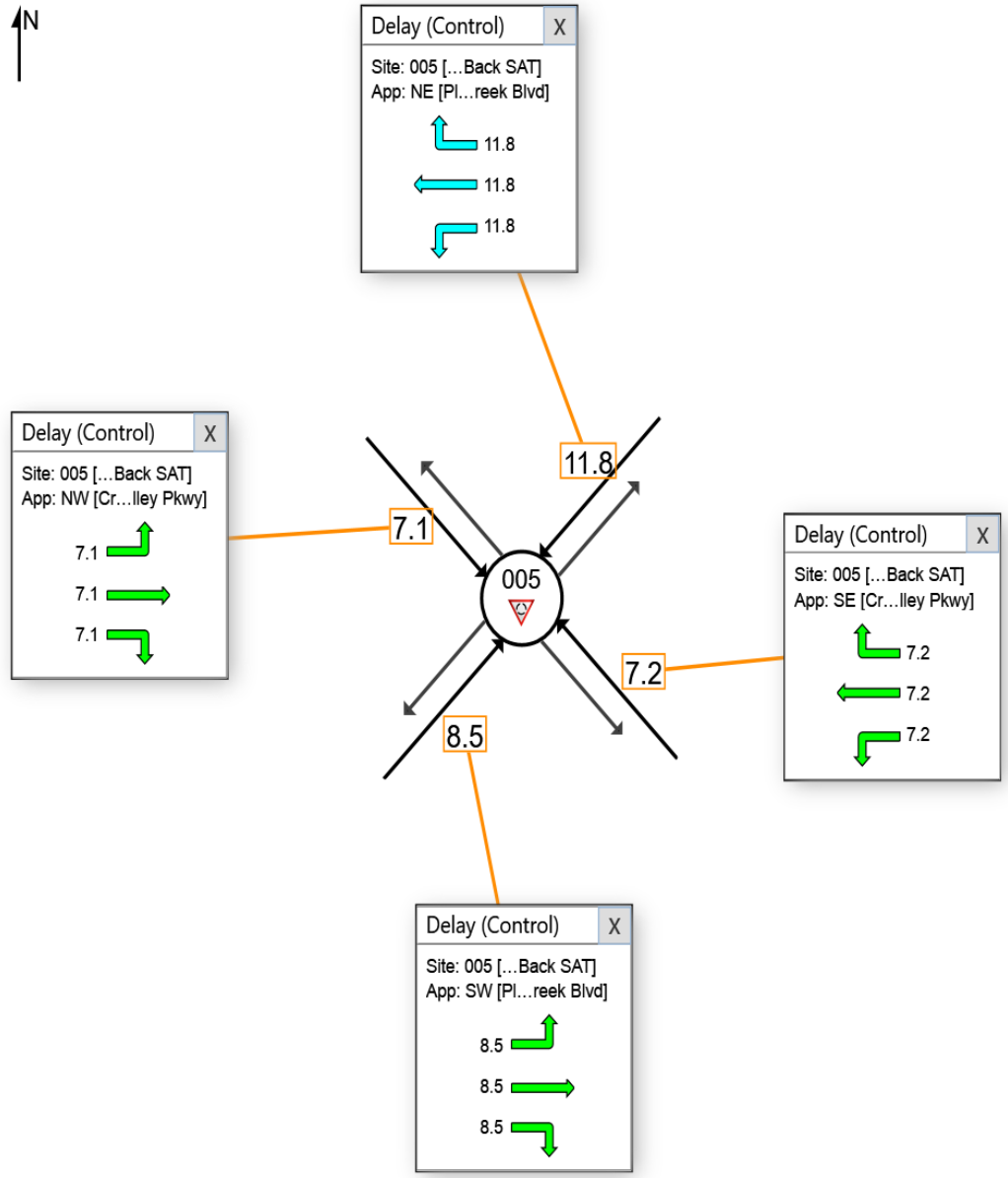
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 005 [Int #5_2040 Back SAT (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

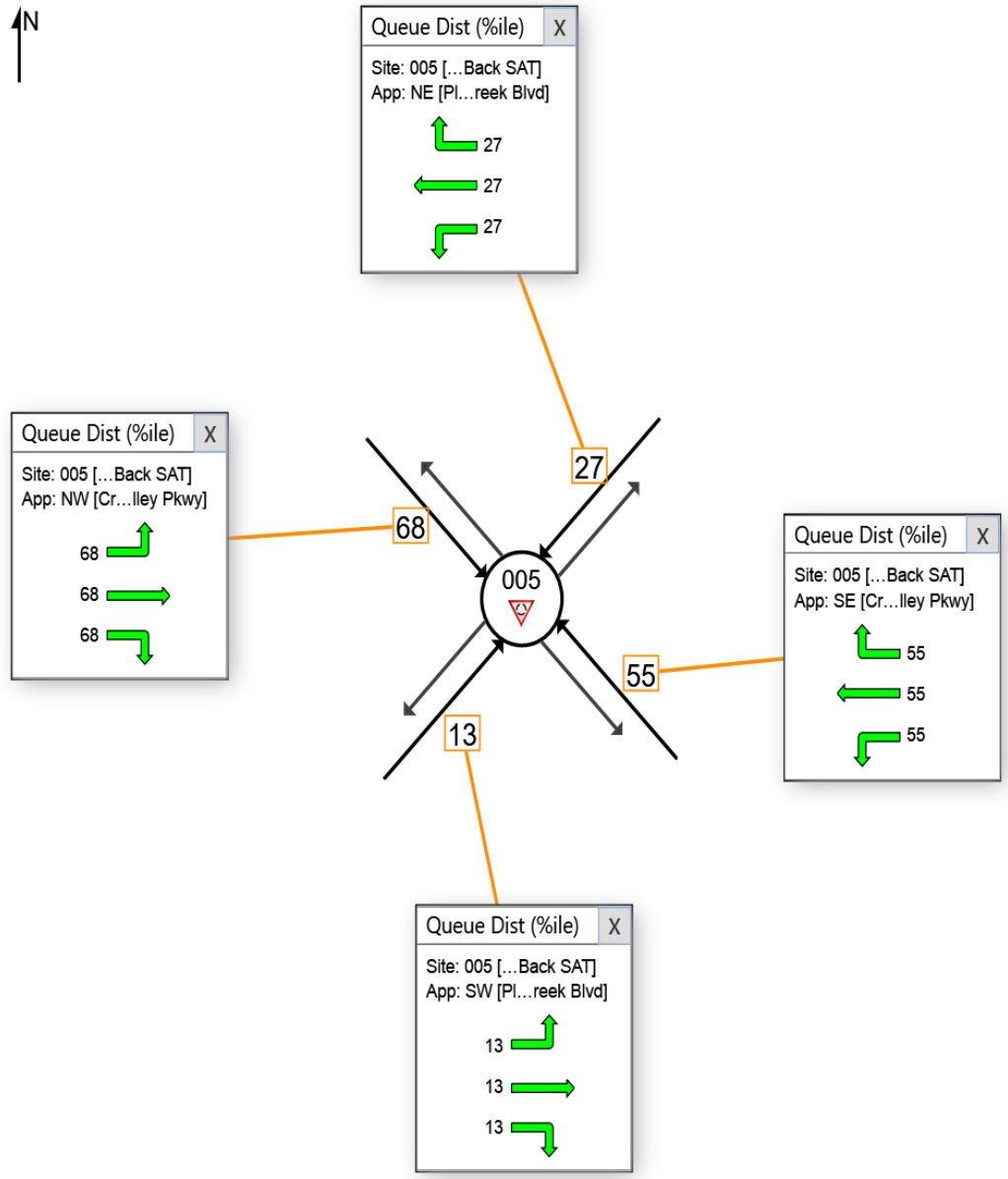
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 005 [Int #5_2040 Back SAT (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

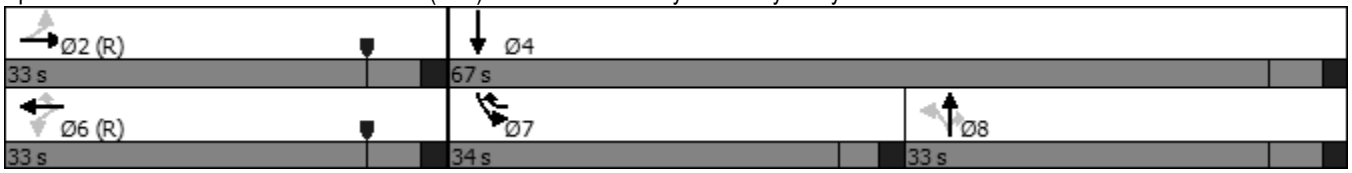
Close All Popups



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	5	5	10	15	285	1	160	55	400	510
Future Volume (vph)	5	5	10	15	285	1	160	55	400	510
Turn Type	Perm	NA	Perm	NA	pm+ov	Perm	NA	Perm	Prot	NA
Protected Phases		2		6	7		8		7	4
Permitted Phases	2		6		6	8		8		
Detector Phase	2	2	6	6	7	8	8	8	7	4
Switch Phase										
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	33.0	33.0	33.0	33.0	11.0	33.0	33.0	33.0	11.0	33.0
Total Split (s)	33.0	33.0	33.0	33.0	34.0	33.0	33.0	33.0	34.0	67.0
Total Split (%)	33.0%	33.0%	33.0%	33.0%	34.0%	33.0%	33.0%	33.0%	34.0%	67.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	4.0	4.0	4.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	5.0	6.0	6.0	6.0	5.0	6.0
Lead/Lag					Lead	Lag	Lag	Lag	Lead	
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	Max	Max	Max	None	Max
Act Effct Green (s)	27.0	27.0	27.0	27.0	51.6	37.4	37.4	37.4	18.6	61.0
Actuated g/C Ratio	0.27	0.27	0.27	0.27	0.52	0.37	0.37	0.37	0.19	0.61
v/c Ratio	0.02	0.02	0.03	0.03	0.32	0.00	0.13	0.09	0.68	0.27

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 19.0
Intersection Capacity Utilization 48.5%
Analysis Period (min) 15

Splits and Phases: 7: Dawson Trail Blvd. (new) & Territorial Rd./Crystal Valley Pkwy.





Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	7	10	11	16	310	1	174	60	435	565
v/c Ratio	0.02	0.02	0.03	0.03	0.32	0.00	0.13	0.09	0.68	0.27
Control Delay	27.2	23.2	49.0	49.3	1.0	23.0	22.1	2.9	43.2	9.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.2	23.2	49.0	49.3	1.0	23.0	22.1	2.9	43.2	9.4
Queue Length 50th (ft)	3	3	7	10	0	0	37	0	134	81
Queue Length 95th (ft)	12	13	m15	m22	0	4	67	15	173	109
Internal Link Dist (ft)		1067		1733			1614			1008
Turn Bay Length (ft)	200		500			500		1000	500	
Base Capacity (vph)	383	485	377	503	1099	306	1323	646	995	2092
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.02	0.03	0.03	0.28	0.00	0.13	0.09	0.44	0.27

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	5	2	10	15	285	1	160	55	400	510	10
Future Volume (veh/h)	5	5	2	10	15	285	1	160	55	400	510	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900	1870	1870	1870	1870	1870	1870	1870	1826	1826
Adj Flow Rate, veh/h	7	7	3	11	16	310	1	174	60	435	554	11
Peak Hour Factor	0.75	0.75	0.75	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	0	2	2	2	2	2	2	2	5	5
Cap, veh/h	354	335	144	445	505	674	414	1437	641	537	2122	42
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.40	0.40	0.40	0.16	0.61	0.61
Sat Flow, veh/h	1071	1242	532	1405	1870	1585	846	3554	1585	3456	3479	69
Grp Volume(v), veh/h	7	0	10	11	16	310	1	174	60	435	276	289
Grp Sat Flow(s),veh/h/ln	1071	0	1775	1405	1870	1585	846	1777	1585	1728	1735	1813
Q Serve(g_s), s	0.5	0.0	0.4	0.6	0.6	14.0	0.1	3.1	2.3	12.2	7.4	7.4
Cycle Q Clear(g_c), s	1.1	0.0	0.4	1.0	0.6	14.0	0.1	3.1	2.3	12.2	7.4	7.4
Prop In Lane	1.00		0.30	1.00		1.00	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	354	0	479	445	505	674	414	1437	641	537	1058	1106
V/C Ratio(X)	0.02	0.00	0.02	0.02	0.03	0.46	0.00	0.12	0.09	0.81	0.26	0.26
Avail Cap(c_a), veh/h	354	0	479	445	505	674	414	1437	641	1002	1058	1106
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.85	0.85	0.85	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.3	0.0	26.8	27.2	26.9	20.5	17.8	18.6	18.4	40.8	9.0	9.0
Incr Delay (d2), s/veh	0.1	0.0	0.1	0.1	0.1	1.9	0.0	0.2	0.3	3.0	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.2	0.2	0.3	5.4	0.0	1.3	0.9	5.3	2.8	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.4	0.0	26.9	27.2	27.0	22.4	17.8	18.8	18.7	43.8	9.6	9.6
LnGrp LOS	C	A	C	C	C	C	B	B	B	D	A	A
Approach Vol, veh/h		17			337			235			1000	
Approach Delay, s/veh		27.1			22.8			18.8			24.5	
Approach LOS		C			C			B			C	

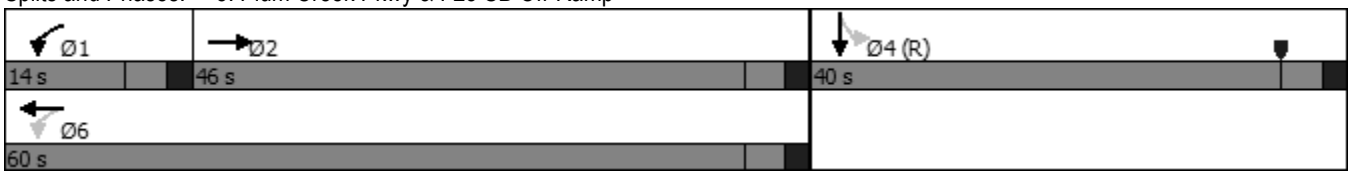
Timer - Assigned Phs		2		4		6	7	8				
Phs Duration (G+Y+Rc), s		33.0		67.0		33.0	20.6	46.4				
Change Period (Y+Rc), s		6.0		6.0		6.0	5.0	6.0				
Max Green Setting (Gmax), s		27.0		61.0		27.0	29.0	27.0				
Max Q Clear Time (g_c+I1), s		3.1		9.4		16.0	14.2	5.1				
Green Ext Time (p_c), s		0.0		3.9		0.9	1.4	1.2				

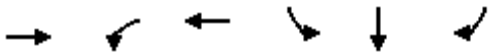
Intersection Summary												
HCM 6th Ctrl Delay			23.3									
HCM 6th LOS			C									

Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	730	145	665	590	5	370
Future Volume (vph)	730	145	665	590	5	370
Turn Type	NA	pm+pt	NA	Perm	NA	Free
Protected Phases	2	1	6		4	
Permitted Phases		6		4		Free
Detector Phase	2	1	6	4	4	
Switch Phase						
Minimum Initial (s)	10.0	5.0	10.0	5.0	5.0	
Minimum Split (s)	30.0	10.0	30.0	10.0	10.0	
Total Split (s)	46.0	14.0	60.0	40.0	40.0	
Total Split (%)	46.0%	14.0%	60.0%	40.0%	40.0%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes				
Recall Mode	Max	None	Max	C-Max	C-Max	
Act Effct Green (s)	42.5	56.0	56.0	36.0	36.0	100.0
Actuated g/C Ratio	0.42	0.56	0.56	0.36	0.36	1.00
v/c Ratio	0.43	0.43	0.35	0.36	0.36	0.24

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 40 (40%), Referenced to phase 4:SBTL, Start of Yellow
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.43
Intersection Signal Delay: 16.7
Intersection Capacity Utilization 74.3%
Analysis Period (min) 15

Splits and Phases: 8: Plum Creek Pkwy & I-25 SB Off-Ramp





Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	916	151	693	412	208	385
v/c Ratio	0.43	0.43	0.35	0.36	0.36	0.24
Control Delay	28.0	7.8	4.8	24.6	25.7	0.4
Queue Delay	0.0	0.3	0.6	0.1	0.2	0.0
Total Delay	28.0	8.0	5.4	24.7	25.9	0.4
Queue Length 50th (ft)	219	10	25	104	105	0
Queue Length 95th (ft)	256	m25	46	147	173	0
Internal Link Dist (ft)	437		181		388	
Turn Bay Length (ft)						160
Base Capacity (vph)	2137	361	1981	1159	581	1583
Starvation Cap Reductn	0	28	856	0	0	0
Spillback Cap Reductn	1	0	0	114	57	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.45	0.62	0.39	0.40	0.24

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	730	150	145	665	0	0	0	0	590	5	370
Future Volume (veh/h)	0	730	150	145	665	0	0	0	0	590	5	370
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	760	156	151	693	0				619	0	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1905	387	399	1990	0				1924	0	
Arrive On Green	0.00	0.45	0.44	0.02	0.18	0.00				0.36	0.00	0.00
Sat Flow, veh/h	0	4422	865	1781	3647	0				5344	0	1585
Grp Volume(v), veh/h	0	607	309	151	693	0				619	0	0
Grp Sat Flow(s),veh/h/ln	0	1702	1715	1781	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	12.0	12.2	4.2	17.0	0.0				8.4	0.0	0.0
Cycle Q Clear(g_c), s	0.0	12.0	12.2	4.2	17.0	0.0				8.4	0.0	0.0
Prop In Lane	0.00		0.50	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1524	768	399	1990	0				1924	0	
V/C Ratio(X)	0.00	0.40	0.40	0.38	0.35	0.00				0.32	0.00	
Avail Cap(c_a), veh/h	0	1524	768	449	1990	0				1924	0	
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.77	0.77	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	18.6	18.8	13.6	24.9	0.0				23.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.8	1.6	0.5	0.4	0.0				0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.8	5.1	1.8	8.1	0.0				3.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	19.3	20.4	14.0	25.2	0.0				23.6	0.0	0.0
LnGrp LOS	A	B	C	B	C	A				C	A	
Approach Vol, veh/h		916			844						619	A
Approach Delay, s/veh		19.7			23.2						23.6	
Approach LOS		B			C						C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	11.2	48.8		40.0		60.0
Change Period (Y+Rc), s	5.0	5.0		5.0		5.0
Max Green Setting (Gmax), s	9.0	41.0		35.0		55.0
Max Q Clear Time (g_c+I1), s	6.2	14.2		10.4		19.0
Green Ext Time (p_c), s	0.1	6.9		2.4		5.5

Intersection Summary	
HCM 6th Ctrl Delay	22.0
HCM 6th LOS	C

Notes

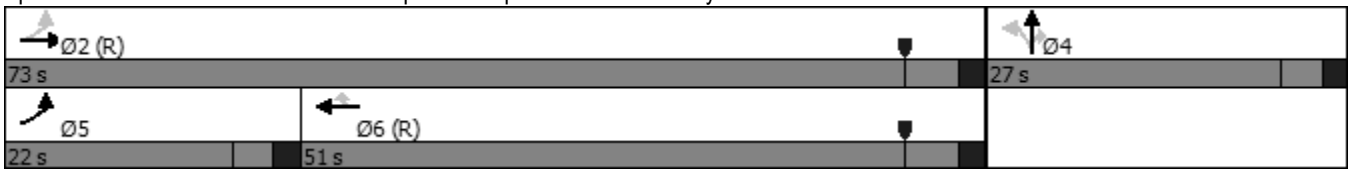
User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	380	940	635	870	175	5	145
Future Volume (vph)	380	940	635	870	175	5	145
Turn Type	pm+pt	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6			4	
Permitted Phases	2			6	4		4
Detector Phase	5	2	6	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0	5.0
Minimum Split (s)	10.0	31.0	24.0	24.0	40.0	40.0	40.0
Total Split (s)	22.0	73.0	51.0	51.0	27.0	27.0	27.0
Total Split (%)	22.0%	73.0%	51.0%	51.0%	27.0%	27.0%	27.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-2.0	-2.0	-2.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max
Act Effct Green (s)	69.0	69.0	48.0	48.0	23.0	23.0	23.0
Actuated g/C Ratio	0.69	0.69	0.48	0.48	0.23	0.23	0.23
v/c Ratio	0.88	0.27	0.63	0.54	0.35	0.28	0.22

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 83 (83%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 18.3
Intersection Capacity Utilization 74.3%
Analysis Period (min) 15

Splits and Phases: 9: I-25 NB Off-Ramp/On-Ramp & Plum Creek Pkwy





Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	388	959	1021	515	134	108	90
v/c Ratio	0.88	0.27	0.63	0.54	0.35	0.28	0.22
Control Delay	45.6	2.1	19.0	3.7	35.3	19.2	8.3
Queue Delay	25.2	0.4	0.0	0.0	0.0	0.0	0.0
Total Delay	70.9	2.6	19.0	3.7	35.3	19.2	8.3
Queue Length 50th (ft)	205	2	229	0	75	30	0
Queue Length 95th (ft)	#311	24	301	60	133	81	41
Internal Link Dist (ft)		181	431			480	
Turn Bay Length (ft)					350		150
Base Capacity (vph)	455	3508	1608	959	386	392	415
Starvation Cap Reductn	76	1876	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.02	0.59	0.63	0.54	0.35	0.28	0.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	380	940	0	0	635	870	175	5	145	0	0	0
Future Volume (veh/h)	380	940	0	0	635	870	175	5	145	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	388	959	0	0	648	888	227	0	100			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	422	3523	0	0	925	1568	819	0	365			
Arrive On Green	0.31	1.00	0.00	0.00	0.49	0.49	0.23	0.00	0.23			
Sat Flow, veh/h	1781	5274	0	0	1870	3170	3563	0	1585			
Grp Volume(v), veh/h	388	959	0	0	648	888	227	0	100			
Grp Sat Flow(s),veh/h/ln	1781	1702	0	0	1870	1585	1781	0	1585			
Q Serve(g_s), s	12.2	0.0	0.0	0.0	26.8	19.7	5.2	0.0	5.2			
Cycle Q Clear(g_c), s	12.2	0.0	0.0	0.0	26.8	19.7	5.2	0.0	5.2			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	422	3523	0	0	925	1568	819	0	365			
V/C Ratio(X)	0.92	0.27	0.00	0.00	0.70	0.57	0.28	0.00	0.27			
Avail Cap(c_a), veh/h	466	3523	0	0	925	1568	819	0	365			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.92	0.92	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	16.2	0.0	0.0	0.0	19.5	17.7	31.7	0.0	31.6			
Incr Delay (d2), s/veh	20.9	0.2	0.0	0.0	4.4	1.5	0.8	0.0	1.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	6.0	0.1	0.0	0.0	12.2	7.2	2.3	0.0	5.1			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.2	0.2	0.0	0.0	23.9	19.2	32.5	0.0	33.5			
LnGrp LOS	D	A	A	A	C	B	C	A	C			
Approach Vol, veh/h		1347			1536			327				
Approach Delay, s/veh		10.8			21.2			32.8				
Approach LOS		B			C			C				

Timer - Assigned Phs		2		4	5	6			
Phs Duration (G+Y+Rc), s		73.0		27.0	19.5	53.5			
Change Period (Y+Rc), s		6.0		5.0	5.0	6.0			
Max Green Setting (Gmax), s		67.0		22.0	17.0	45.0			
Max Q Clear Time (g_c+I1), s		2.0		7.2	14.2	28.8			
Green Ext Time (p_c), s		8.8		1.0	0.4	7.9			

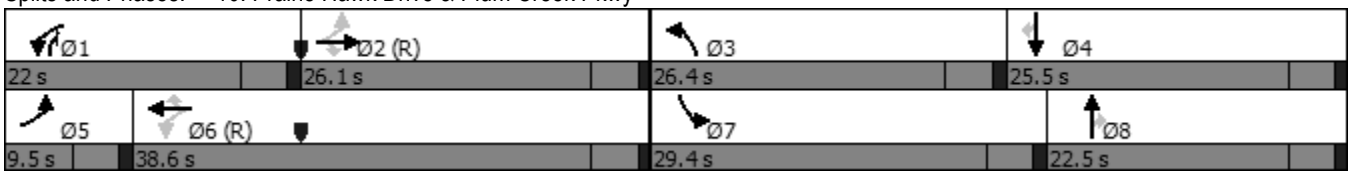
Intersection Summary		
HCM 6th Ctrl Delay	18.0	
HCM 6th LOS	B	

Notes
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	635	130	180	750	105	80	95	75	170	150	60
Future Volume (vph)	45	635	130	180	750	105	80	95	75	170	150	60
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases	2		2	6		6			8			4
Detector Phase	5	2	2	1	6	6	3	8	1	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	9.5	9.5	22.5	22.5
Total Split (s)	9.5	26.1	26.1	22.0	38.6	38.6	26.4	22.5	22.0	29.4	25.5	25.5
Total Split (%)	9.5%	26.1%	26.1%	22.0%	38.6%	38.6%	26.4%	22.5%	22.0%	29.4%	25.5%	25.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	Max	Max
Act Effct Green (s)	32.5	27.0	27.0	44.1	36.5	36.5	10.8	26.9	41.9	19.2	35.3	35.3
Actuated g/C Ratio	0.32	0.27	0.27	0.44	0.36	0.36	0.11	0.27	0.42	0.19	0.35	0.35
v/c Ratio	0.22	0.72	0.26	0.62	0.63	0.18	0.46	0.11	0.12	0.28	0.13	0.10

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 26.8
Intersection Capacity Utilization 49.9%
Analysis Period (min) 15

Splits and Phases: 10: Prairie Hawk Drive & Plum Creek Pkwy



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	49	690	141	196	815	114	87	103	82	185	163	65
v/c Ratio	0.22	0.72	0.26	0.62	0.63	0.18	0.46	0.11	0.12	0.28	0.13	0.10
Control Delay	19.9	39.3	4.8	21.8	24.8	3.6	48.9	25.7	3.3	39.8	24.2	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.9	39.3	4.8	21.8	24.8	3.6	48.9	25.7	3.3	39.8	24.2	0.3
Queue Length 50th (ft)	17	209	0	63	244	14	53	23	0	58	37	0
Queue Length 95th (ft)	39	#323	35	109	315	31	98	45	22	89	66	0
Internal Link Dist (ft)		832			922			624			893	
Turn Bay Length (ft)	230		230	230		230	230		230	230		250
Base Capacity (vph)	218	954	546	390	1291	650	396	1034	783	1026	1249	664
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.72	0.26	0.50	0.63	0.18	0.22	0.10	0.10	0.18	0.13	0.10

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	635	130	180	750	105	80	95	75	170	150	60
Future Volume (veh/h)	45	635	130	180	750	105	80	95	75	170	150	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	49	690	141	196	815	0	87	103	82	185	163	65
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	395	1692	755	447	1829		121	716	447	282	764	341
Arrive On Green	0.04	0.48	0.48	0.08	0.51	0.00	0.07	0.20	0.20	0.08	0.22	0.22
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	49	690	141	196	815	0	87	103	82	185	163	65
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1777	1585	1728	1777	1585
Q Serve(g_s), s	1.4	12.6	5.1	5.3	14.4	0.0	4.8	2.4	3.9	5.2	3.8	3.4
Cycle Q Clear(g_c), s	1.4	12.6	5.1	5.3	14.4	0.0	4.8	2.4	3.9	5.2	3.8	3.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	395	1692	755	447	1829		121	716	447	282	764	341
V/C Ratio(X)	0.12	0.41	0.19	0.44	0.45		0.72	0.14	0.18	0.65	0.21	0.19
Avail Cap(c_a), veh/h	418	1692	755	624	1829		399	716	447	878	764	341
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.5	17.0	15.1	11.6	15.3	0.0	45.6	32.8	27.2	44.5	32.3	32.1
Incr Delay (d2), s/veh	0.1	0.7	0.5	0.7	0.8	0.0	7.6	0.1	0.2	2.6	0.6	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	4.9	1.9	1.9	5.4	0.0	2.3	1.0	1.5	2.3	1.7	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.7	17.8	15.6	12.3	16.1	0.0	53.3	32.9	27.4	47.1	32.9	33.4
LnGrp LOS	B	B	B	B	B		D	C	C	D	C	C
Approach Vol, veh/h		880			1011	A		272			413	
Approach Delay, s/veh		17.1			15.3			37.8			39.4	
Approach LOS		B			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.1	51.6	10.8	25.5	8.2	55.5	12.2	24.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	17.5	21.6	21.9	21.0	5.0	34.1	24.9	18.0
Max Q Clear Time (g_c+I1), s	7.3	14.6	6.8	5.8	3.4	16.4	7.2	5.9
Green Ext Time (p_c), s	0.4	2.7	0.2	1.0	0.0	4.9	0.5	0.6

Intersection Summary	
HCM 6th Ctrl Delay	22.2
HCM 6th LOS	C

Notes

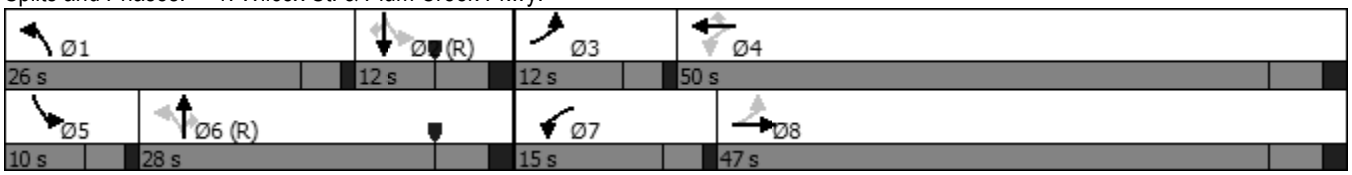
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

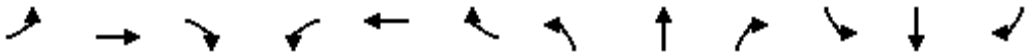
Intersection Capacity Worksheets: 2025 Background + Project (Phase 1)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	138	532	238	120	882	105	312	156	114	58	132	82
Future Volume (vph)	138	532	238	120	882	105	312	156	114	58	132	82
Turn Type	pm+pt	NA	Free	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		Free	4		4	6		6	2		2
Detector Phase	3	8		7	4	4	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	5.0	10.0	10.0	5.0	4.0	4.0
Minimum Split (s)	9.5	31.0		14.5	31.0	31.0	9.5	16.0	16.0	9.5	10.0	10.0
Total Split (s)	12.0	47.0		15.0	50.0	50.0	26.0	28.0	28.0	10.0	12.0	12.0
Total Split (%)	12.0%	47.0%		15.0%	50.0%	50.0%	26.0%	28.0%	28.0%	10.0%	12.0%	12.0%
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	2.0		1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	44.1	34.3	100.0	48.6	36.6	36.6	41.7	31.4	31.4	29.2	21.2	21.2
Actuated g/C Ratio	0.44	0.34	1.00	0.49	0.37	0.37	0.42	0.31	0.31	0.29	0.21	0.21
v/c Ratio	0.76	0.56	0.19	0.36	0.76	0.17	0.51	0.44	0.30	0.19	0.40	0.21

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 32 (32%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 27.2
Intersection Capacity Utilization 64.5%
Analysis Period (min) 15

Splits and Phases: 1: Wilcox St. & Plum Creek Pkwy.





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	173	665	298	133	980	117	503	252	184	68	155	96
v/c Ratio	0.76	0.56	0.19	0.36	0.76	0.17	0.51	0.44	0.30	0.19	0.40	0.21
Control Delay	36.2	28.0	0.3	20.4	41.0	8.9	23.3	33.2	6.3	22.9	42.9	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.2	28.0	0.3	20.4	41.0	8.9	23.3	33.2	6.3	22.9	42.9	1.7
Queue Length 50th (ft)	57	177	0	64	352	9	112	133	0	26	86	0
Queue Length 95th (ft)	74	177	0	109	416	65	111	147	7	57	#222	0
Internal Link Dist (ft)		553			473			812			658	
Turn Bay Length (ft)	280		250	185			190		195	130		130
Base Capacity (vph)	233	1416	1538	386	1557	788	1111	579	618	362	383	455
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.47	0.19	0.34	0.63	0.15	0.45	0.44	0.30	0.19	0.40	0.21

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	138	532	238	120	882	105	312	156	114	58	132	82
Future Volume (veh/h)	138	532	238	120	882	105	312	156	114	58	132	82
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1870	1870	1870	1856	1856	1856	1826	1826	1826
Adj Flow Rate, veh/h	172	665	0	133	980	117	503	252	184	68	155	96
Peak Hour Factor	0.80	0.80	0.80	0.90	0.90	0.90	0.62	0.62	0.62	0.85	0.85	0.85
Percent Heavy Veh, %	5	5	5	2	2	2	3	3	3	5	5	5
Cap, veh/h	253	1159		382	1250	557	955	605	512	350	434	368
Arrive On Green	0.08	0.33	0.00	0.03	0.12	0.12	0.13	0.33	0.33	0.04	0.24	0.24
Sat Flow, veh/h	1739	3469	1547	1781	3554	1585	3428	1856	1572	1739	1826	1547
Grp Volume(v), veh/h	172	665	0	133	980	117	503	252	184	68	155	96
Grp Sat Flow(s),veh/h/ln	1739	1735	1547	1781	1777	1585	1714	1856	1572	1739	1826	1547
Q Serve(g_s), s	6.4	15.8	0.0	4.7	26.8	6.7	10.5	10.6	8.9	2.9	7.1	5.0
Cycle Q Clear(g_c), s	6.4	15.8	0.0	4.7	26.8	6.7	10.5	10.6	8.9	2.9	7.1	5.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	253	1159		382	1250	557	955	605	512	350	434	368
V/C Ratio(X)	0.68	0.57		0.35	0.78	0.21	0.53	0.42	0.36	0.19	0.36	0.26
Avail Cap(c_a), veh/h	253	1422		404	1564	697	1261	605	512	381	434	368
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.83	0.83	0.83	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.6	27.4	0.0	20.4	40.5	31.6	22.5	26.3	25.7	27.0	31.8	31.0
Incr Delay (d2), s/veh	6.0	0.5	0.0	0.2	1.8	0.2	0.2	2.1	2.0	0.1	2.3	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	6.4	0.0	2.0	13.0	2.7	4.2	5.0	3.5	1.2	3.4	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.6	27.9	0.0	20.5	42.3	31.8	22.6	28.4	27.7	27.1	34.0	32.7
LnGrp LOS	C	C		C	D	C	C	C	C	C	C	C
Approach Vol, veh/h		837	A		1230			939			319	
Approach Delay, s/veh		28.2			38.9			25.2			32.2	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.1	29.8	12.0	41.2	8.2	38.6	13.8	39.4
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	22.0	6.0	8.0	44.0	6.0	22.0	11.0	41.0
Max Q Clear Time (g_c+I1), s	12.5	9.1	8.4	28.8	4.9	12.6	6.7	17.8
Green Ext Time (p_c), s	0.6	0.0	0.0	6.3	0.0	2.1	0.0	4.6

Intersection Summary	
HCM 6th Ctrl Delay	31.7
HCM 6th LOS	C

Notes

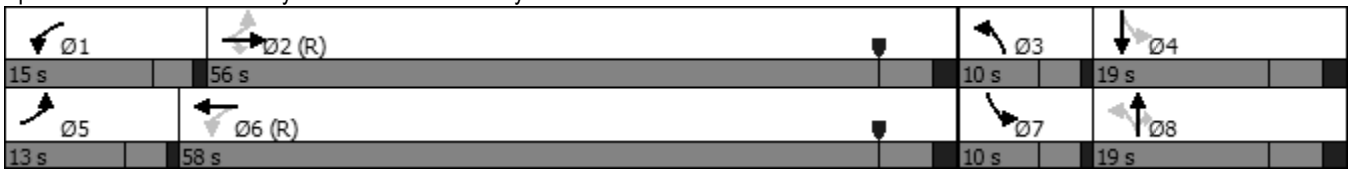
User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	123	472	117	118	969	70	37	57	75	58	61
Future Volume (vph)	123	472	117	118	969	70	37	57	75	58	61
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Free
Protected Phases	5	2		1	6	3	8		7	4	
Permitted Phases	2		2	6		8		8	4		Free
Detector Phase	5	2	2	1	6	3	8	8	7	4	
Switch Phase											
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0	3.0	5.0	5.0	3.0	5.0	
Minimum Split (s)	9.5	32.0	32.0	9.5	32.0	9.5	11.0	11.0	9.5	11.0	
Total Split (s)	13.0	56.0	56.0	15.0	58.0	10.0	19.0	19.0	10.0	19.0	
Total Split (%)	13.0%	56.0%	56.0%	15.0%	58.0%	10.0%	19.0%	19.0%	10.0%	19.0%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	6.0	4.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None	None	
Act Effct Green (s)	72.1	63.0	63.0	70.5	62.2	15.2	8.9	8.9	15.3	9.0	100.0
Actuated g/C Ratio	0.72	0.63	0.63	0.70	0.62	0.15	0.09	0.09	0.15	0.09	1.00
v/c Ratio	0.58	0.31	0.17	0.24	0.58	0.38	0.28	0.28	0.43	0.46	0.05

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 41 (41%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.58
Intersection Signal Delay: 13.2
Intersection Capacity Utilization 62.7%
Analysis Period (min) 15

Splits and Phases: 2: Perry St. & Plum Creek Pkwy.



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	178	684	170	136	1269	86	46	70	101	78	82
v/c Ratio	0.58	0.31	0.17	0.24	0.58	0.38	0.28	0.28	0.43	0.46	0.05
Control Delay	12.0	13.3	7.3	4.4	9.2	37.6	45.6	4.4	39.2	51.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.0	13.3	7.3	4.4	9.2	37.6	45.6	4.4	39.2	51.2	0.1
Queue Length 50th (ft)	35	186	53	17	181	46	28	0	54	48	0
Queue Length 95th (ft)	52	168	63	m32	212	76	55	2	78	74	0
Internal Link Dist (ft)		473			1330		455			497	
Turn Bay Length (ft)	170		70	100		185		65	120		120
Base Capacity (vph)	339	2185	1025	640	2191	232	244	309	238	247	1615
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.31	0.17	0.21	0.58	0.37	0.19	0.23	0.42	0.32	0.05

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	123	472	117	118	969	135	70	37	57	75	58	61
Future Volume (veh/h)	123	472	117	118	969	135	70	37	57	75	58	61
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1885	1885	1885	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	178	684	170	136	1114	155	86	46	70	101	78	0
Peak Hour Factor	0.69	0.69	0.69	0.87	0.87	0.87	0.81	0.81	0.81	0.74	0.74	0.74
Percent Heavy Veh, %	4	4	4	1	1	1	1	1	1	0	0	0
Cap, veh/h	435	2182	973	456	1946	270	216	128	108	238	133	
Arrive On Green	0.02	0.21	0.21	0.10	1.00	1.00	0.06	0.07	0.07	0.06	0.07	0.00
Sat Flow, veh/h	1753	3497	1560	1795	3159	439	1795	1885	1584	1810	1900	1610
Grp Volume(v), veh/h	178	684	170	136	631	638	86	46	70	101	78	0
Grp Sat Flow(s),veh/h/ln	1753	1749	1560	1795	1791	1806	1795	1885	1584	1810	1900	1610
Q Serve(g_s), s	3.6	16.6	9.0	2.9	0.0	0.0	4.4	2.3	4.3	5.2	4.0	0.0
Cycle Q Clear(g_c), s	3.6	16.6	9.0	2.9	0.0	0.0	4.4	2.3	4.3	5.2	4.0	0.0
Prop In Lane	1.00		1.00	1.00		0.24	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	435	2182	973	456	1103	1113	216	128	108	238	133	
V/C Ratio(X)	0.41	0.31	0.17	0.30	0.57	0.57	0.40	0.36	0.65	0.42	0.59	
Avail Cap(c_a), veh/h	494	2182	973	568	1103	1113	220	245	206	238	247	
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.87	0.87	0.87	0.78	0.78	0.78	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	6.2	21.5	18.5	7.3	0.0	0.0	40.2	44.5	45.4	40.3	45.1	0.0
Incr Delay (d2), s/veh	0.2	0.3	0.3	0.1	1.7	1.7	0.4	1.2	4.8	0.4	3.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	7.8	3.5	0.9	0.5	0.5	1.9	1.1	1.8	2.3	2.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.4	21.8	18.8	7.4	1.7	1.7	40.6	45.8	50.2	40.7	48.1	0.0
LnGrp LOS	A	C	B	A	A	A	D	D	D	D	D	
Approach Vol, veh/h		1032			1405			202			179	A
Approach Delay, s/veh		18.7			2.2			45.1			44.0	
Approach LOS		B			A			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.8	68.4	9.8	13.0	9.6	67.6	10.0	12.8
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	11.0	50.0	6.0	13.0	9.0	52.0	6.0	13.0
Max Q Clear Time (g_c+I1), s	4.9	18.6	6.4	6.0	5.6	2.0	7.2	6.3
Green Ext Time (p_c), s	0.1	5.7	0.0	0.1	0.0	11.6	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	14.0
HCM 6th LOS	B

Notes

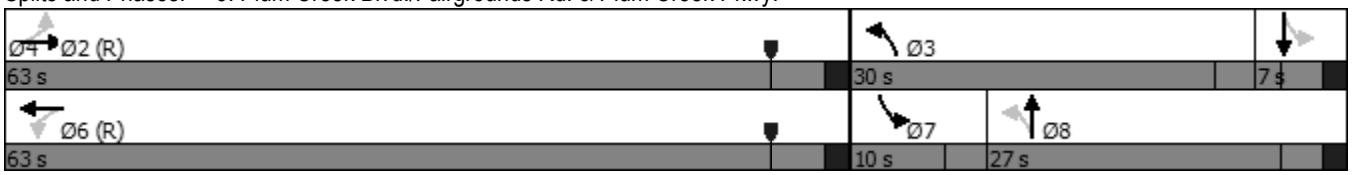
User approved pedestrian interval to be less than phase max green.

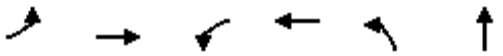
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	Ø4	Ø7
Lane Configurations								
Traffic Volume (vph)	14	412	52	936	285	0		
Future Volume (vph)	14	412	52	936	285	0		
Turn Type	Perm	NA	Perm	NA	pm+pt	NA		
Protected Phases		2		6	3	8	4	7
Permitted Phases	2		6		8			
Detector Phase	2	2	6	6	3	8		
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0	2.0	3.0
Minimum Split (s)	33.0	33.0	28.0	28.0	14.5	10.0	7.0	9.5
Total Split (s)	63.0	63.0	63.0	63.0	30.0	27.0	7.0	10.0
Total Split (%)	63.0%	63.0%	63.0%	63.0%	30.0%	27.0%	7%	10%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	6.0	6.0	6.0	6.0	3.0	5.0		
Lead/Lag					Lead	Lag	Lag	Lead
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	Max	Max	None
Act Effct Green (s)	57.0	57.0	57.0	57.0	34.0	32.0		
Actuated g/C Ratio	0.57	0.57	0.57	0.57	0.34	0.32		
v/c Ratio	0.08	0.35	0.16	0.54	0.73	0.06		

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 44 (44%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 14.5
Intersection Capacity Utilization 64.2%
Analysis Period (min) 15

Splits and Phases: 3: Plum Creek Blvd./Fairgrounds Rd. & Plum Creek Pkwy.





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT
Lane Group Flow (vph)	16	687	61	1102	370	49
v/c Ratio	0.08	0.35	0.16	0.54	0.73	0.06
Control Delay	5.7	3.8	11.6	14.6	36.8	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.7	3.8	11.6	14.6	36.8	0.1
Queue Length 50th (ft)	2	10	17	215	195	0
Queue Length 95th (ft)	m7	24	36	248	237	0
Internal Link Dist (ft)		1330		637		613
Turn Bay Length (ft)	70		55			
Base Capacity (vph)	200	1938	383	2037	554	815
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.35	0.16	0.54	0.67	0.06

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	412	179	52	936	1	285	0	38	0	0	0
Future Volume (veh/h)	14	412	179	52	936	1	285	0	38	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1885	1885	1885	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	16	479	208	61	1101	1	370	0	49	0	0	0
Peak Hour Factor	0.86	0.86	0.86	0.85	0.85	0.85	0.77	0.77	0.77	0.25	0.25	0.25
Percent Heavy Veh, %	4	4	4	1	1	1	1	1	1	0	0	0
Cap, veh/h	305	1483	640	547	2290	2	489	0	425	101	38	0
Arrive On Green	1.00	1.00	1.00	0.62	0.62	0.62	0.22	0.00	0.27	0.00	0.00	0.00
Sat Flow, veh/h	503	2378	1026	761	3672	3	1795	0	1598	1810	1900	0
Grp Volume(v), veh/h	16	351	336	61	537	565	370	0	49	0	0	0
Grp Sat Flow(s),veh/h/ln	503	1749	1655	761	1791	1885	1795	0	1598	1810	1900	0
Q Serve(g_s), s	0.9	0.0	0.0	3.3	16.1	16.1	19.3	0.0	2.3	0.0	0.0	0.0
Cycle Q Clear(g_c), s	17.0	0.0	0.0	3.3	16.1	16.1	19.3	0.0	2.3	0.0	0.0	0.0
Prop In Lane	1.00		0.62	1.00		0.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	305	1091	1032	547	1117	1175	489	0	425	101	38	0
V/C Ratio(X)	0.05	0.32	0.33	0.11	0.48	0.48	0.76	0.00	0.12	0.00	0.00	0.00
Avail Cap(c_a), veh/h	305	1091	1032	547	1117	1175	585	0	425	226	38	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.96	0.96	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	2.2	0.0	0.0	7.7	10.1	10.1	34.9	0.0	27.8	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.8	0.8	0.4	1.5	1.4	3.6	0.0	0.5	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.2	0.2	0.6	6.1	6.4	8.7	0.0	0.9	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	2.5	0.8	0.8	8.1	11.6	11.5	38.4	0.0	28.3	0.0	0.0	0.0
LnGrp LOS	A	A	A	A	B	B	D	A	C	A	A	A
Approach Vol, veh/h		703			1163			419			0	
Approach Delay, s/veh		0.8			11.4			37.3			0.0	
Approach LOS		A			B			D				

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	68.4	24.6	7.0	68.4	0.0	31.6
Change Period (Y+Rc), s	6.0	3.0	5.0	6.0	3.0	5.0
Max Green Setting (Gmax), s	57.0	27.0	2.0	57.0	7.0	22.0
Max Q Clear Time (g_c+I1), s	19.0	21.3	0.0	18.1	0.0	4.3
Green Ext Time (p_c), s	5.0	0.3	0.0	9.4	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	12.9
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

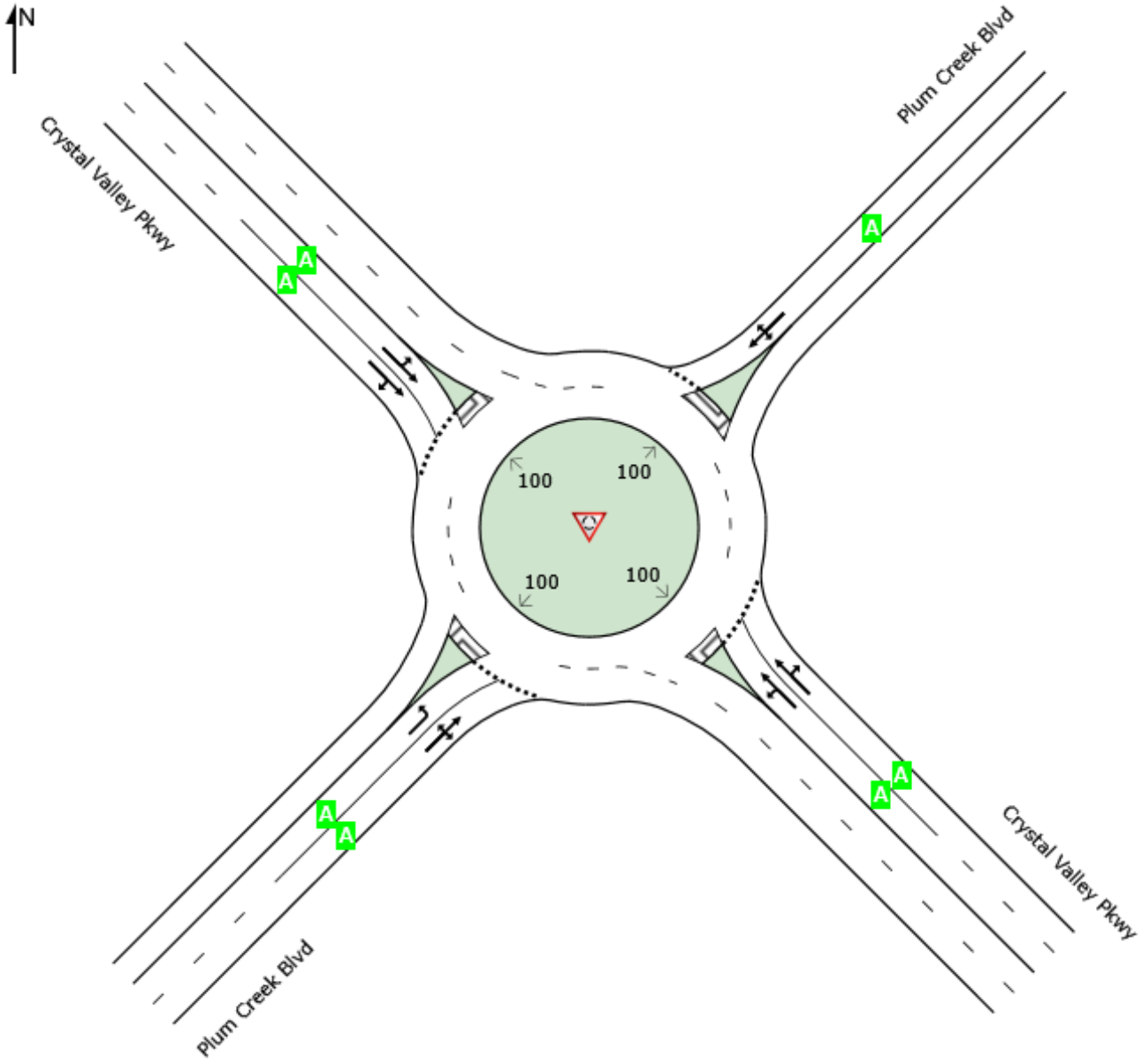
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 005 [Int #5_2025 Total AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
LOS	A	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 12:07:46 PM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #5.sip9

DELAY (CONTROL)

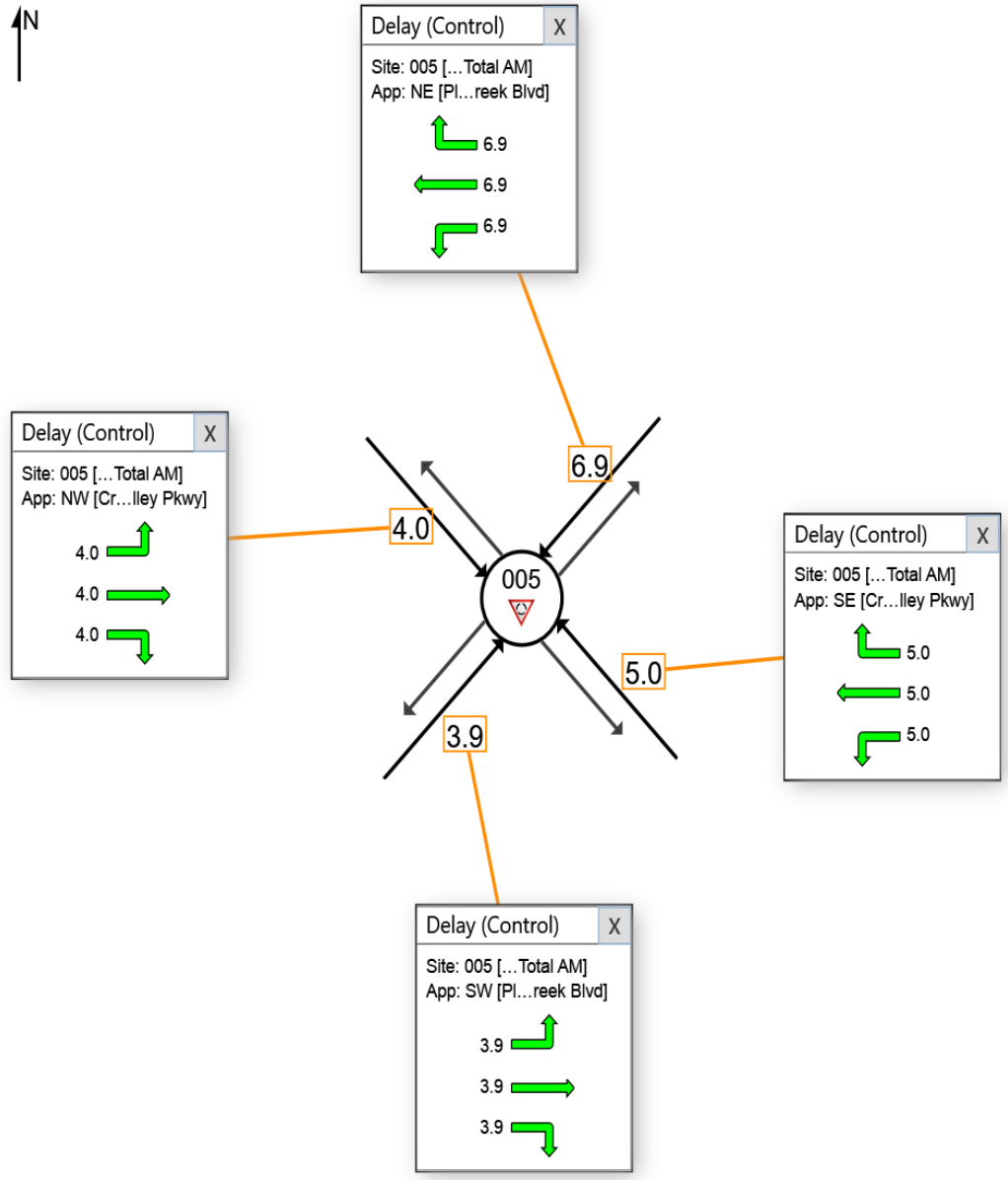
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 005 [Int #5_2025 Total AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popups boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



Colour code based on Level of Service



LOS A LOS B LOS C LOS D LOS E LOS F

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Roundabout Level of Service Method: Same as Sign Control
Delay Model: HCM Delay Formula (Geometric Delay is not included).

Approach values are flow-weighted average values for vehicle movements (pedestrian delays not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 12:07:46 PM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #5.sip9

QUEUE DISTANCE (PERCENTILE)

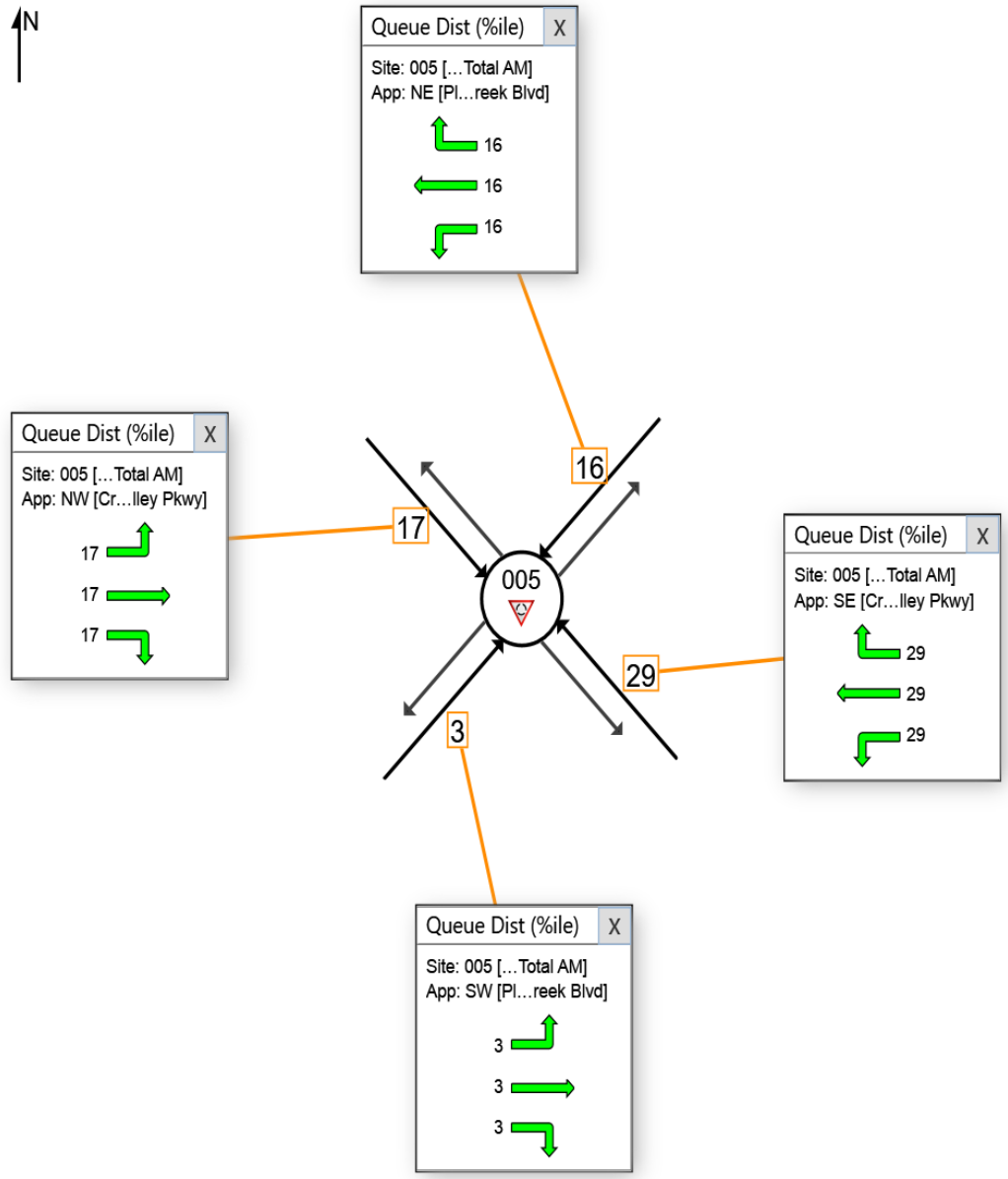
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 005 [Int #5_2025 Total AM (Site Folder: General)]

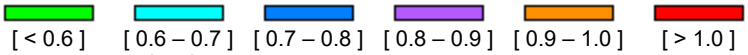
New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



Colour code based on Queue Storage Ratio



[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0]

Queue Model: HCM Queue Formula.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

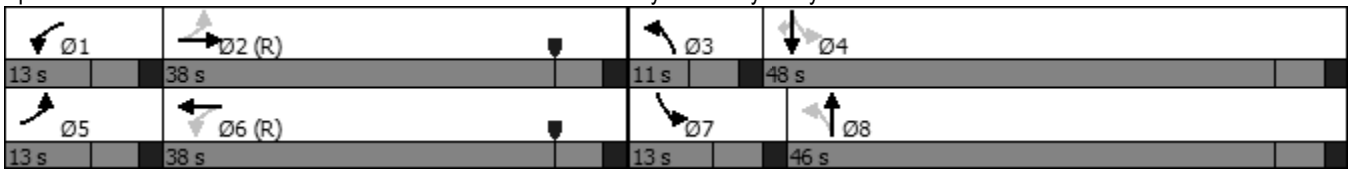
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 12:07:46 PM

Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #5.sip9

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	50	108	45	51	66	2	152	160	58	136	21
Future Volume (vph)	50	108	45	51	66	2	152	160	58	136	21
Turn Type	pm+pt	NA	pm+pt	NA	Free	pm+pt	NA	Free	pm+pt	NA	Perm
Protected Phases	5	2	1	6		3	8		7	4	
Permitted Phases	2		6		Free	8		Free	4		4
Detector Phase	5	2	1	6		3	8		7	4	4
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0		5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	11.0	33.0	11.0	33.0		11.0	33.0		11.0	33.0	33.0
Total Split (s)	13.0	38.0	13.0	38.0		11.0	46.0		13.0	48.0	48.0
Total Split (%)	11.8%	34.5%	11.8%	34.5%		10.0%	41.8%		11.8%	43.6%	43.6%
Yellow Time (s)	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max		None	Max		None	Max	Max
Act Effct Green (s)	40.2	34.7	40.2	34.7	110.0	46.7	42.7	110.0	52.2	50.8	50.8
Actuated g/C Ratio	0.37	0.32	0.37	0.32	1.00	0.42	0.39	1.00	0.47	0.46	0.46
v/c Ratio	0.10	0.21	0.10	0.09	0.05	0.00	0.23	0.11	0.11	0.18	0.03

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.23
Intersection Signal Delay: 16.6
Intersection Capacity Utilization 36.9%
Analysis Period (min) 15

Splits and Phases: 7: Dawson Trail Blvd. & Collector Road A/Crystal Valley Pkwy.





Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	54	122	49	55	72	2	165	174	63	148	23
v/c Ratio	0.10	0.21	0.10	0.09	0.05	0.00	0.23	0.11	0.11	0.18	0.03
Control Delay	20.6	29.7	20.6	29.1	0.1	15.0	24.9	0.1	16.0	19.1	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.6	29.7	20.6	29.1	0.1	15.0	24.9	0.1	16.0	19.1	0.0
Queue Length 50th (ft)	23	64	21	28	0	1	80	0	23	57	0
Queue Length 95th (ft)	48	113	45	60	0	5	133	0	47	117	0
Internal Link Dist (ft)		1283		1733			1960			1008	
Turn Bay Length (ft)	200		500			500		1000	500		500
Base Capacity (vph)	529	585	495	587	1583	548	722	1583	563	836	790
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.21	0.10	0.09	0.05	0.00	0.23	0.11	0.11	0.18	0.03

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	108	5	45	51	66	2	152	160	58	136	21
Future Volume (veh/h)	50	108	5	45	51	66	2	152	160	58	136	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900	1870	1870	1870	1870	1870	1870	1870	1826	1826
Adj Flow Rate, veh/h	54	117	5	49	55	0	2	165	0	63	148	23
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	0	2	2	2	2	2	2	2	5	5
Cap, veh/h	574	613	26	506	641		491	680		503	730	619
Arrive On Green	0.04	0.34	0.34	0.04	0.34	0.00	0.00	0.36	0.00	0.04	0.40	0.40
Sat Flow, veh/h	1810	1781	76	1781	1870	1585	1781	1870	1585	1781	1826	1547
Grp Volume(v), veh/h	54	0	122	49	55	0	2	165	0	63	148	23
Grp Sat Flow(s),veh/h/ln	1810	0	1857	1781	1870	1585	1781	1870	1585	1781	1826	1547
Q Serve(g_s), s	2.1	0.0	5.1	1.9	2.2	0.0	0.1	6.8	0.0	2.4	5.8	1.0
Cycle Q Clear(g_c), s	2.1	0.0	5.1	1.9	2.2	0.0	0.1	6.8	0.0	2.4	5.8	1.0
Prop In Lane	1.00		0.04	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	574	0	639	506	641		491	680		503	730	619
V/C Ratio(X)	0.09	0.00	0.19	0.10	0.09		0.00	0.24		0.13	0.20	0.04
Avail Cap(c_a), veh/h	623	0	639	557	641		567	680		548	730	619
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.90	0.90	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.9	0.0	25.3	22.0	24.5	0.0	22.1	24.4	0.0	20.6	21.6	20.1
Incr Delay (d2), s/veh	0.1	0.0	0.7	0.1	0.2	0.0	0.0	0.8	0.0	0.1	0.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	2.4	0.8	1.0	0.0	0.0	3.2	0.0	1.0	2.6	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.9	0.0	26.0	22.1	24.7	0.0	22.1	25.3	0.0	20.7	22.2	20.2
LnGrp LOS	C	A	C	C	C		C	C		C	C	C
Approach Vol, veh/h		176			104	A		167	A		234	
Approach Delay, s/veh		24.7			23.5			25.2			21.6	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.9	43.8	6.3	50.0	10.0	43.7	10.3	46.0
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	7.0	32.0	5.0	42.0	7.0	32.0	7.0	40.0
Max Q Clear Time (g_c+I1), s	3.9	7.1	2.1	7.8	4.1	4.2	4.4	8.8
Green Ext Time (p_c), s	0.0	0.6	0.0	0.9	0.0	0.2	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay	23.6
HCM 6th LOS	C

Notes

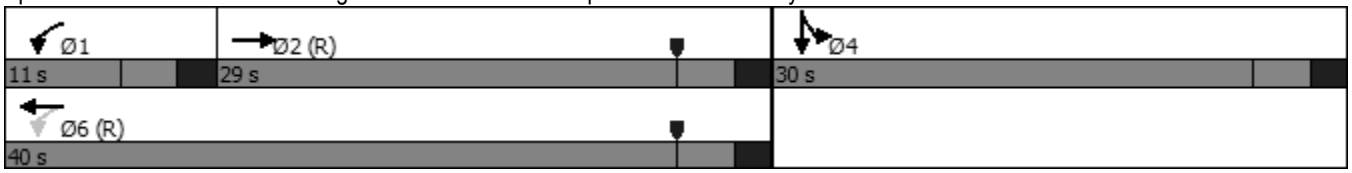
User approved pedestrian interval to be less than phase max green.

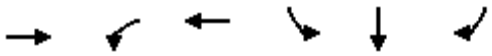
Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	586	145	348	695	140	106
Future Volume (vph)	586	145	348	695	140	106
Turn Type	NA	pm+pt	NA	Split	NA	Free
Protected Phases	2	1	6	4	4	
Permitted Phases		6				Free
Detector Phase	2	1	6	4	4	
Switch Phase						
Minimum Initial (s)	10.0	5.0	10.0	5.0	5.0	
Minimum Split (s)	30.0	10.0	30.0	10.0	10.0	
Total Split (s)	29.0	11.0	40.0	30.0	30.0	
Total Split (%)	41.4%	15.7%	57.1%	42.9%	42.9%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes				
Recall Mode	C-Max	None	C-Max	None	None	
Act Effct Green (s)	27.3	39.1	39.1	20.9	20.9	70.0
Actuated g/C Ratio	0.39	0.56	0.56	0.30	0.30	1.00
v/c Ratio	0.38	0.39	0.20	0.64	0.65	0.07

Intersection Summary
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 20 (29%), Referenced to phase 2:EBT and 6:WBTL, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.65
Intersection Signal Delay: 17.3
Intersection Capacity Utilization 86.1%
Analysis Period (min) 15

Splits and Phases: 8: W. Frontage Road/I-25 SB Off-Ramp & Plum Creek Pkwy





Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	740	161	387	610	318	118
v/c Ratio	0.38	0.39	0.20	0.64	0.65	0.07
Control Delay	15.9	11.7	8.8	23.9	27.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.9	11.7	8.8	23.9	27.2	0.1
Queue Length 50th (ft)	82	32	41	121	126	0
Queue Length 95th (ft)	114	67	70	161	198	0
Internal Link Dist (ft)	437		181		388	
Turn Bay Length (ft)						160
Base Capacity (vph)	1969	408	1977	1150	590	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.39	0.20	0.53	0.54	0.07

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	586	80	145	348	0	0	0	0	695	140	106
Future Volume (veh/h)	0	586	80	145	348	0	0	0	0	695	140	106
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	651	89	161	387	0				695	263	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90				0.90	0.90	0.90
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2094	283	492	2137	0				911	478	
Arrive On Green	0.00	0.46	0.46	0.07	0.60	0.00				0.26	0.26	0.00
Sat Flow, veh/h	0	4717	615	1781	3647	0				3563	1870	1585
Grp Volume(v), veh/h	0	485	255	161	387	0				695	263	0
Grp Sat Flow(s),veh/h/ln	0	1702	1760	1781	1777	0				1781	1870	1585
Q Serve(g_s), s	0.0	6.3	6.4	3.1	3.4	0.0				12.6	8.5	0.0
Cycle Q Clear(g_c), s	0.0	6.3	6.4	3.1	3.4	0.0				12.6	8.5	0.0
Prop In Lane	0.00		0.35	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1567	810	492	2137	0				911	478	
V/C Ratio(X)	0.00	0.31	0.31	0.33	0.18	0.00				0.76	0.55	
Avail Cap(c_a), veh/h	0	1567	810	521	2137	0				1272	668	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.81	0.81	0.00				1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	11.9	11.9	8.1	6.2	0.0				24.1	22.6	0.0
Incr Delay (d2), s/veh	0.0	0.5	1.0	0.3	0.2	0.0				1.8	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.3	2.5	1.0	1.1	0.0				5.2	3.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	12.4	12.9	8.5	6.4	0.0				25.9	23.6	0.0
LnGrp LOS	A	B	B	A	A	A				C	C	
Approach Vol, veh/h		740			548						958	A
Approach Delay, s/veh		12.6			7.0						25.3	
Approach LOS		B			A						C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	9.9	37.2		22.9		47.1
Change Period (Y+Rc), s	5.0	5.0		5.0		5.0
Max Green Setting (Gmax), s	6.0	24.0		25.0		35.0
Max Q Clear Time (g_c+I1), s	5.1	8.4		14.6		5.4
Green Ext Time (p_c), s	0.0	4.4		3.3		2.7

Intersection Summary		
HCM 6th Ctrl Delay		16.6
HCM 6th LOS		B

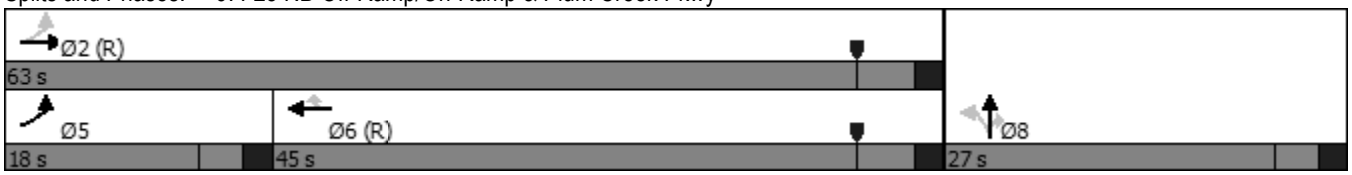
Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	246	991	368	1075	65	2	110
Future Volume (vph)	246	991	368	1075	65	2	110
Turn Type	pm+pt	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6			8	
Permitted Phases	2			6	8		8
Detector Phase	5	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0	5.0
Minimum Split (s)	10.0	31.0	24.0	24.0	40.0	40.0	40.0
Total Split (s)	18.0	63.0	45.0	45.0	27.0	27.0	27.0
Total Split (%)	20.0%	70.0%	50.0%	50.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max
Act Effct Green (s)	58.0	57.0	40.9	40.9	22.0	22.0	22.0
Actuated g/C Ratio	0.64	0.63	0.45	0.45	0.24	0.24	0.24
v/c Ratio	0.72	0.33	0.58	0.60	0.16	0.16	0.15

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 53 (59%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 9.9
Intersection Capacity Utilization 86.1%
Analysis Period (min) 15

Splits and Phases: 9: I-25 NB Off-Ramp/On-Ramp & Plum Creek Pkwy





Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	267	1077	984	584	64	65	64
v/c Ratio	0.72	0.33	0.58	0.60	0.16	0.16	0.15
Control Delay	21.8	8.0	9.8	4.4	28.0	10.7	3.3
Queue Delay	0.2	1.3	0.0	0.0	0.0	0.0	0.0
Total Delay	22.0	9.3	9.8	4.4	28.0	10.7	3.3
Queue Length 50th (ft)	57	93	96	0	30	4	0
Queue Length 95th (ft)	132	116	165	65	65	38	16
Internal Link Dist (ft)		181	431			480	
Turn Bay Length (ft)					350		150
Base Capacity (vph)	401	3220	1684	973	410	401	440
Starvation Cap Reductn	8	1833	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.78	0.58	0.60	0.16	0.16	0.15

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	246	991	0	0	368	1075	65	2	110	0	0	0
Future Volume (veh/h)	246	991	0	0	368	1075	65	2	110	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	267	1077	0	0	400	1168	48	0	146			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	363	3234	0	0	900	1526	435	0	775			
Arrive On Green	0.10	0.63	0.00	0.00	0.48	0.48	0.24	0.00	0.24			
Sat Flow, veh/h	1781	5274	0	0	1870	3170	1781	0	3170			
Grp Volume(v), veh/h	267	1077	0	0	400	1168	48	0	146			
Grp Sat Flow(s),veh/h/ln	1781	1702	0	0	1870	1585	1781	0	1585			
Q Serve(g_s), s	6.3	8.8	0.0	0.0	12.7	27.2	1.9	0.0	3.3			
Cycle Q Clear(g_c), s	6.3	8.8	0.0	0.0	12.7	27.2	1.9	0.0	3.3			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	363	3234	0	0	900	1526	435	0	775			
V/C Ratio(X)	0.74	0.33	0.00	0.00	0.44	0.77	0.11	0.00	0.19			
Avail Cap(c_a), veh/h	449	3234	0	0	900	1526	435	0	775			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.86	0.86	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	13.5	7.7	0.0	0.0	15.4	19.2	26.4	0.0	26.9			
Incr Delay (d2), s/veh	4.2	0.2	0.0	0.0	1.6	3.7	0.5	0.0	0.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.6	2.9	0.0	0.0	5.5	10.1	0.8	0.0	1.3			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.7	7.9	0.0	0.0	17.0	22.9	26.9	0.0	27.5			
LnGrp LOS	B	A	A	A	B	C	C	A	C			
Approach Vol, veh/h		1344			1568			194				
Approach Delay, s/veh		9.8			21.4			27.3				
Approach LOS		A			C			C				

Timer - Assigned Phs	2	5	6	8
Phs Duration (G+Y+Rc), s	63.0	13.7	49.3	27.0
Change Period (Y+Rc), s	6.0	5.0	6.0	5.0
Max Green Setting (Gmax), s	57.0	13.0	39.0	22.0
Max Q Clear Time (g_c+I1), s	10.8	8.3	29.2	5.3
Green Ext Time (p_c), s	10.1	0.3	5.5	0.6

Intersection Summary	
HCM 6th Ctrl Delay	16.8
HCM 6th LOS	B

Notes

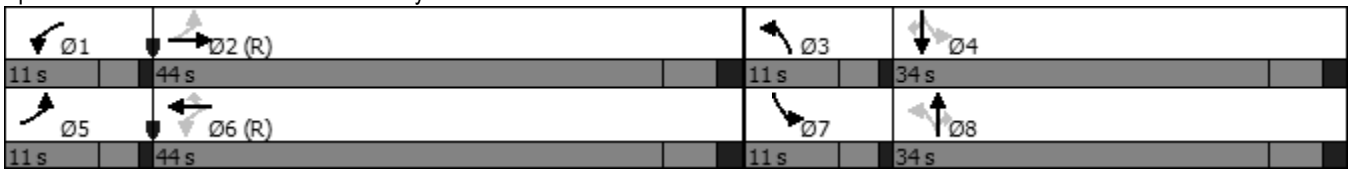
User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	17	387	9	458	89	31	47	276	72	18	16
Future Volume (vph)	17	387	9	458	89	31	47	276	72	18	16
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2	1	6		3	8		7	4	
Permitted Phases	2		6		6	8		8	4		4
Detector Phase	5	2	1	6	6	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	28.0	9.5	33.0	33.0	9.5	33.0	33.0	9.0	28.0	28.0
Total Split (s)	11.0	44.0	11.0	44.0	44.0	11.0	34.0	34.0	11.0	34.0	34.0
Total Split (%)	11.0%	44.0%	11.0%	44.0%	44.0%	11.0%	34.0%	34.0%	11.0%	34.0%	34.0%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None	Max	Max	Max
Act Effct Green (s)	50.3	46.9	49.2	44.8	44.8	36.4	28.0	28.0	38.7	32.5	32.5
Actuated g/C Ratio	0.50	0.47	0.49	0.45	0.45	0.36	0.28	0.28	0.39	0.32	0.32
v/c Ratio	0.04	0.25	0.02	0.31	0.13	0.06	0.10	0.46	0.08	0.03	0.03

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.46
Intersection Signal Delay: 15.0
Intersection Capacity Utilization 45.4%
Analysis Period (min) 15

Splits and Phases: 10: Plum Creek Pkwy & Prairie Hawk Drive



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	18	423	10	498	97	34	51	300	78	20	17
v/c Ratio	0.04	0.25	0.02	0.31	0.13	0.06	0.10	0.46	0.08	0.03	0.03
Control Delay	12.5	17.2	12.3	19.4	2.8	18.3	27.4	5.8	18.2	26.1	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.5	17.2	12.3	19.4	2.8	18.3	27.4	5.8	18.2	26.1	0.1
Queue Length 50th (ft)	5	78	3	95	0	13	24	0	14	9	0
Queue Length 95th (ft)	17	135	11	161	22	32	53	62	29	27	0
Internal Link Dist (ft)		711		922			503			578	
Turn Bay Length (ft)	230		250		230	250		250	250		250
Base Capacity (vph)	454	1659	515	1584	774	539	521	659	994	605	595
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.25	0.02	0.31	0.13	0.06	0.10	0.46	0.08	0.03	0.03

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	387	2	9	458	89	31	47	276	72	18	16
Future Volume (veh/h)	17	387	2	9	458	89	31	47	276	72	18	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	18	421	2	10	498	0	34	51	300	78	20	17
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	452	1731	8	488	1669		456	450	381	824	524	444
Arrive On Green	0.02	0.48	0.48	0.01	0.47	0.00	0.03	0.24	0.24	0.07	0.28	0.28
Sat Flow, veh/h	1781	3627	17	1781	3554	1585	1781	1870	1585	3456	1870	1585
Grp Volume(v), veh/h	18	206	217	10	498	0	34	51	300	78	20	17
Grp Sat Flow(s),veh/h/ln	1781	1777	1867	1781	1777	1585	1781	1870	1585	1728	1870	1585
Q Serve(g_s), s	0.5	6.9	6.9	0.3	8.6	0.0	1.4	2.1	17.7	1.5	0.8	0.8
Cycle Q Clear(g_c), s	0.5	6.9	6.9	0.3	8.6	0.0	1.4	2.1	17.7	1.5	0.8	0.8
Prop In Lane	1.00		0.01	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	452	848	891	488	1669		456	450	381	824	524	444
V/C Ratio(X)	0.04	0.24	0.24	0.02	0.30		0.07	0.11	0.79	0.09	0.04	0.04
Avail Cap(c_a), veh/h	542	848	891	591	1669		526	524	444	824	524	444
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.5	15.5	15.5	13.7	16.3	0.0	27.1	29.6	35.6	23.0	26.2	26.2
Incr Delay (d2), s/veh	0.0	0.7	0.6	0.0	0.5	0.0	0.1	0.1	7.9	0.2	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.7	2.8	0.1	3.3	0.0	0.6	1.0	7.6	0.6	0.4	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.6	16.1	16.1	13.7	16.8	0.0	27.1	29.8	43.5	23.3	26.3	26.4
LnGrp LOS	B	B	B	B	B		C	C	D	C	C	C
Approach Vol, veh/h		441			508	A		385			115	
Approach Delay, s/veh		16.0			16.7			40.2			24.3	
Approach LOS		B			B			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.2	53.7	7.1	34.0	6.0	53.0	11.0	30.1
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	7.0	38.0	7.0	28.0	7.0	38.0	7.0	28.0
Max Q Clear Time (g_c+I1), s	2.3	8.9	3.4	2.8	2.5	10.6	3.5	19.7
Green Ext Time (p_c), s	0.0	2.3	0.0	0.1	0.0	3.1	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay	23.4
HCM 6th LOS	C

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

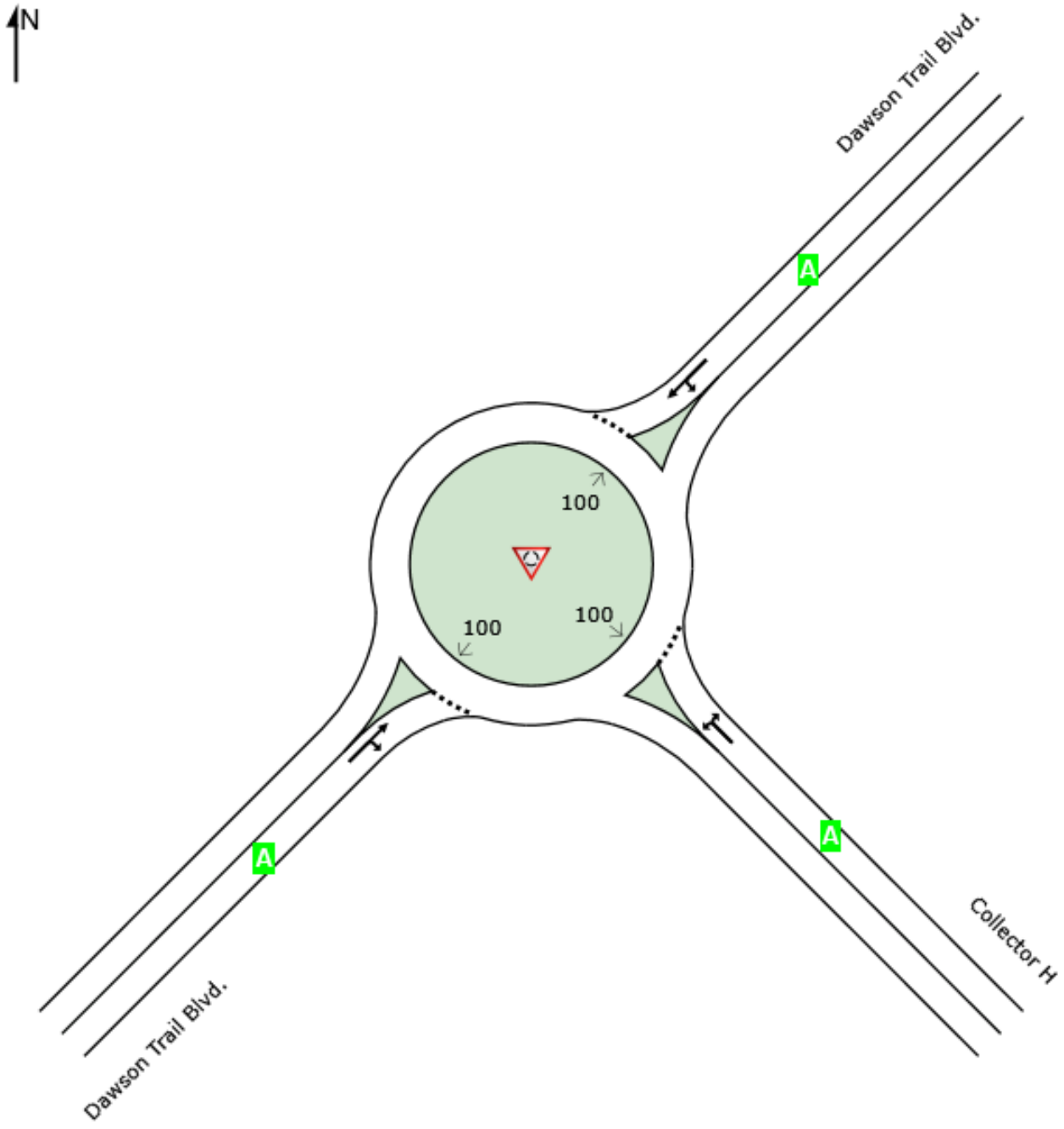
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 102 [Int #102_2025 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches			Intersection
	Southeast	Northeast	Southwest	
LOS	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 2:09:37 PM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #102-mod.sip9

DELAY (CONTROL)

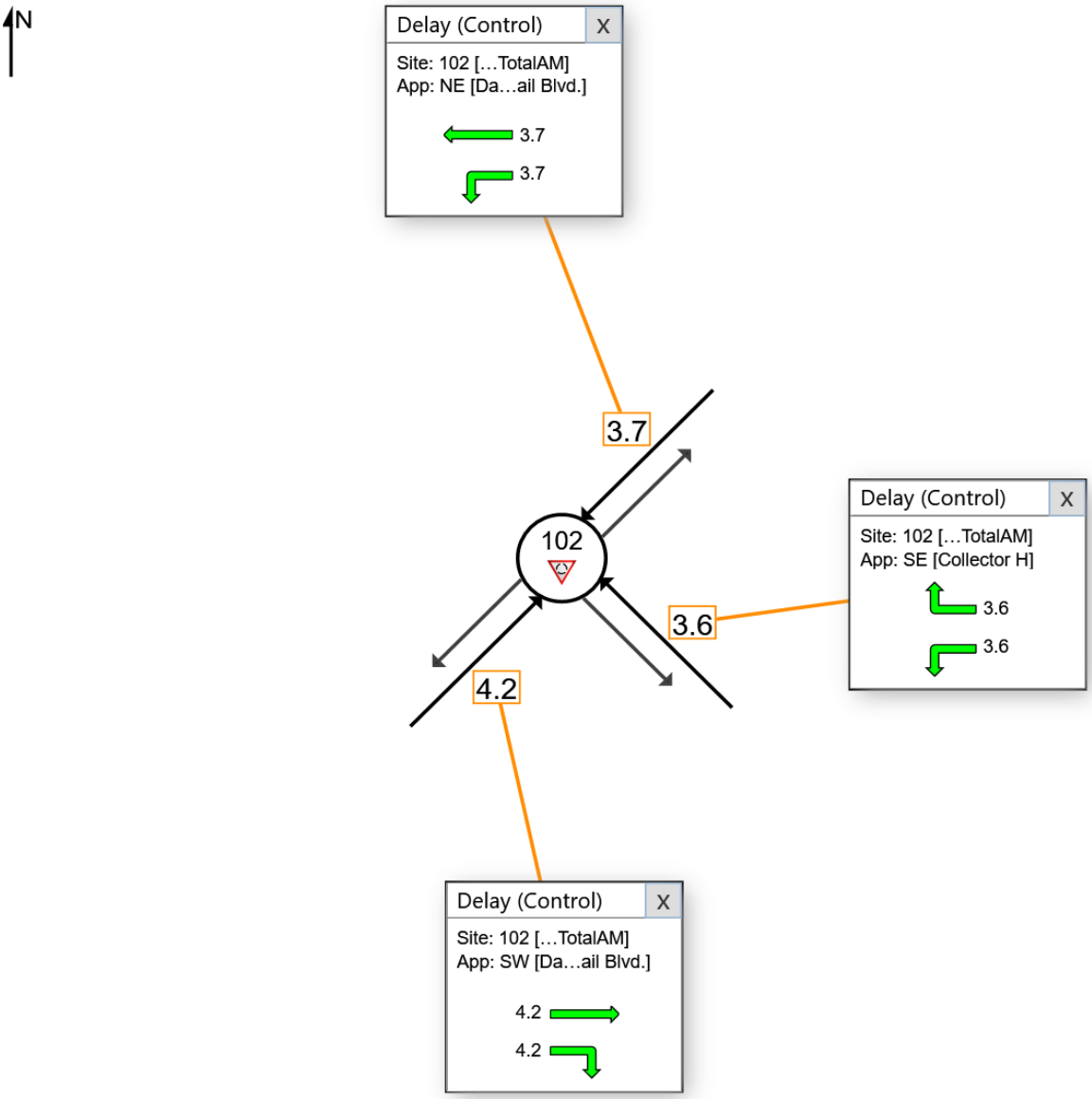
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 102 [Int #102_2025 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

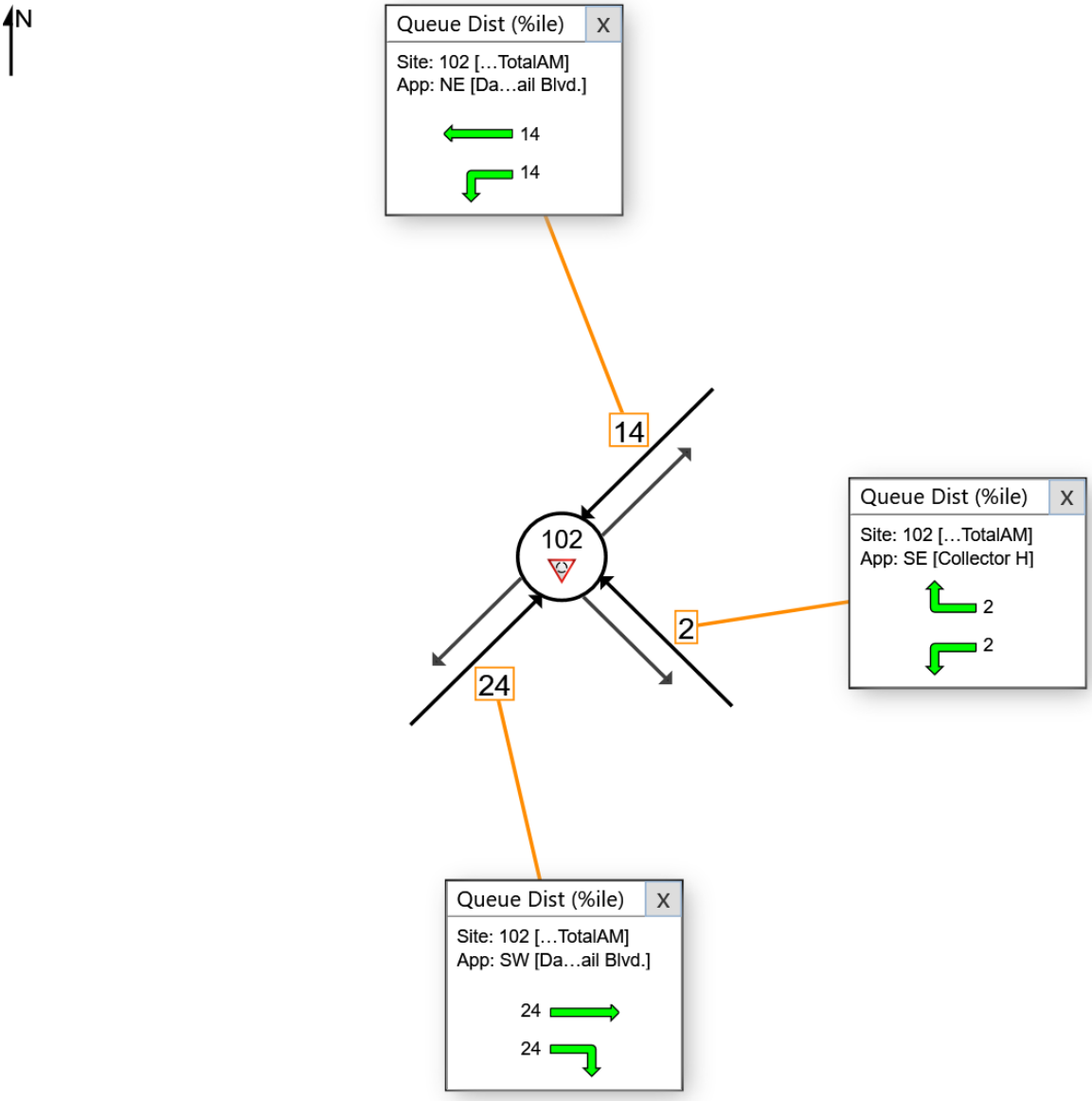
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 102 [Int #102_2025 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	3	243	25	4	170
Future Vol, veh/h	0	3	243	25	4	170
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	0	250	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	3	264	27	4	185

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	264	0	0	291	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	4.12	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	0	883	-	-	1298	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %		1	-	-	1	-
Mov Cap-1 Maneuver	-	883	-	-	1298	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.1	0	0.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	883	1298	-
HCM Lane V/C Ratio	-	-	0.004	0.003	-
HCM Control Delay (s)	-	-	9.1	7.8	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

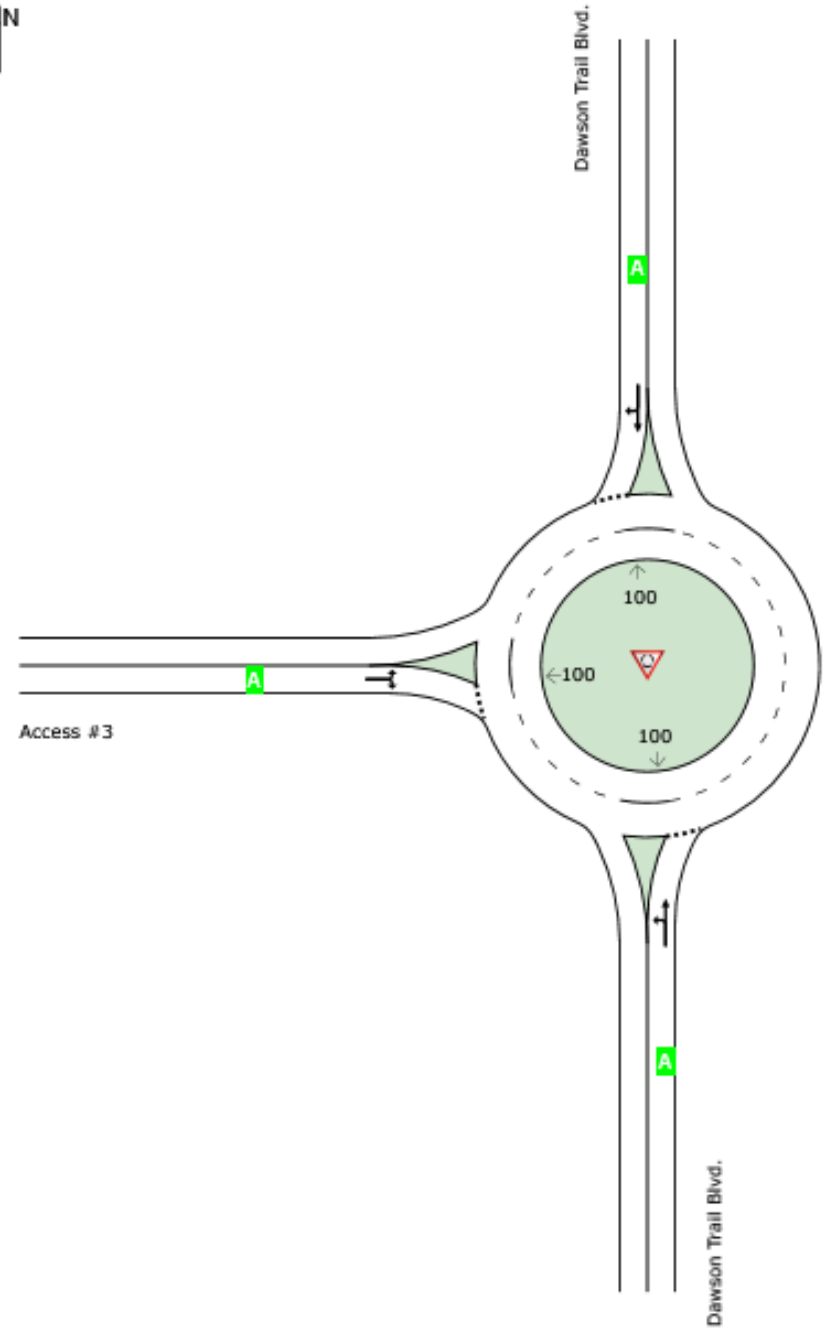
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 104 [Int#104_2025 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches			Intersection
	South	North	West	
LOS	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 2:13:57 PM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #104-mod.sip9

DELAY (CONTROL)

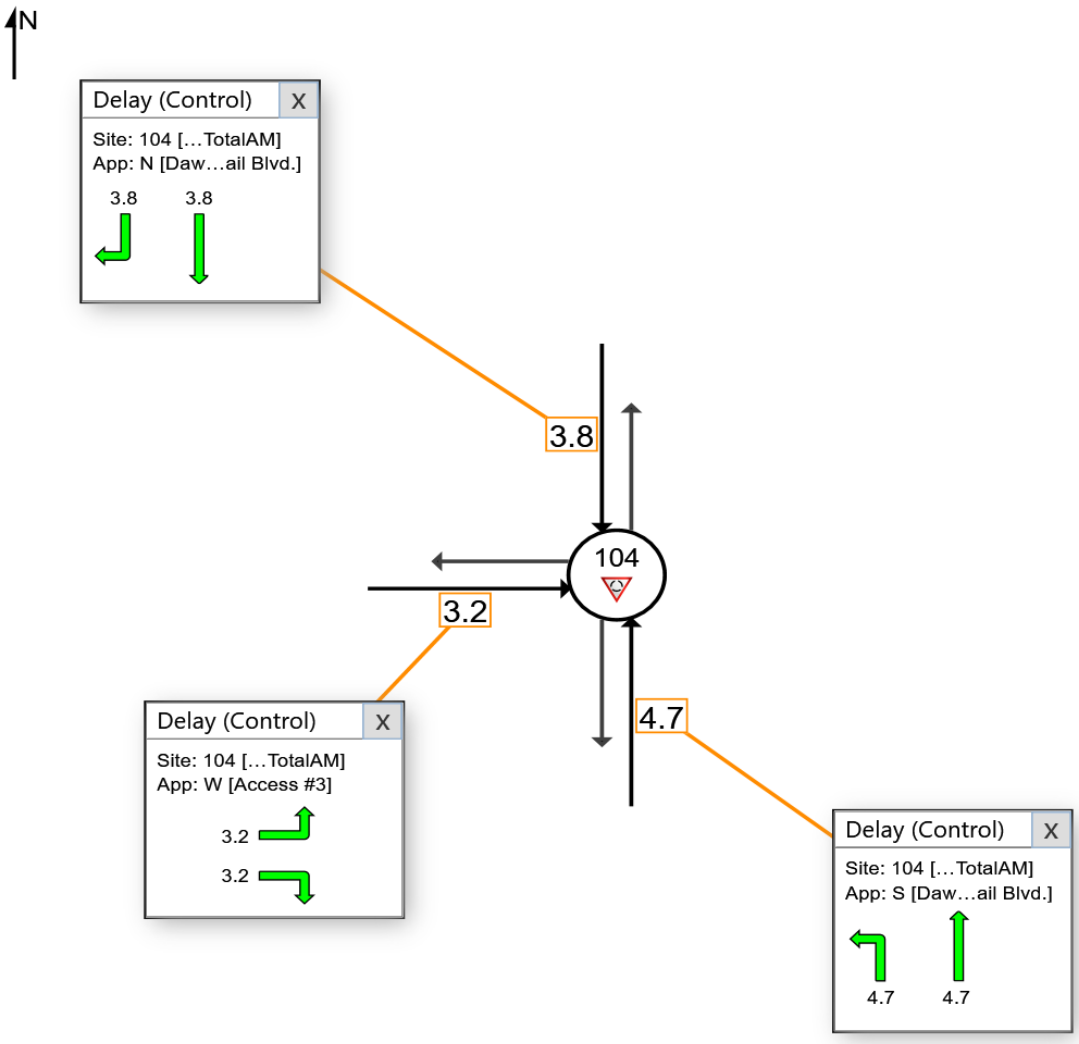
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 104 [Int#104_2025 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

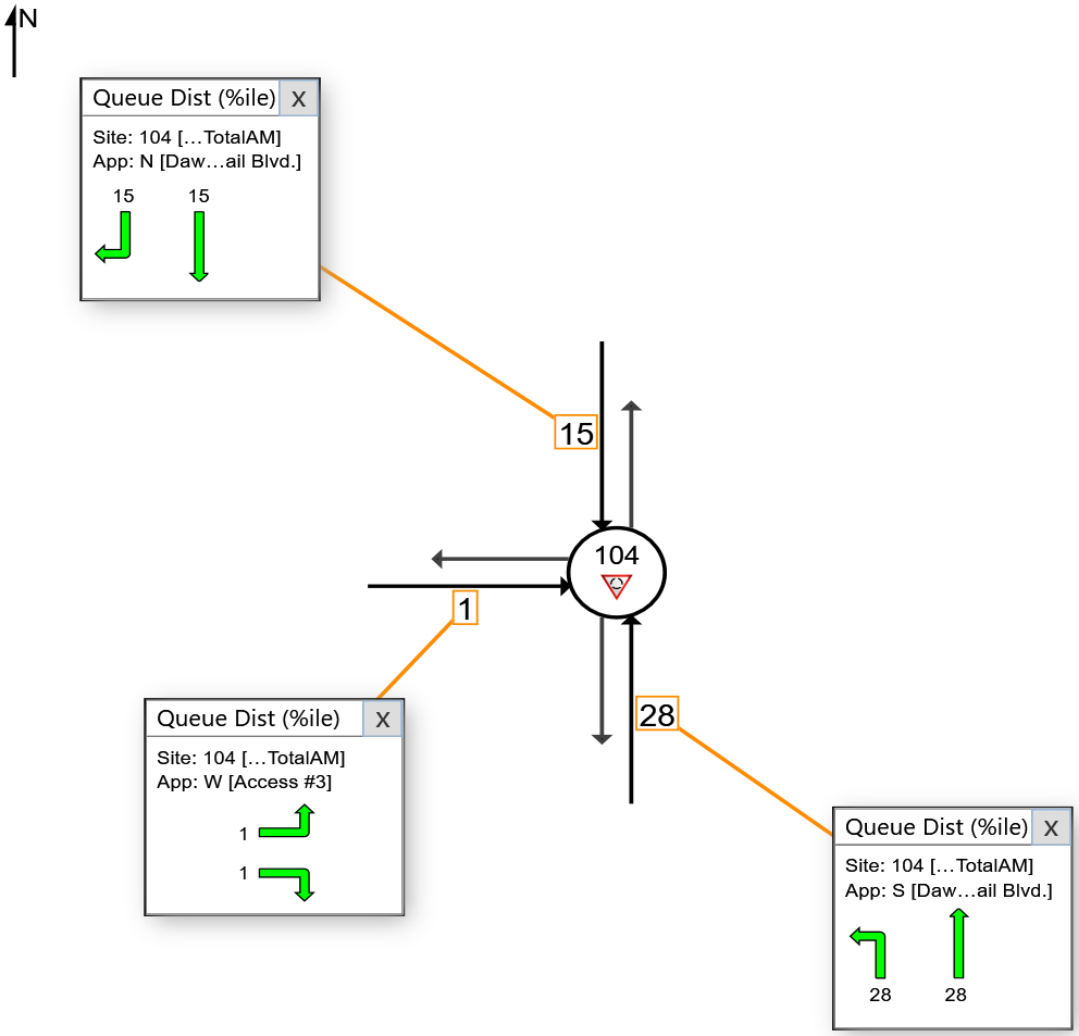
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 104 [Int#104_2025 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



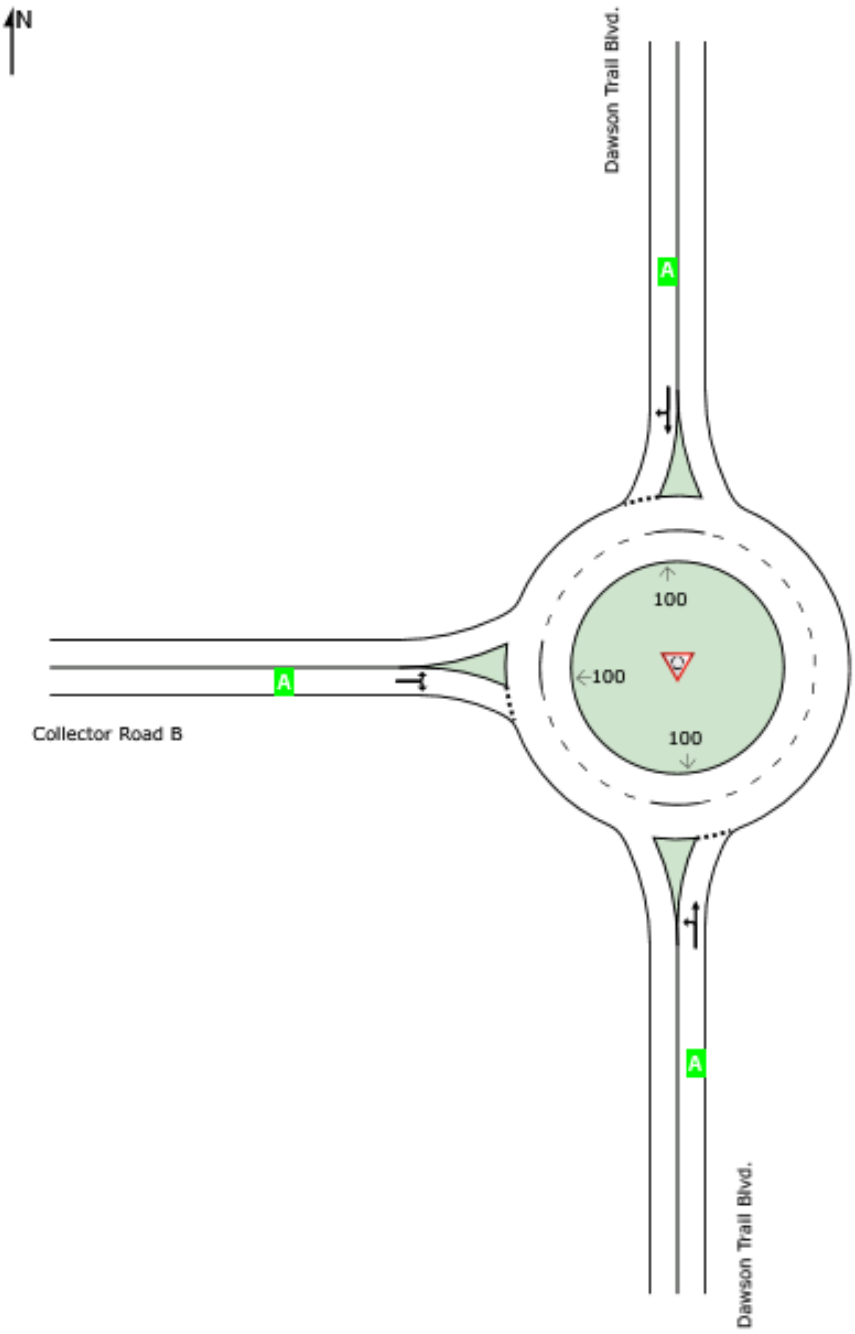
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 101 [Int#105_2025 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches			Intersection
	South	North	West	
LOS	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 2:15:16 PM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #105.sip9

DELAY (CONTROL)

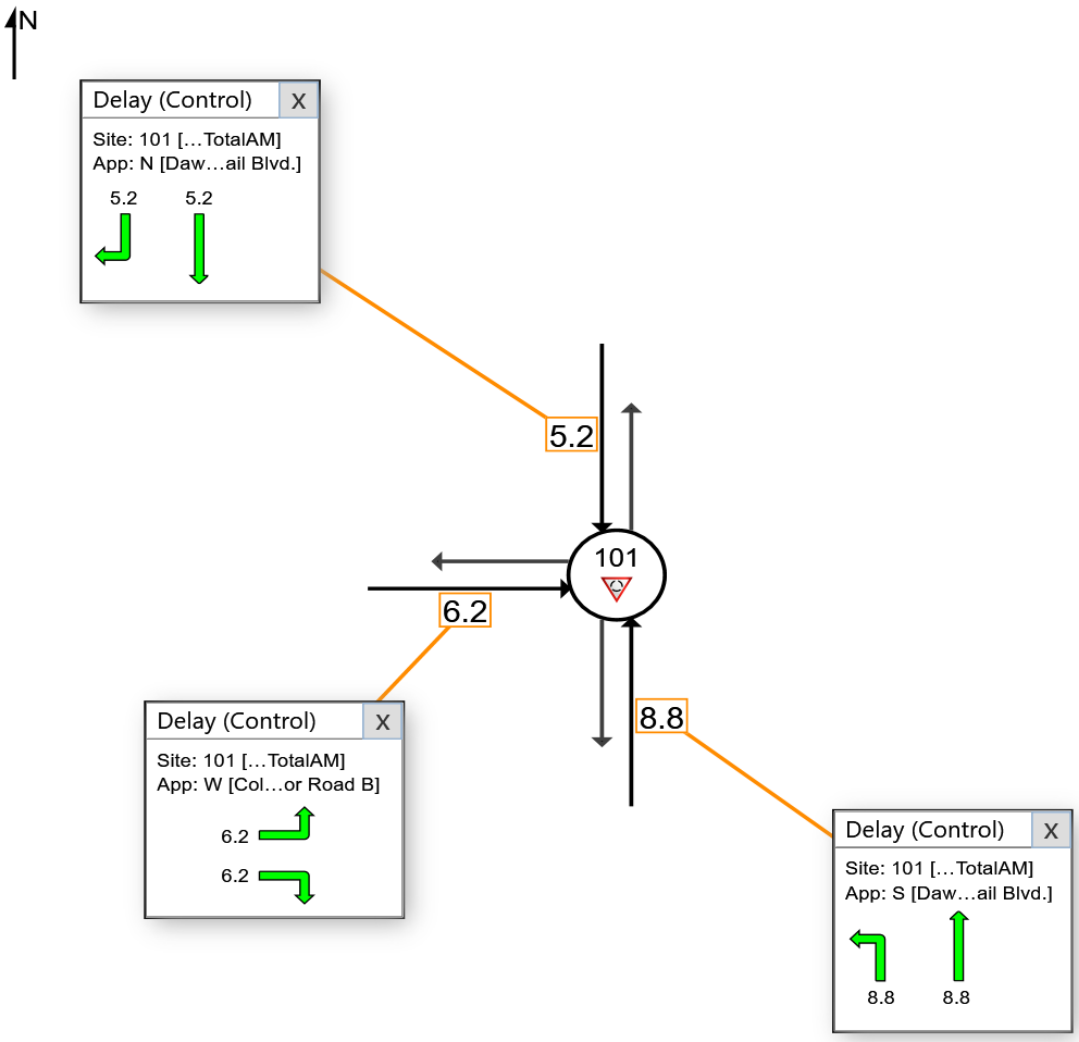
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 101 [Int#105_2025 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

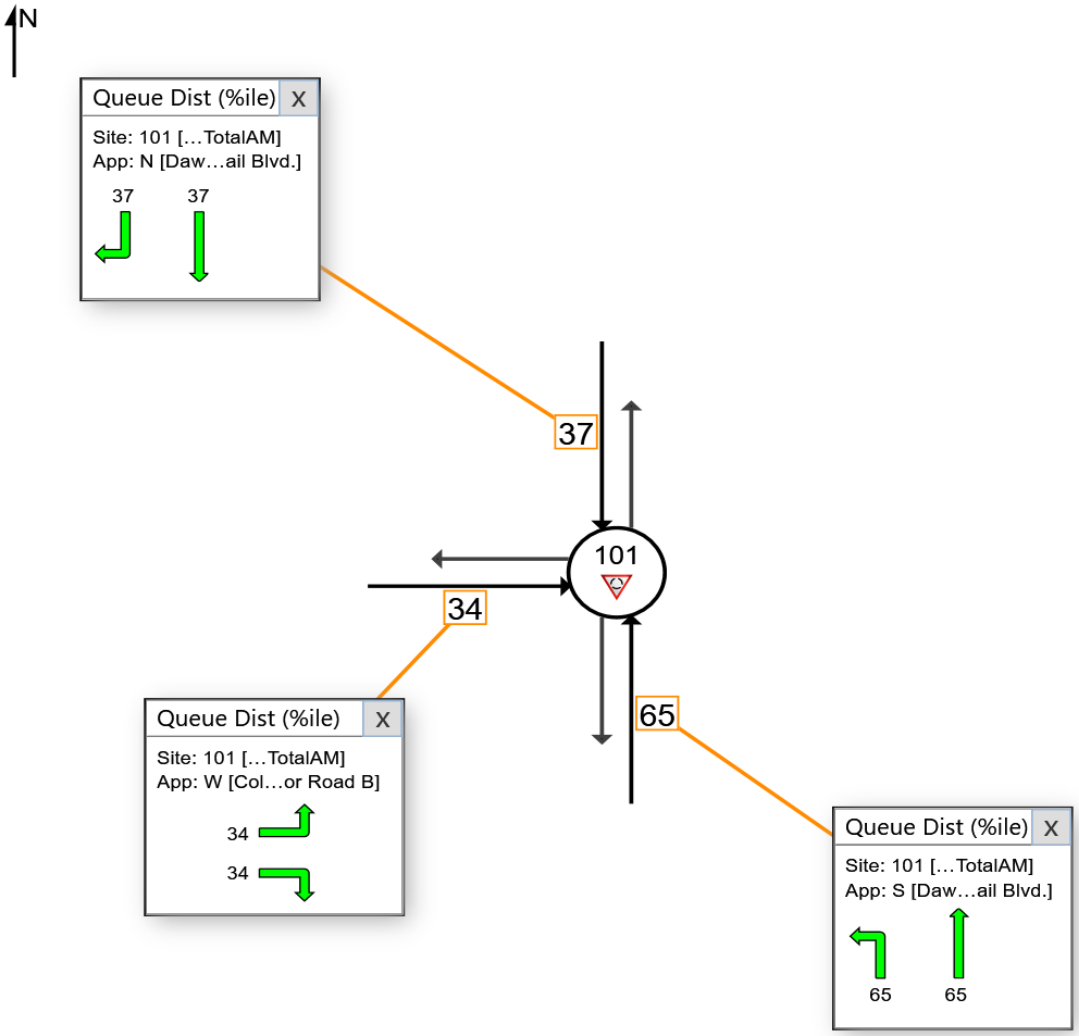
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 101 [Int#105_2025 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



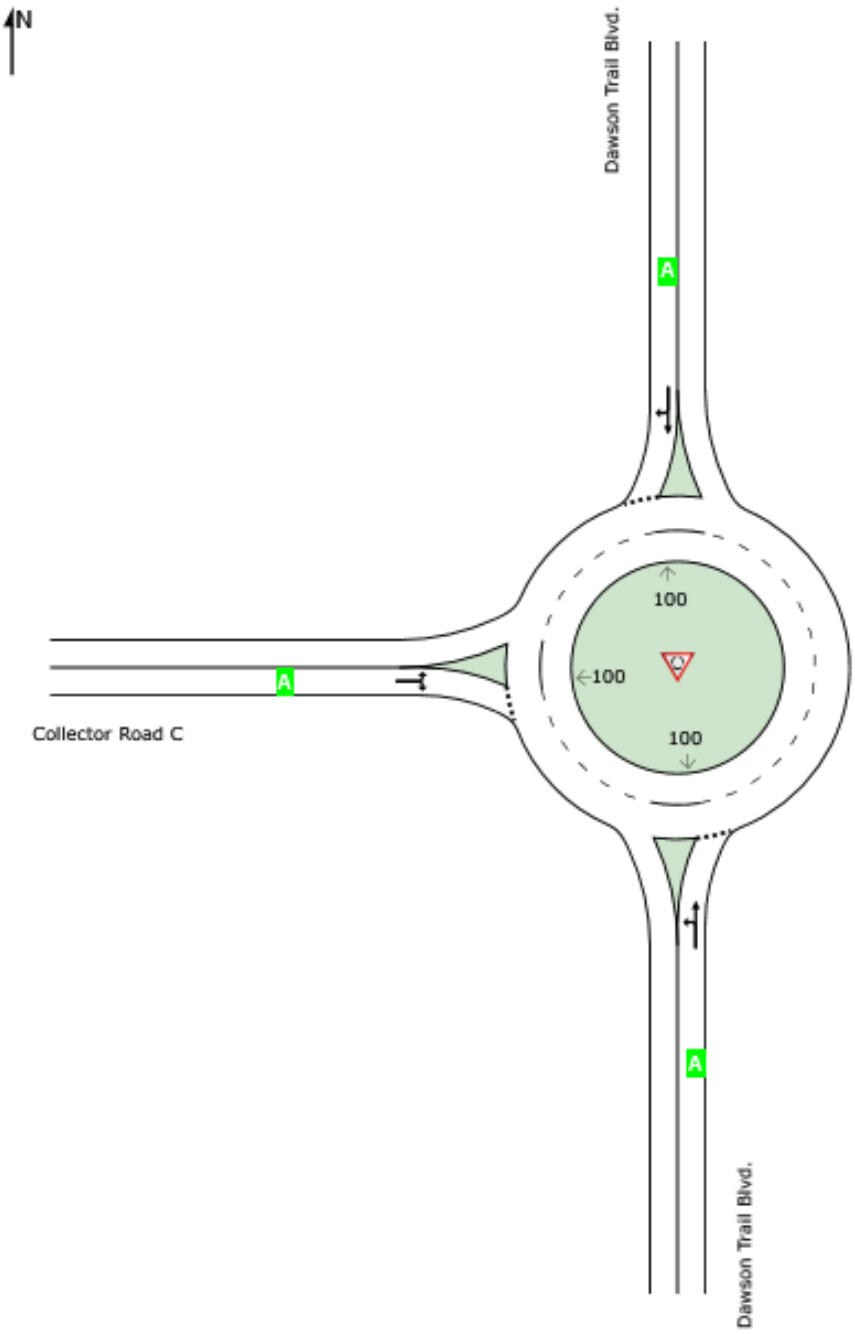
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 106 [Int#106_2025 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches			Intersection
	South	North	West	
LOS	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 2:16:49 PM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int#106-mod.sip9

DELAY (CONTROL)

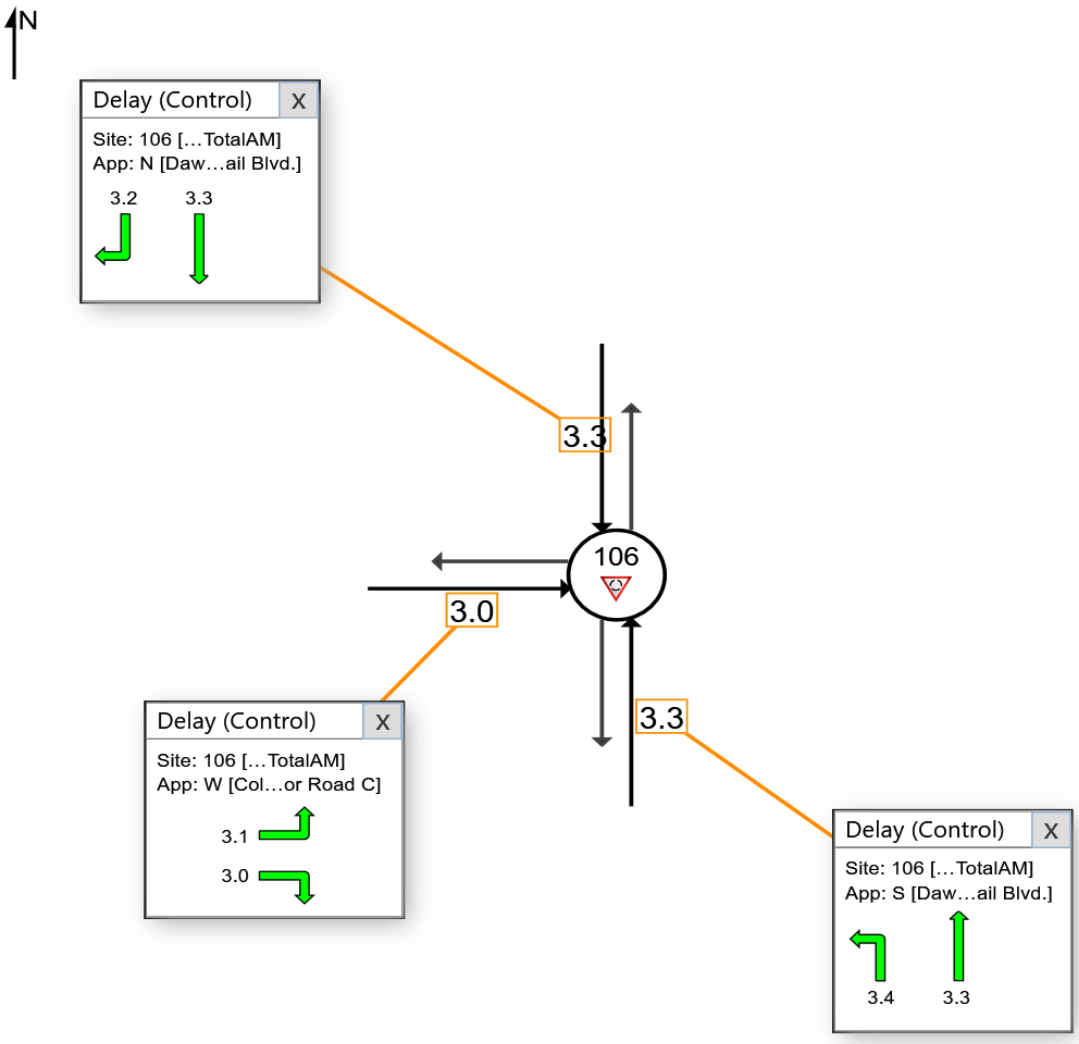
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 106 [Int#106_2025 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

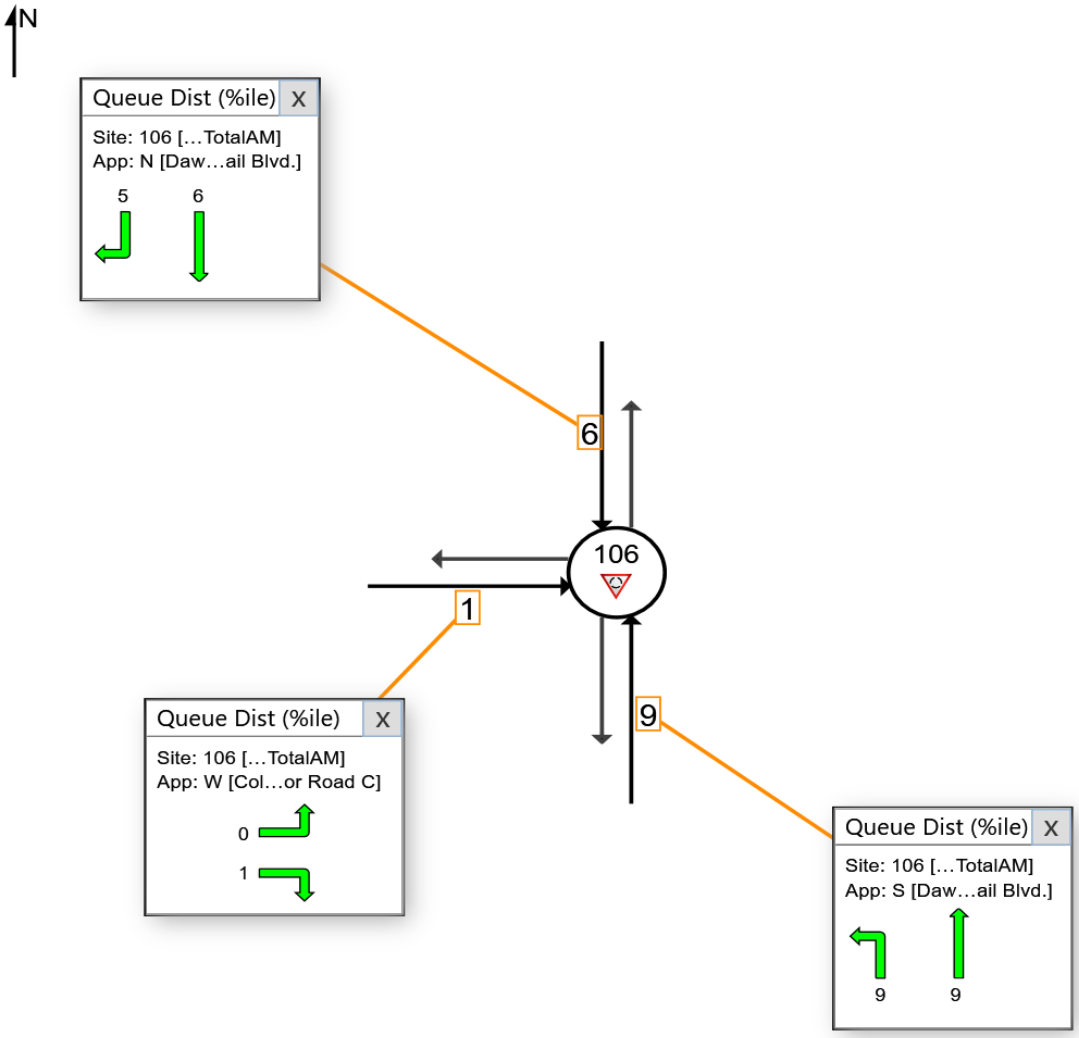
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 106 [Int#106_2025 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↱		↰	↱	
Traffic Vol, veh/h	12	5	0	8	5	1	0	151	14	5	51	23
Future Vol, veh/h	12	5	0	8	5	1	0	151	14	5	51	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	5	0	9	5	1	0	164	15	5	55	25

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	253	257	68	252	262	172	-	0	0	179	0	0
Stage 1	78	78	-	172	172	-	-	-	-	-	-	-
Stage 2	175	179	-	80	90	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	723	661	1025	724	657	872	0	-	-	1397	-	-
Stage 1	956	843	-	830	756	-	0	-	-	-	-	-
Stage 2	827	751	-	953	832	-	0	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1			-	-		-	-
Mov Cap-1 Maneuver	715	658	1025	717	654	872	-	-	-	1397	-	-
Mov Cap-2 Maneuver	715	658	-	717	654	-	-	-	-	-	-	-
Stage 1	956	839	-	830	756	-	-	-	-	-	-	-
Stage 2	820	751	-	943	829	-	-	-	-	-	-	-

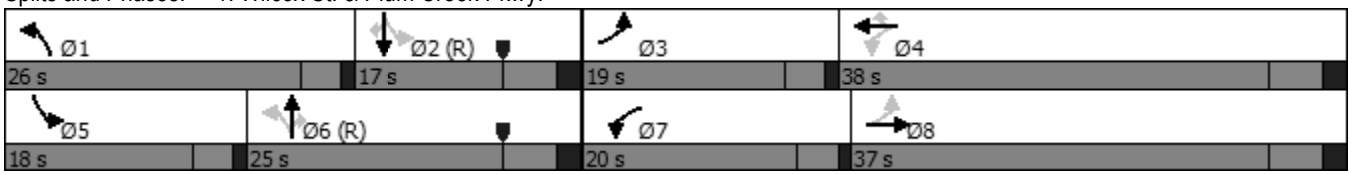
Approach	EB	WB	NB	SB
HCM Control Delay, s	10.3	10.2	0	0.5
HCM LOS	B	B		

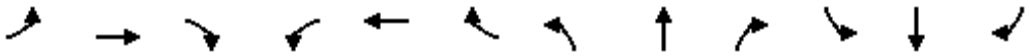
Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	-	-	697	702	1397	-	-
HCM Lane V/C Ratio	-	-	0.027	0.022	0.004	-	-
HCM Control Delay (s)	-	-	10.3	10.2	7.6	-	-
HCM Lane LOS	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	-	-	0.1	0.1	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	246	963	220	46	744	166	158	136	88	168	122	280
Future Volume (vph)	246	963	220	46	744	166	158	136	88	168	122	280
Turn Type	pm+pt	NA	Free	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		Free	4		4	6		6	2		2
Detector Phase	3	8		7	4	4	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	5.0	10.0	10.0	5.0	4.0	4.0
Minimum Split (s)	9.5	31.0		14.5	31.0	31.0	9.5	16.0	16.0	9.5	10.0	10.0
Total Split (s)	19.0	37.0		20.0	38.0	38.0	26.0	25.0	25.0	18.0	17.0	17.0
Total Split (%)	19.0%	37.0%		20.0%	38.0%	38.0%	26.0%	25.0%	25.0%	18.0%	17.0%	17.0%
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	2.0		1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	48.3	38.2	100.0	41.9	29.9	29.9	35.1	26.1	26.1	42.9	30.4	30.4
Actuated g/C Ratio	0.48	0.38	1.00	0.42	0.30	0.30	0.35	0.26	0.26	0.43	0.30	0.30
v/c Ratio	0.80	0.77	0.15	0.19	0.76	0.30	0.18	0.30	0.19	0.40	0.27	0.49

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 69 (69%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 28.3
Intersection Capacity Utilization 85.9%
Analysis Period (min) 15

Splits and Phases: 1: Wilcox St. & Plum Creek Pkwy.





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	267	1047	239	49	800	178	166	143	93	215	156	359
v/c Ratio	0.80	0.77	0.15	0.19	0.76	0.30	0.18	0.30	0.19	0.40	0.27	0.49
Control Delay	35.5	32.1	0.2	19.7	47.4	14.5	19.3	34.9	4.5	22.3	30.5	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.5	32.1	0.2	19.7	47.4	14.5	19.3	34.9	4.5	22.3	30.5	6.0
Queue Length 50th (ft)	90	310	0	20	277	25	34	79	0	93	81	0
Queue Length 95th (ft)	#171	392	0	m45	345	96	56	140	26	127	120	34
Internal Link Dist (ft)		553			473			812			658	
Turn Bay Length (ft)	280		250	185			190		195	130		130
Base Capacity (vph)	367	1352	1564	369	1155	636	1252	481	492	559	571	735
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.77	0.15	0.13	0.69	0.28	0.13	0.30	0.19	0.38	0.27	0.49

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Twin Mesa Metropolitan District New Service Plan
SV2023-003
Planning Commission Supplemental Memo Page 553 of 1222

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	246	963	220	46	744	166	158	136	88	168	122	280
Future Volume (veh/h)	246	963	220	46	744	166	158	136	88	168	122	280
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1856	1856	1856	1885	1885	1885
Adj Flow Rate, veh/h	267	1047	0	49	800	178	166	143	93	215	156	359
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.95	0.95	0.95	0.78	0.78	0.78
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	1	1	1
Cap, veh/h	323	1157		228	984	438	818	558	472	530	652	552
Arrive On Green	0.12	0.33	0.00	0.02	0.09	0.09	0.05	0.30	0.30	0.10	0.35	0.35
Sat Flow, veh/h	1781	3554	1585	1781	3554	1582	3428	1856	1571	1795	1885	1596
Grp Volume(v), veh/h	267	1047	0	49	800	178	166	143	93	215	156	359
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1582	1714	1856	1571	1795	1885	1596
Q Serve(g_s), s	10.2	28.2	0.0	1.9	22.1	10.6	3.3	5.8	4.4	7.9	5.9	19.0
Cycle Q Clear(g_c), s	10.2	28.2	0.0	1.9	22.1	10.6	3.3	5.8	4.4	7.9	5.9	19.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	323	1157		228	984	438	818	558	472	530	652	552
V/C Ratio(X)	0.83	0.90		0.21	0.81	0.41	0.20	0.26	0.20	0.41	0.24	0.65
Avail Cap(c_a), veh/h	371	1157		381	1137	506	1387	558	472	603	652	552
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.90	0.90	0.90	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.9	32.2	0.0	26.0	42.9	37.7	21.9	26.5	26.0	19.5	23.3	27.6
Incr Delay (d2), s/veh	11.2	10.2	0.0	0.2	3.7	0.5	0.0	1.1	0.9	0.2	0.9	5.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	13.2	0.0	0.8	11.0	4.5	1.3	2.8	1.7	3.3	2.8	7.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.0	42.4	0.0	26.1	46.5	38.2	21.9	27.6	26.9	19.7	24.2	33.4
LnGrp LOS	D	D		C	D	D	C	C	C	B	C	C
Approach Vol, veh/h		1314	A		1027			402			730	
Approach Delay, s/veh		40.9			44.1			25.1			27.4	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	40.6	16.3	33.7	13.9	36.1	11.4	38.6
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	22.0	11.0	15.0	32.0	14.0	19.0	16.0	31.0
Max Q Clear Time (g_c+I1), s	5.3	21.0	12.2	24.1	9.9	7.8	3.9	30.2
Green Ext Time (p_c), s	0.2	0.0	0.1	3.6	0.1	1.1	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	37.2
HCM 6th LOS	D

Notes

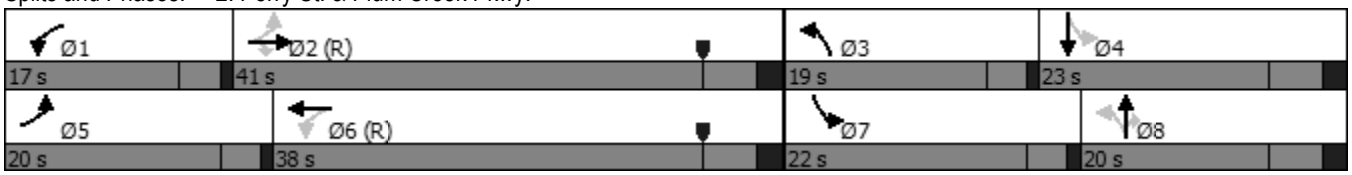
User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	157	955	168	132	566	203	115	223	226	125	192
Future Volume (vph)	157	955	168	132	566	203	115	223	226	125	192
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Free
Protected Phases	5	2		1	6	3	8		7	4	
Permitted Phases	2		2	6		8		8	4		Free
Detector Phase	5	2	2	1	6	3	8	8	7	4	
Switch Phase											
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0	3.0	5.0	5.0	3.0	5.0	
Minimum Split (s)	9.5	32.0	32.0	9.5	32.0	9.5	11.0	11.0	9.5	11.0	
Total Split (s)	20.0	41.0	41.0	17.0	38.0	19.0	20.0	20.0	22.0	23.0	
Total Split (%)	20.0%	41.0%	41.0%	17.0%	38.0%	19.0%	20.0%	20.0%	22.0%	23.0%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	6.0	4.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None	None	
Act Effct Green (s)	56.4	45.9	45.9	55.3	45.3	26.4	11.3	11.3	29.9	13.0	100.0
Actuated g/C Ratio	0.56	0.46	0.46	0.55	0.45	0.26	0.11	0.11	0.30	0.13	1.00
v/c Ratio	0.43	0.63	0.23	0.47	0.49	0.58	0.62	0.63	0.62	0.58	0.14

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 60 (60%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.63
Intersection Signal Delay: 19.8
Intersection Capacity Utilization 69.5%
Analysis Period (min) 15

Splits and Phases: 2: Perry St. & Plum Creek Pkwy.





Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	171	1038	183	139	778	231	131	253	260	144	221
v/c Ratio	0.43	0.63	0.23	0.47	0.49	0.58	0.62	0.63	0.62	0.58	0.14
Control Delay	6.9	19.0	6.2	18.3	15.5	31.7	54.7	12.7	32.8	49.8	0.2
Queue Delay	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.9	19.3	6.2	18.3	15.5	31.7	54.7	12.7	32.8	49.8	0.2
Queue Length 50th (ft)	8	311	29	32	104	112	80	0	129	88	0
Queue Length 95th (ft)	m26	415	m72	m82	144	160	135	65	178	139	0
Internal Link Dist (ft)		473			1330		455			497	
Turn Bay Length (ft)	170		70	100		185		65	120		120
Base Capacity (vph)	512	1640	782	380	1586	432	263	438	464	323	1615
Starvation Cap Reductn	0	157	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.70	0.23	0.37	0.49	0.53	0.50	0.58	0.56	0.45	0.14

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	157	955	168	132	566	173	203	115	223	226	125	192
Future Volume (veh/h)	157	955	168	132	566	173	203	115	223	226	125	192
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	171	1038	183	139	596	182	231	131	253	260	144	0
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.88	0.88	0.88	0.87	0.87	0.87
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	0	0	0
Cap, veh/h	483	1638	730	267	1212	369	407	264	223	405	291	
Arrive On Green	0.02	0.15	0.15	0.12	0.90	0.90	0.13	0.14	0.14	0.14	0.15	0.00
Sat Flow, veh/h	1795	3582	1596	1795	2703	824	1795	1885	1594	1810	1900	1610
Grp Volume(v), veh/h	171	1038	183	139	394	384	231	131	253	260	144	0
Grp Sat Flow(s),veh/h/ln	1795	1791	1596	1795	1791	1736	1795	1885	1594	1810	1900	1610
Q Serve(g_s), s	5.0	27.2	10.1	4.2	4.1	4.1	10.8	6.4	14.0	12.1	6.9	0.0
Cycle Q Clear(g_c), s	5.0	27.2	10.1	4.2	4.1	4.1	10.8	6.4	14.0	12.1	6.9	0.0
Prop In Lane	1.00		1.00	1.00		0.47	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	483	1638	730	267	803	779	407	264	223	405	291	
V/C Ratio(X)	0.35	0.63	0.25	0.52	0.49	0.49	0.57	0.50	1.13	0.64	0.50	
Avail Cap(c_a), veh/h	644	1638	730	391	803	779	446	264	223	475	323	
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.68	0.68	0.68	0.90	0.90	0.90	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	13.5	34.6	27.3	16.7	3.0	3.0	30.9	39.7	43.0	30.4	38.8	0.0
Incr Delay (d2), s/veh	0.1	1.3	0.6	0.5	1.9	2.0	0.7	1.1	100.9	1.3	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	13.2	4.3	1.5	1.4	1.3	4.6	3.0	11.6	5.3	3.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.7	35.9	27.9	17.2	5.0	5.0	31.6	40.8	143.9	31.8	39.8	0.0
LnGrp LOS	B	D	C	B	A	A	C	D	F	C	D	
Approach Vol, veh/h		1392			917			615			404	A
Approach Delay, s/veh		32.1			6.9			79.7			34.6	
Approach LOS		C			A			E			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.1	51.7	16.8	21.3	11.0	50.9	18.1	20.0
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	13.0	35.0	15.0	17.0	16.0	32.0	18.0	14.0
Max Q Clear Time (g_c+I1), s	6.2	29.2	12.8	8.9	7.0	6.1	14.1	16.0
Green Ext Time (p_c), s	0.1	3.5	0.1	0.3	0.1	5.2	0.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	34.3
HCM 6th LOS	C

Notes

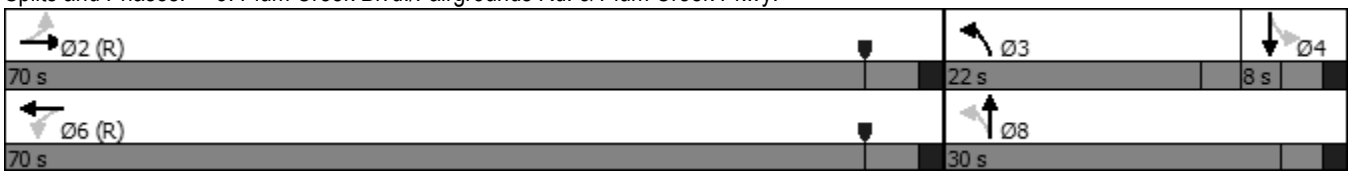
User approved pedestrian interval to be less than phase max green.

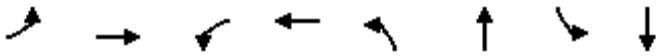
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	28	1065	32	634	229	0	1	1
Future Volume (vph)	28	1065	32	634	229	0	1	1
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases		2		6	3	8		4
Permitted Phases	2		6		8		4	
Detector Phase	2	2	6	6	3	8	4	4
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0	2.0	2.0
Minimum Split (s)	33.0	33.0	28.0	28.0	14.5	10.0	7.0	7.0
Total Split (s)	70.0	70.0	70.0	70.0	22.0	30.0	8.0	8.0
Total Split (%)	70.0%	70.0%	70.0%	70.0%	22.0%	30.0%	8.0%	8.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	3.0	5.0	5.0	5.0
Lead/Lag					Lead		Lag	Lag
Lead-Lag Optimize?					Yes		Yes	Yes
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	Max	Max	Max
Act Effct Green (s)	64.0	64.0	64.0	64.0	27.0	25.0	5.9	5.9
Actuated g/C Ratio	0.64	0.64	0.64	0.64	0.27	0.25	0.06	0.06
v/c Ratio	0.08	0.70	0.34	0.35	0.68	0.08	0.02	0.13

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 85 (85%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 12.0
Intersection Capacity Utilization 68.0%
Analysis Period (min) 15

Splits and Phases: 3: Plum Creek Blvd./Fairgrounds Rd. & Plum Creek Pkwy.





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	32	1565	40	785	266	36	2	14
v/c Ratio	0.08	0.70	0.34	0.35	0.68	0.08	0.02	0.13
Control Delay	5.3	8.6	17.8	8.8	41.4	0.3	48.0	28.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.3	8.6	17.8	8.8	41.4	0.3	48.0	28.8
Queue Length 50th (ft)	5	127	11	110	146	0	1	1
Queue Length 95th (ft)	m9	189	31	124	215	0	6	12
Internal Link Dist (ft)		1330		637		613		434
Turn Bay Length (ft)	70		55				110	
Base Capacity (vph)	394	2224	119	2264	414	465	82	109
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.70	0.34	0.35	0.64	0.08	0.02	0.13

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	1065	312	32	634	2	229	0	31	1	1	7
Future Volume (veh/h)	28	1065	312	32	634	2	229	0	31	1	1	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1870	1870	1870	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	32	1210	355	40	783	2	266	0	36	2	2	12
Peak Hour Factor	0.88	0.88	0.88	0.81	0.81	0.81	0.86	0.86	0.86	0.60	0.60	0.60
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	0	0	0
Cap, veh/h	448	1755	505	282	2327	6	430	0	399	164	16	94
Arrive On Green	1.00	1.00	1.00	0.64	0.64	0.64	0.15	0.00	0.25	0.07	0.07	0.07
Sat Flow, veh/h	694	2742	790	329	3636	9	1795	0	1598	1394	235	1411
Grp Volume(v), veh/h	32	782	783	40	383	402	266	0	36	2	0	14
Grp Sat Flow(s),veh/h/ln	694	1791	1741	329	1777	1869	1795	0	1598	1394	0	1646
Q Serve(g_s), s	0.8	0.0	0.0	5.0	9.9	9.9	13.2	0.0	1.7	0.1	0.0	0.8
Cycle Q Clear(g_c), s	10.6	0.0	0.0	5.0	9.9	9.9	13.2	0.0	1.7	0.1	0.0	0.8
Prop In Lane	1.00		0.45	1.00		0.00	1.00		1.00	1.00		0.86
Lane Grp Cap(c), veh/h	448	1146	1114	282	1137	1196	430	0	399	164	0	109
V/C Ratio(X)	0.07	0.68	0.70	0.14	0.34	0.34	0.62	0.00	0.09	0.01	0.00	0.13
Avail Cap(c_a), veh/h	448	1146	1114	282	1137	1196	495	0	399	164	0	109
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.74	0.74	0.74	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	0.8	0.0	0.0	7.4	8.3	8.3	34.0	0.0	28.8	43.6	0.0	44.0
Incr Delay (d2), s/veh	0.2	2.5	2.8	1.0	0.8	0.8	1.0	0.0	0.4	0.1	0.0	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.8	0.9	0.4	3.6	3.8	5.8	0.0	0.7	0.1	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	1.1	2.5	2.8	8.4	9.1	9.0	34.9	0.0	29.2	43.8	0.0	46.4
LnGrp LOS	A	A	A	A	A	A	C	A	C	D	A	D
Approach Vol, veh/h		1597			825			302			16	
Approach Delay, s/veh		2.6			9.0			34.3			46.0	
Approach LOS		A			A			C			D	

Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		70.0	18.4	11.6		70.0		30.0				
Change Period (Y+Rc), s		6.0	3.0	5.0		6.0		5.0				
Max Green Setting (Gmax), s		64.0	19.0	3.0		64.0		25.0				
Max Q Clear Time (g_c+I1), s		12.6	15.2	2.8		11.9		3.7				
Green Ext Time (p_c), s		18.2	0.2	0.0		6.7		0.1				

Intersection Summary												
HCM 6th Ctrl Delay			8.3									
HCM 6th LOS			A									

Notes

User approved pedestrian interval to be less than phase max green.

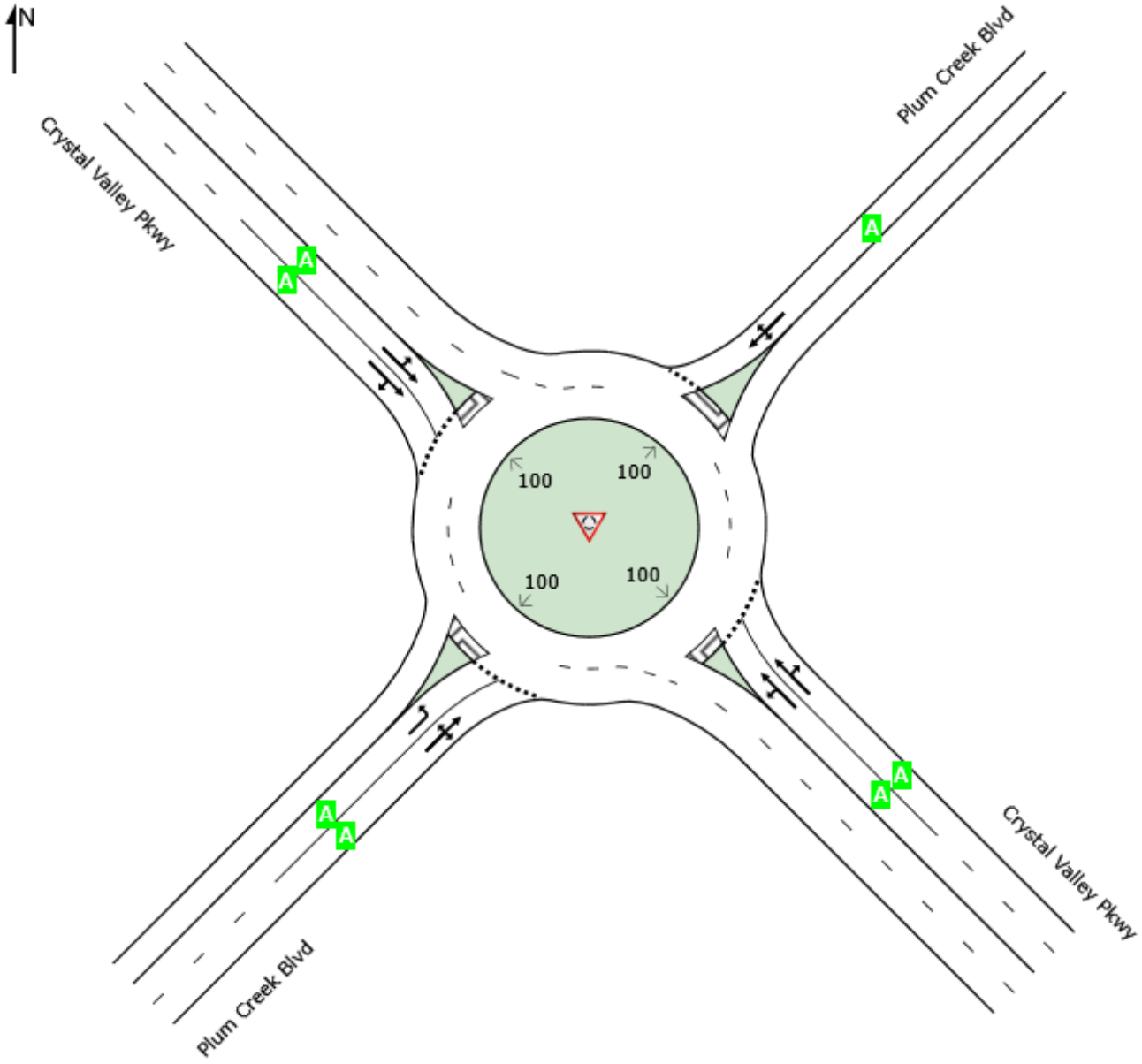
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 005 [Int #5_2025 Total PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
LOS	A	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 12:07:46 PM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #5.sip9

DELAY (CONTROL)

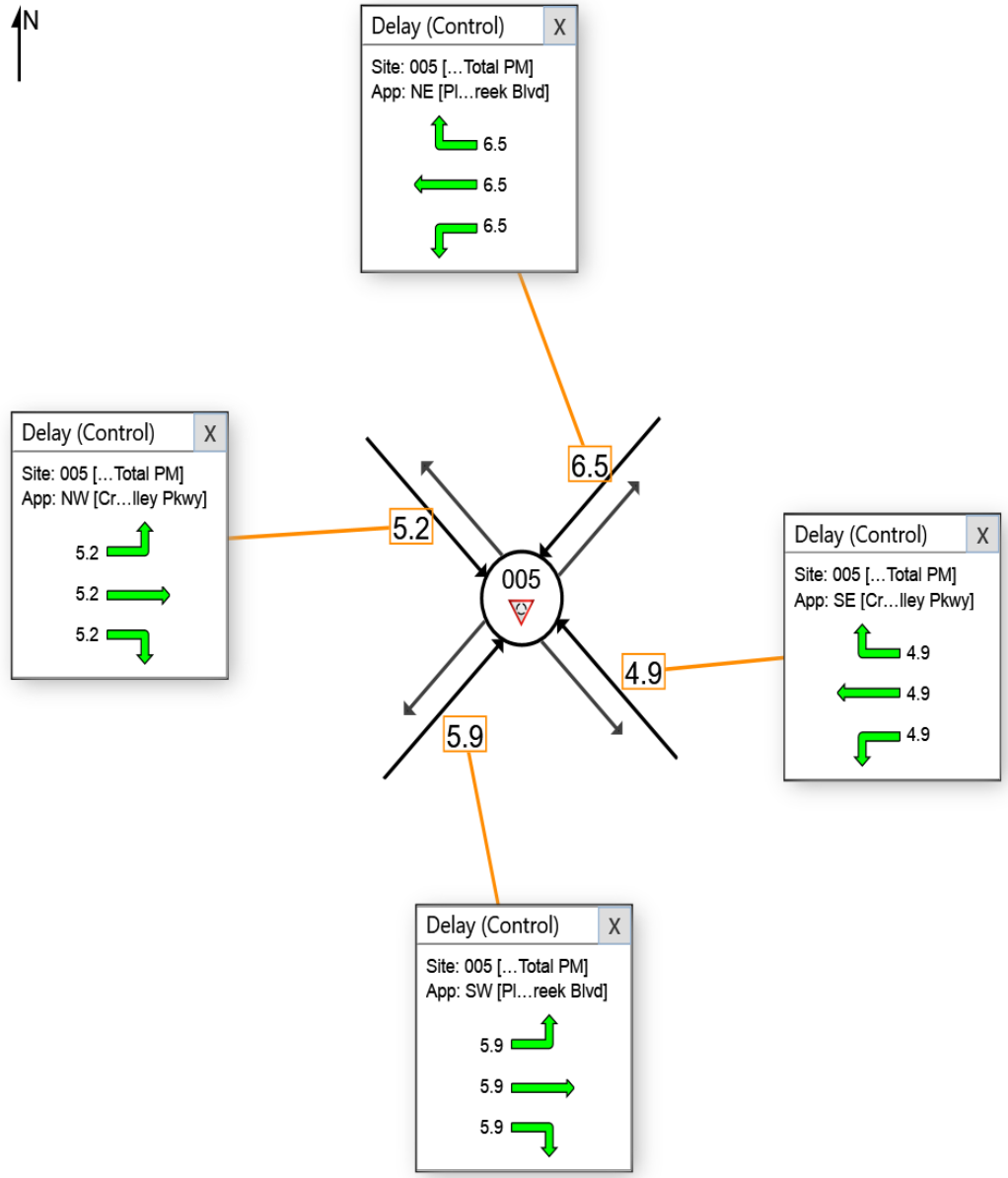
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 005 [Int #5_2025 Total PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popups boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

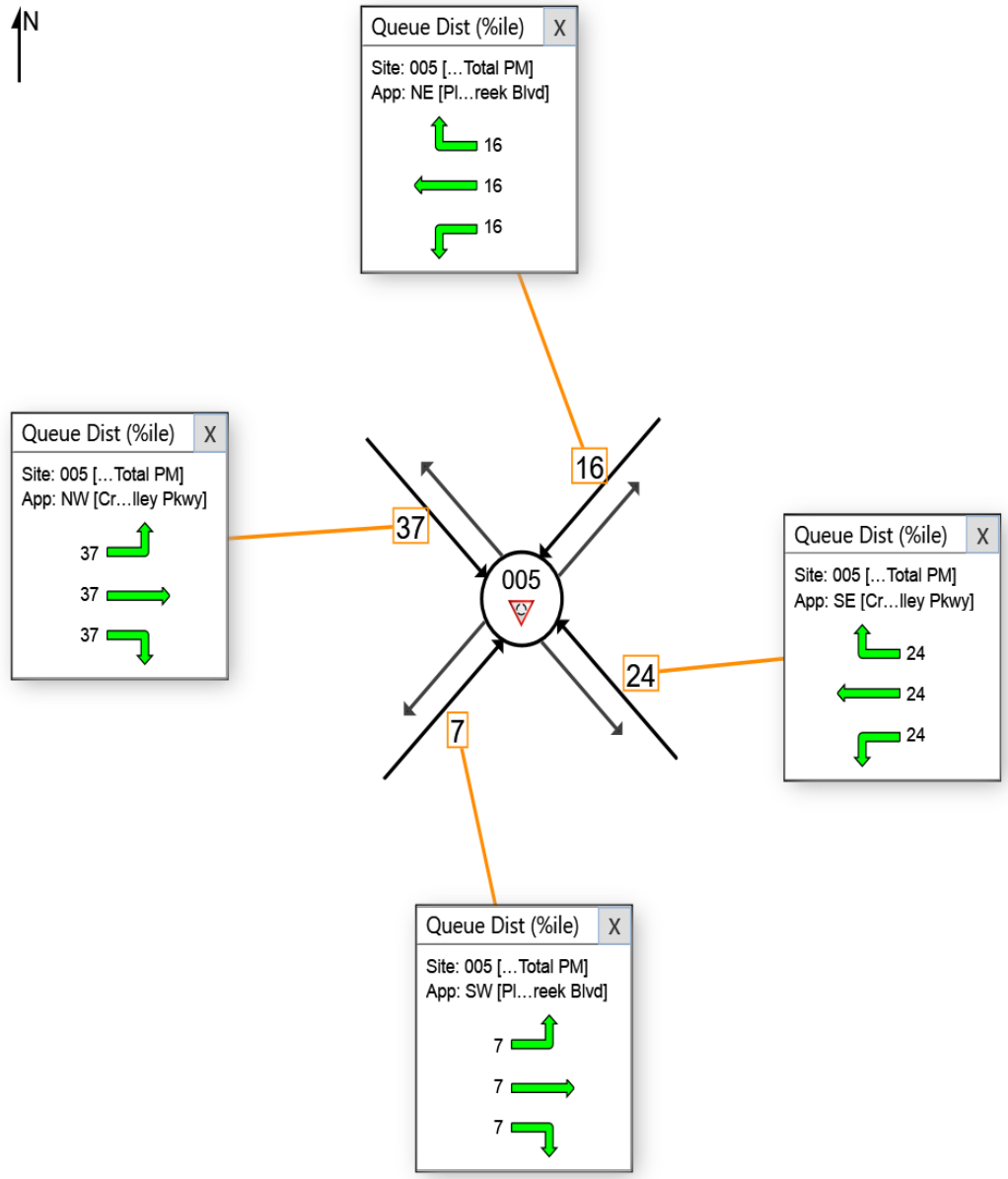
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 005 [Int #5_2025 Total PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

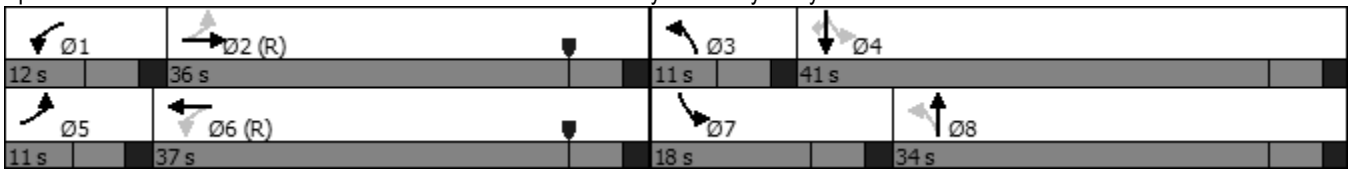
Close All Popups



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	64	66	127	127	115	4	182	114	200	243	73
Future Volume (vph)	64	66	127	127	115	4	182	114	200	243	73
Turn Type	pm+pt	NA	pm+pt	NA	Free	pm+pt	NA	Free	pm+pt	NA	Perm
Protected Phases	5	2	1	6		3	8		7	4	
Permitted Phases	2		6		Free	8		Free	4		4
Detector Phase	5	2	1	6		3	8		7	4	4
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0		5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	11.0	33.0	11.0	33.0		11.0	33.0		11.0	33.0	33.0
Total Split (s)	11.0	36.0	12.0	37.0		11.0	34.0		18.0	41.0	41.0
Total Split (%)	11.0%	36.0%	12.0%	37.0%		11.0%	34.0%		18.0%	41.0%	41.0%
Yellow Time (s)	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max		None	Max		None	Max	Max
Act Effct Green (s)	35.0	30.0	38.0	33.2	100.0	33.8	28.8	100.0	46.0	43.8	43.8
Actuated g/C Ratio	0.35	0.30	0.38	0.33	1.00	0.34	0.29	1.00	0.46	0.44	0.44
v/c Ratio	0.15	0.13	0.28	0.22	0.08	0.01	0.37	0.08	0.41	0.33	0.10

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.41
Intersection Signal Delay: 21.3
Intersection Capacity Utilization 56.0%
Analysis Period (min) 15

Splits and Phases: 7: Dawson Trail Blvd. & Collector Road A/Crystal Valley Pkwy.



Twin Mesa Metropolitan District New Service Plan
SV2023-003
Planning Commission Supplemental Memo Page 565 of 1222



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	70	73	138	138	125	4	198	124	217	264	79
v/c Ratio	0.15	0.13	0.28	0.22	0.08	0.01	0.37	0.08	0.41	0.33	0.10
Control Delay	18.7	26.0	37.0	44.1	0.1	15.5	31.2	0.1	19.4	21.0	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.7	26.0	37.0	44.1	0.1	15.5	31.2	0.1	19.4	21.0	0.3
Queue Length 50th (ft)	26	33	80	85	0	1	102	0	83	103	0
Queue Length 95th (ft)	54	67	140	147	0	7	166	0	133	198	0
Internal Link Dist (ft)		1283		1733			1960			1008	
Turn Bay Length (ft)	200		500			500		1000	500		500
Base Capacity (vph)	471	558	497	618	1583	408	536	1583	530	792	766
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.13	0.28	0.22	0.08	0.01	0.37	0.08	0.41	0.33	0.10

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	66	1	127	127	115	4	182	114	200	243	73
Future Volume (veh/h)	64	66	1	127	127	115	4	182	114	200	243	73
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900	1870	1870	1870	1870	1870	1870	1870	1826	1826
Adj Flow Rate, veh/h	70	72	1	138	138	0	4	198	0	217	264	79
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	0	2	2	2	2	2	2	2	5	5
Cap, veh/h	506	582	8	562	624		365	524		487	691	585
Arrive On Green	0.04	0.32	0.32	0.06	0.33	0.00	0.01	0.28	0.00	0.10	0.38	0.38
Sat Flow, veh/h	1810	1840	26	1781	1870	1585	1781	1870	1585	1781	1826	1547
Grp Volume(v), veh/h	70	0	73	138	138	0	4	198	0	217	264	79
Grp Sat Flow(s),veh/h/ln	1810	0	1866	1781	1870	1585	1781	1870	1585	1781	1826	1547
Q Serve(g_s), s	2.6	0.0	2.8	5.2	5.3	0.0	0.2	8.5	0.0	8.3	10.5	3.3
Cycle Q Clear(g_c), s	2.6	0.0	2.8	5.2	5.3	0.0	0.2	8.5	0.0	8.3	10.5	3.3
Prop In Lane	1.00		0.01	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	506	0	590	562	624		365	524		487	691	585
V/C Ratio(X)	0.14	0.00	0.12	0.25	0.22		0.01	0.38		0.45	0.38	0.13
Avail Cap(c_a), veh/h	519	0	590	562	624		445	524		516	691	585
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.87	0.87	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.4	0.0	24.3	21.1	24.0	0.0	25.6	29.0	0.0	20.9	22.6	20.4
Incr Delay (d2), s/veh	0.1	0.0	0.4	0.2	0.7	0.0	0.0	2.1	0.0	0.6	1.6	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	1.3	2.2	2.5	0.0	0.1	4.1	0.0	3.5	4.7	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.5	0.0	24.7	21.3	24.7	0.0	25.6	31.1	0.0	21.6	24.2	20.8
LnGrp LOS	C	A	C	C	C		C	C		C	C	C
Approach Vol, veh/h		143			276	A		202	A		560	
Approach Delay, s/veh		23.2			23.0			31.0			22.7	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	37.6	6.5	43.8	10.3	39.4	16.4	34.0
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	6.0	30.0	5.0	35.0	5.0	31.0	12.0	28.0
Max Q Clear Time (g_c+I1), s	7.2	4.8	2.2	12.5	4.6	7.3	10.3	10.5
Green Ext Time (p_c), s	0.0	0.3	0.0	1.8	0.0	0.7	0.1	1.0

Intersection Summary	
HCM 6th Ctrl Delay	24.2
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

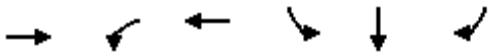
Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	762	215	547	1150	155	216
Future Volume (vph)	762	215	547	1150	155	216
Turn Type	NA	pm+pt	NA	Split	NA	Free
Protected Phases	2	1	6	4	4	
Permitted Phases		6				Free
Detector Phase	2	1	6	4	4	
Switch Phase						
Minimum Initial (s)	10.0	5.0	10.0	5.0	5.0	
Minimum Split (s)	30.0	9.5	30.0	10.0	10.0	
Total Split (s)	27.0	19.0	46.0	40.0	40.0	
Total Split (%)	31.4%	22.1%	53.5%	46.5%	46.5%	
Yellow Time (s)	3.0	3.5	3.0	3.0	3.0	
All-Red Time (s)	2.0	1.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	4.5	5.0	5.0	5.0	
Lead/Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes				
Recall Mode	Max	None	Max	C-Max	C-Max	
Act Effct Green (s)	24.8	41.5	41.0	35.0	35.0	86.0
Actuated g/C Ratio	0.29	0.48	0.48	0.41	0.41	1.00
v/c Ratio	0.66	0.67	0.34	0.69	0.69	0.14

Intersection Summary
Cycle Length: 86
Actuated Cycle Length: 86
Offset: 0 (0%), Referenced to phase 4:SBTL, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 23.0
Intersection Capacity Utilization 95.7%
Analysis Period (min) 15

Splits and Phases: 8: W. Frontage Road/I-25 SB Off-Ramp & Plum Creek Pkwy





Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	961	224	570	898	461	225
v/c Ratio	0.66	0.67	0.34	0.69	0.69	0.14
Control Delay	28.3	25.4	14.7	24.3	27.6	0.2
Queue Delay	0.0	0.2	1.7	0.0	0.0	0.0
Total Delay	28.3	25.6	16.4	24.3	27.6	0.2
Queue Length 50th (ft)	158	69	96	214	220	0
Queue Length 95th (ft)	213	132	133	284	342	0
Internal Link Dist (ft)	437		181		388	
Turn Bay Length (ft)						160
Base Capacity (vph)	1465	383	1687	1310	667	1583
Starvation Cap Reductn	0	11	904	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.60	0.73	0.69	0.69	0.14

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	762	160	215	547	0	0	0	0	1150	155	216
Future Volume (veh/h)	0	762	160	215	547	0	0	0	0	1150	155	216
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	794	167	224	570	0				1052	365	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1349	281	365	1694	0				1450	761	
Arrive On Green	0.00	0.32	0.32	0.11	0.48	0.00				0.41	0.41	0.00
Sat Flow, veh/h	0	4401	883	1781	3647	0				3563	1870	1585
Grp Volume(v), veh/h	0	637	324	224	570	0				1052	365	0
Grp Sat Flow(s),veh/h/ln	0	1702	1711	1781	1777	0				1781	1870	1585
Q Serve(g_s), s	0.0	13.5	13.7	6.8	8.6	0.0				21.4	12.4	0.0
Cycle Q Clear(g_c), s	0.0	13.5	13.7	6.8	8.6	0.0				21.4	12.4	0.0
Prop In Lane	0.00		0.52	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1085	545	365	1694	0				1450	761	
V/C Ratio(X)	0.00	0.59	0.59	0.61	0.34	0.00				0.73	0.48	
Avail Cap(c_a), veh/h	0	1085	545	477	1694	0				1450	761	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.77	0.77	0.00				1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	24.6	24.6	17.3	14.0	0.0				21.5	18.8	0.0
Incr Delay (d2), s/veh	0.0	2.3	4.7	1.3	0.4	0.0				3.2	2.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.6	6.1	2.8	3.4	0.0				9.1	5.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	26.9	29.3	18.6	14.4	0.0				24.7	20.9	0.0
LnGrp LOS	A	C	C	B	B	A				C	C	
Approach Vol, veh/h		961			794						1417	A
Approach Delay, s/veh		27.7			15.6						23.7	
Approach LOS		C			B						C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	13.6	32.4		40.0		46.0
Change Period (Y+Rc), s	4.5	5.0		5.0		5.0
Max Green Setting (Gmax), s	14.5	22.0		35.0		41.0
Max Q Clear Time (g_c+I1), s	8.8	15.7		23.4		10.6
Green Ext Time (p_c), s	0.3	3.2		5.3		4.2

Intersection Summary		
HCM 6th Ctrl Delay		22.9
HCM 6th LOS		C

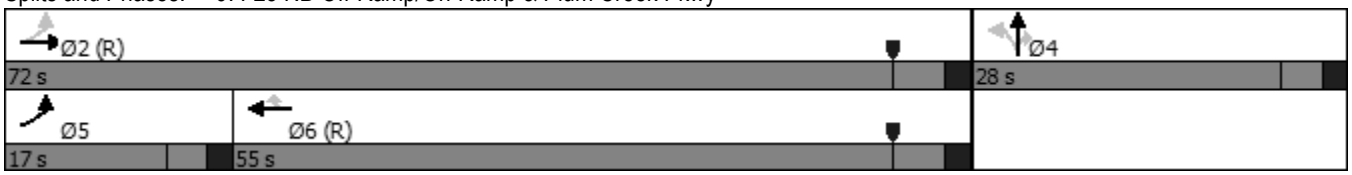
Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	239	1591	609	935	125	5	175
Future Volume (vph)	239	1591	609	935	125	5	175
Turn Type	pm+pt	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6			4	
Permitted Phases	2			6	4		4
Detector Phase	5	2	6	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0	5.0
Minimum Split (s)	10.0	31.0	24.0	24.0	40.0	40.0	40.0
Total Split (s)	17.0	72.0	55.0	55.0	28.0	28.0	28.0
Total Split (%)	17.0%	72.0%	55.0%	55.0%	28.0%	28.0%	28.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max
Act Effct Green (s)	67.0	66.0	50.5	50.5	23.0	23.0	23.0
Actuated g/C Ratio	0.67	0.66	0.50	0.50	0.23	0.23	0.23
v/c Ratio	0.72	0.48	0.63	0.51	0.28	0.28	0.24

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 83 (83%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 16.5
Intersection Capacity Utilization 95.7%
Analysis Period (min) 15

Splits and Phases: 9: I-25 NB Off-Ramp/On-Ramp & Plum Creek Pkwy





Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	244	1623	1079	496	109	103	100
v/c Ratio	0.72	0.48	0.63	0.51	0.28	0.28	0.24
Control Delay	22.0	9.1	15.7	3.4	34.1	22.3	10.6
Queue Delay	0.4	9.8	0.0	0.0	0.0	0.0	0.0
Total Delay	22.4	18.9	15.7	3.4	34.1	22.3	10.6
Queue Length 50th (ft)	53	169	204	0	61	36	7
Queue Length 95th (ft)	124	201	283	57	111	86	50
Internal Link Dist (ft)		181	431			480	
Turn Bay Length (ft)					350		150
Base Capacity (vph)	363	3356	1719	972	386	372	412
Starvation Cap Reductn	10	1716	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.99	0.63	0.51	0.28	0.28	0.24

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	239	1591	0	0	609	935	125	5	175	0	0	0
Future Volume (veh/h)	239	1591	0	0	609	935	125	5	175	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	244	1623	0	0	621	954	194	0	112			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	313	3370	0	0	989	1676	819	0	365			
Arrive On Green	0.08	0.66	0.00	0.00	0.53	0.53	0.23	0.00	0.23			
Sat Flow, veh/h	1781	5274	0	0	1870	3170	3563	0	1585			
Grp Volume(v), veh/h	244	1623	0	0	621	954	194	0	112			
Grp Sat Flow(s),veh/h/ln	1781	1702	0	0	1870	1585	1781	0	1585			
Q Serve(g_s), s	5.9	15.8	0.0	0.0	23.4	20.3	4.4	0.0	5.9			
Cycle Q Clear(g_c), s	5.9	15.8	0.0	0.0	23.4	20.3	4.4	0.0	5.9			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	313	3370	0	0	989	1676	819	0	365			
V/C Ratio(X)	0.78	0.48	0.00	0.00	0.63	0.57	0.24	0.00	0.31			
Avail Cap(c_a), veh/h	382	3370	0	0	989	1676	819	0	365			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.69	0.69	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	17.2	8.5	0.0	0.0	16.6	15.9	31.4	0.0	31.9			
Incr Delay (d2), s/veh	5.8	0.3	0.0	0.0	3.0	1.4	0.7	0.0	2.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	3.5	5.3	0.0	0.0	10.3	7.3	2.0	0.0	5.7			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.0	8.8	0.0	0.0	19.6	17.3	32.0	0.0	34.1			
LnGrp LOS	C	A	A	A	B	B	C	A	C			
Approach Vol, veh/h		1867			1575			306				
Approach Delay, s/veh		10.7			18.2			32.8				
Approach LOS		B			B			C				

Timer - Assigned Phs		2		4	5	6			
Phs Duration (G+Y+Rc), s		72.0		28.0	13.1	58.9			
Change Period (Y+Rc), s		6.0		5.0	5.0	6.0			
Max Green Setting (Gmax), s		66.0		23.0	12.0	49.0			
Max Q Clear Time (g_c+I1), s		17.8		7.9	7.9	25.4			
Green Ext Time (p_c), s		19.0		0.9	0.3	9.7			

Intersection Summary		
HCM 6th Ctrl Delay	15.6	
HCM 6th LOS	B	

Notes

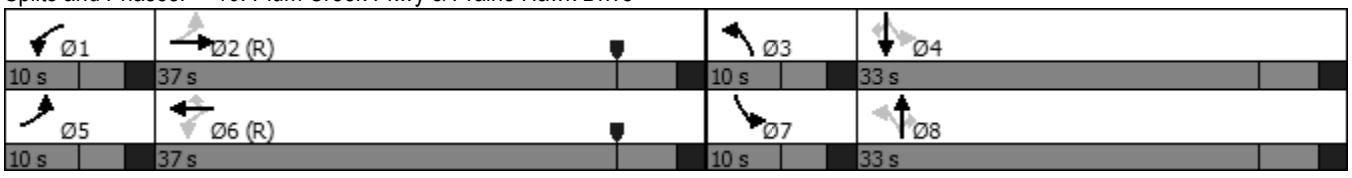
User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	32	596	33	853	98	45	41	187	275	63	38
Future Volume (vph)	32	596	33	853	98	45	41	187	275	63	38
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2	1	6		3	8		7	4	
Permitted Phases	2		6		6	8		8	4		4
Detector Phase	5	2	1	6	6	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	28.0	10.0	33.0	33.0	10.0	33.0	33.0	10.0	28.0	28.0
Total Split (s)	10.0	37.0	10.0	37.0	37.0	10.0	33.0	33.0	10.0	33.0	33.0
Total Split (%)	11.1%	41.1%	11.1%	41.1%	41.1%	11.1%	36.7%	36.7%	11.1%	36.7%	36.7%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None	Max	Max	Max
Act Effct Green (s)	39.0	35.0	39.0	35.0	35.0	33.0	27.0	27.0	35.0	31.0	31.0
Actuated g/C Ratio	0.43	0.39	0.43	0.39	0.39	0.37	0.30	0.30	0.39	0.34	0.34
v/c Ratio	0.17	0.48	0.12	0.67	0.15	0.10	0.08	0.33	0.30	0.11	0.06

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 20.7
Intersection Capacity Utilization 51.9%
Analysis Period (min) 15

Splits and Phases: 10: Plum Creek Pkwy & Prairie Hawk Drive





Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	35	657	36	927	107	49	45	203	299	68	41
v/c Ratio	0.17	0.48	0.12	0.67	0.15	0.10	0.08	0.33	0.30	0.11	0.06
Control Delay	15.2	23.0	14.2	26.8	1.7	16.2	23.2	5.2	18.0	22.8	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.2	23.0	14.2	26.8	1.7	16.2	23.2	5.2	18.0	22.8	0.2
Queue Length 50th (ft)	10	155	11	243	0	16	18	0	54	28	0
Queue Length 95th (ft)	27	210	27	317	14	38	44	48	81	59	0
Internal Link Dist (ft)		246		922			503			698	
Turn Bay Length (ft)	230		250		230	250		250	250		250
Base Capacity (vph)	203	1374	307	1376	712	511	558	617	1011	641	648
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.48	0.12	0.67	0.15	0.10	0.08	0.33	0.30	0.11	0.06

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	596	8	33	853	98	45	41	187	275	63	38
Future Volume (veh/h)	32	596	8	33	853	98	45	41	187	275	63	38
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	35	648	9	36	927	0	49	45	203	299	68	41
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	238	1376	19	331	1364		501	531	450	936	561	476
Arrive On Green	0.03	0.38	0.38	0.03	0.38	0.00	0.04	0.28	0.28	0.06	0.30	0.30
Sat Flow, veh/h	1781	3588	50	1781	3554	1585	1781	1870	1585	3456	1870	1585
Grp Volume(v), veh/h	35	321	336	36	927	0	49	45	203	299	68	41
Grp Sat Flow(s),veh/h/ln	1781	1777	1861	1781	1777	1585	1781	1870	1585	1728	1870	1585
Q Serve(g_s), s	1.1	12.2	12.2	1.1	19.6	0.0	1.7	1.6	9.5	5.0	2.4	1.7
Cycle Q Clear(g_c), s	1.1	12.2	12.2	1.1	19.6	0.0	1.7	1.6	9.5	5.0	2.4	1.7
Prop In Lane	1.00		0.03	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	238	681	714	331	1364		501	531	450	936	561	476
V/C Ratio(X)	0.15	0.47	0.47	0.11	0.68		0.10	0.08	0.45	0.32	0.12	0.09
Avail Cap(c_a), veh/h	279	681	714	371	1364		530	561	476	936	561	476
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.9	20.9	20.9	16.5	23.1	0.0	21.2	23.7	26.5	21.7	22.9	22.6
Incr Delay (d2), s/veh	0.3	2.3	2.2	0.1	2.7	0.0	0.1	0.1	0.7	0.9	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	5.1	5.3	0.4	7.9	0.0	0.7	0.7	3.6	2.3	1.1	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.2	23.2	23.1	16.7	25.9	0.0	21.3	23.7	27.2	22.6	23.3	23.0
LnGrp LOS	B	C	C	B	C		C	C	C	C	C	C
Approach Vol, veh/h		692			963	A		297			408	
Approach Delay, s/veh		22.9			25.5			25.7			22.7	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	40.5	8.5	33.0	7.9	40.6	10.0	31.5
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	5.0	31.0	5.0	27.0	5.0	31.0	5.0	27.0
Max Q Clear Time (g_c+I1), s	3.1	14.2	3.7	4.4	3.1	21.6	7.0	11.5
Green Ext Time (p_c), s	0.0	3.3	0.0	0.4	0.0	4.0	0.0	0.8

Intersection Summary	
HCM 6th Ctrl Delay	24.3
HCM 6th LOS	C

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

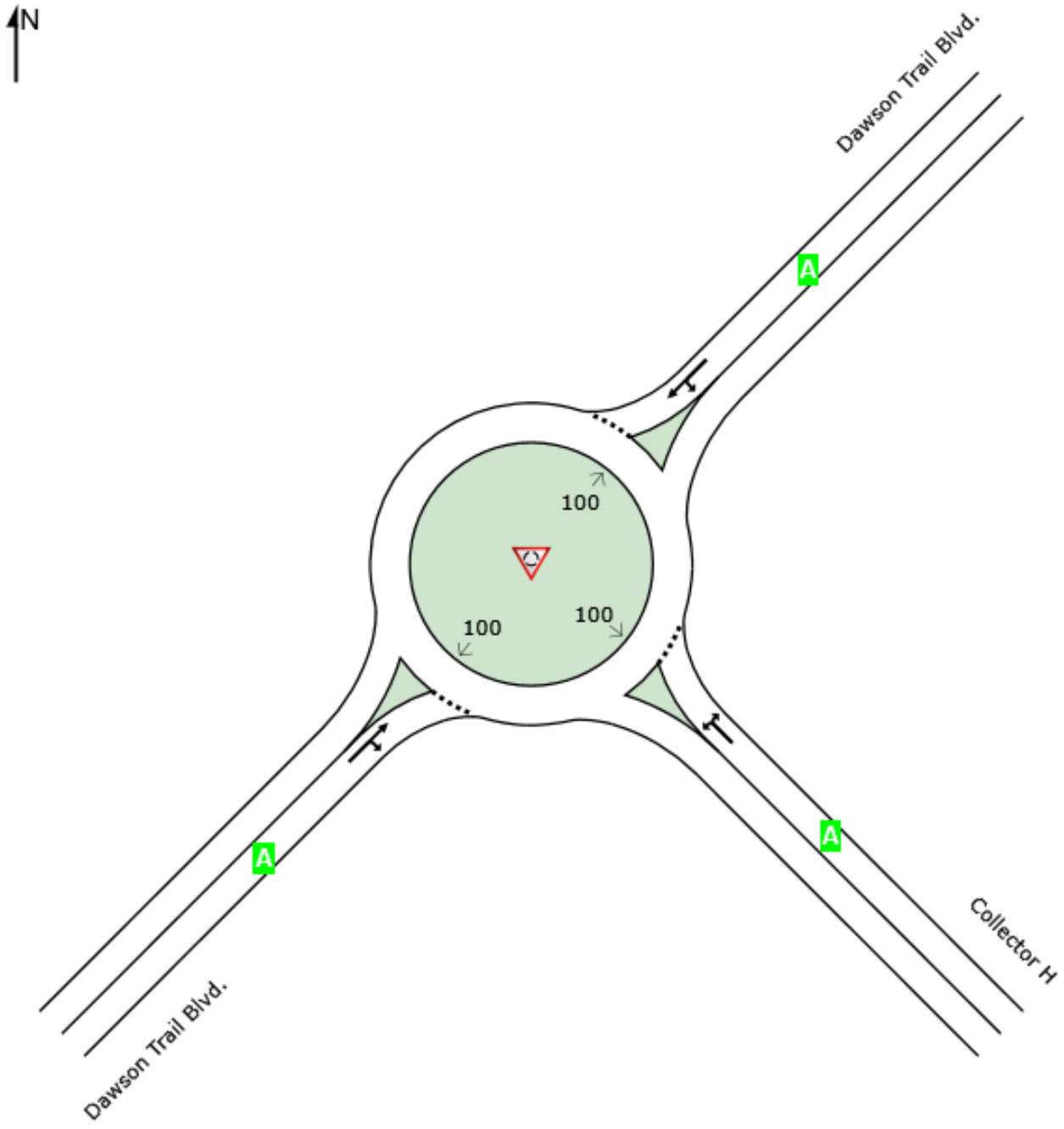
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 102 [Int #102_2025 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches			Intersection
	Southeast	Northeast	Southwest	
LOS	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 2:09:37 PM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #102-mod.sip9

DELAY (CONTROL)

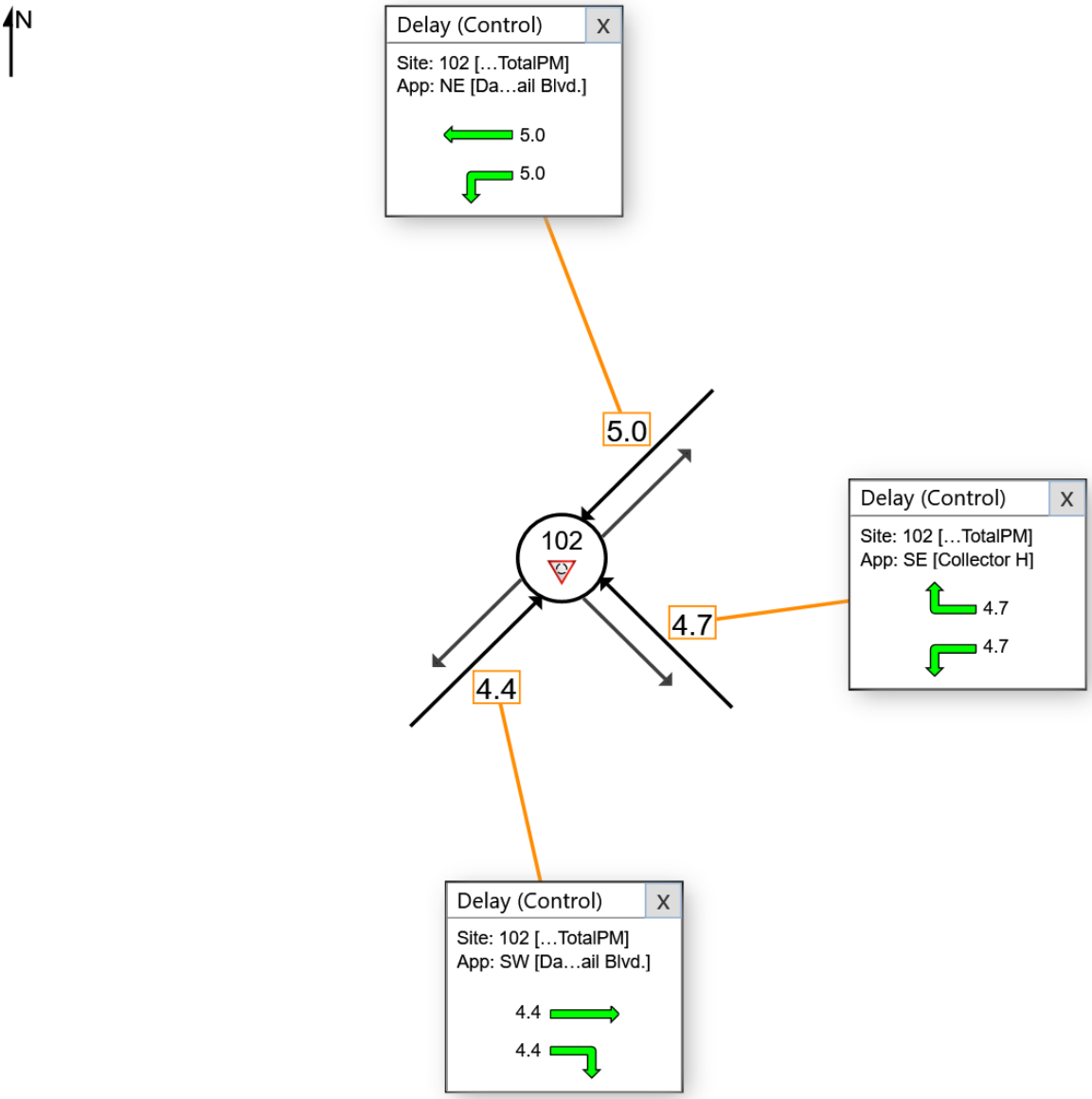
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 102 [Int #102_2025 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popups boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

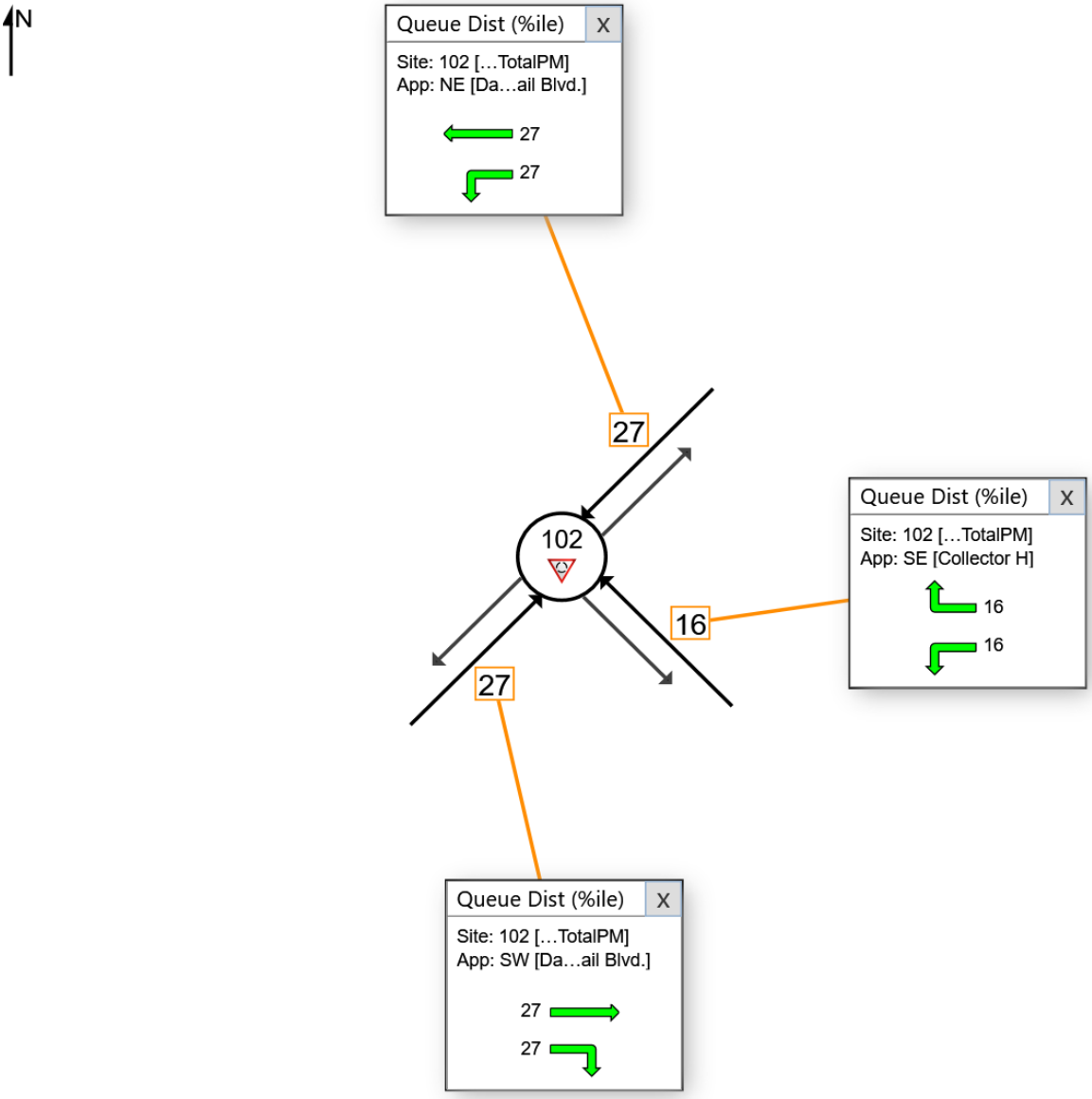
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 102 [Int #102_2025 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	18	257	104	18	516
Future Vol, veh/h	0	18	257	104	18	516
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	0	250	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	20	279	113	20	561

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	279	0	0	392	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	4.12	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	0	760	-	-	1167	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	760	-	-	1167	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.9	0	0.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	760	1167	-
HCM Lane V/C Ratio	-	-	0.026	0.017	-
HCM Control Delay (s)	-	-	9.9	8.1	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

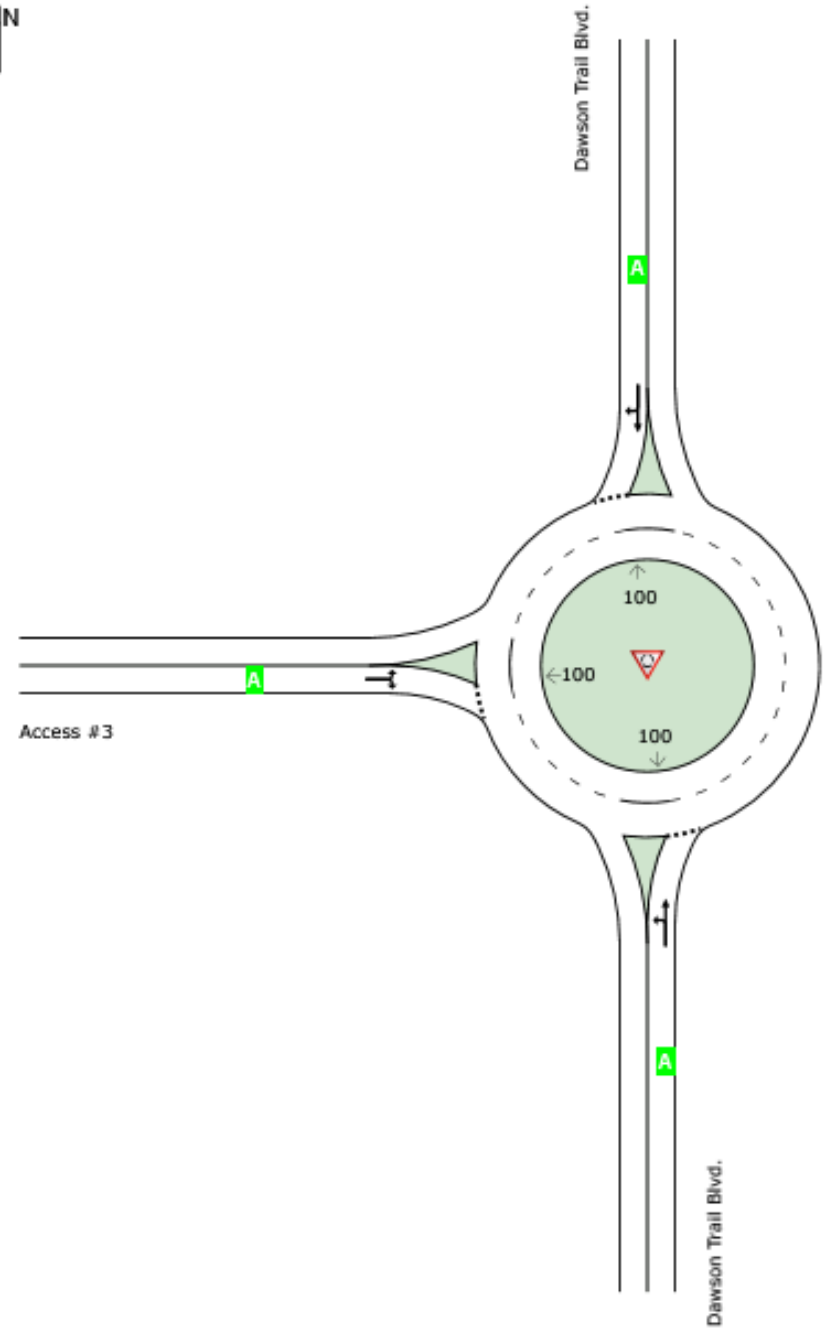
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 104 [Int#104_2025 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches			Intersection
	South	North	West	
LOS	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 2:23:34 PM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #104-mod.sip9

DELAY (CONTROL)

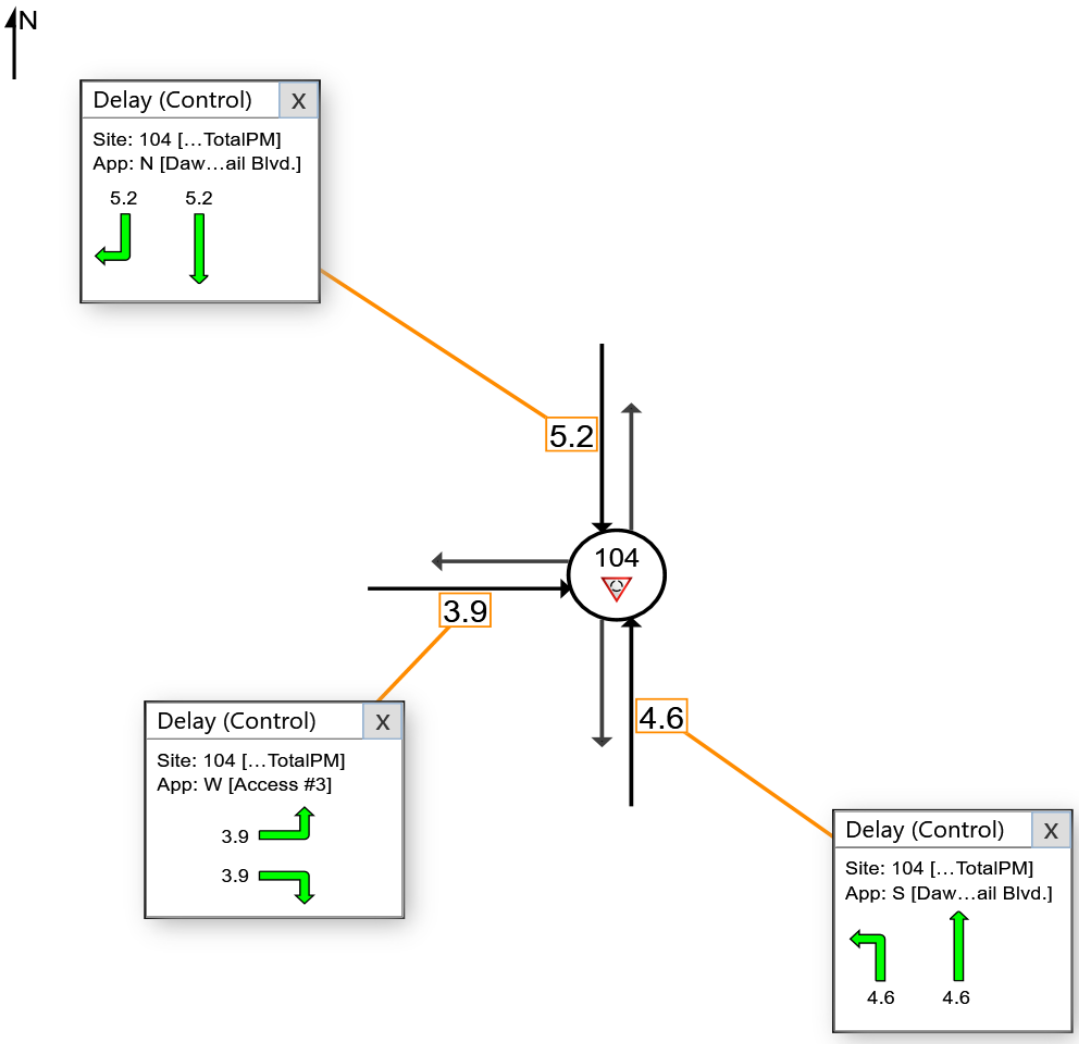
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 104 [Int#104_2025 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

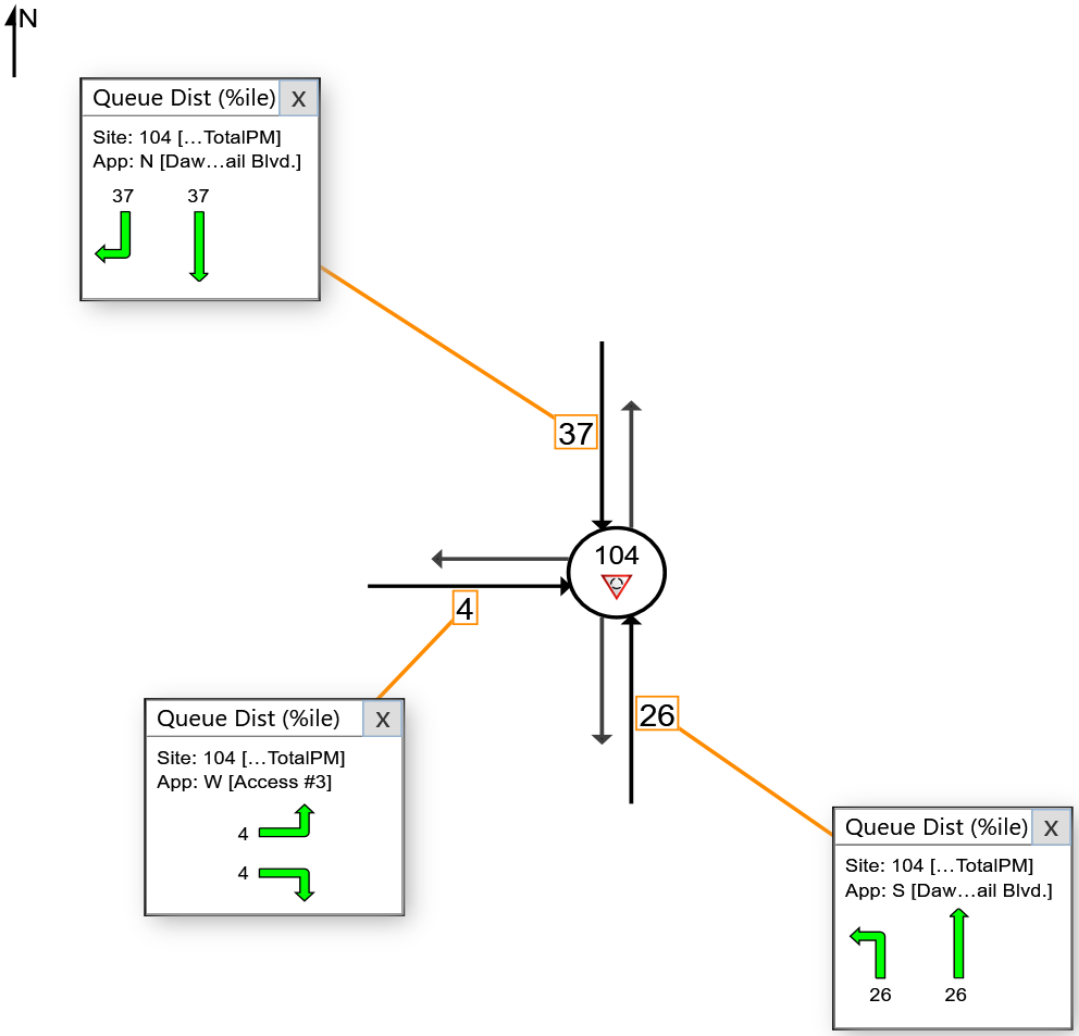
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 104 [Int#104_2025 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



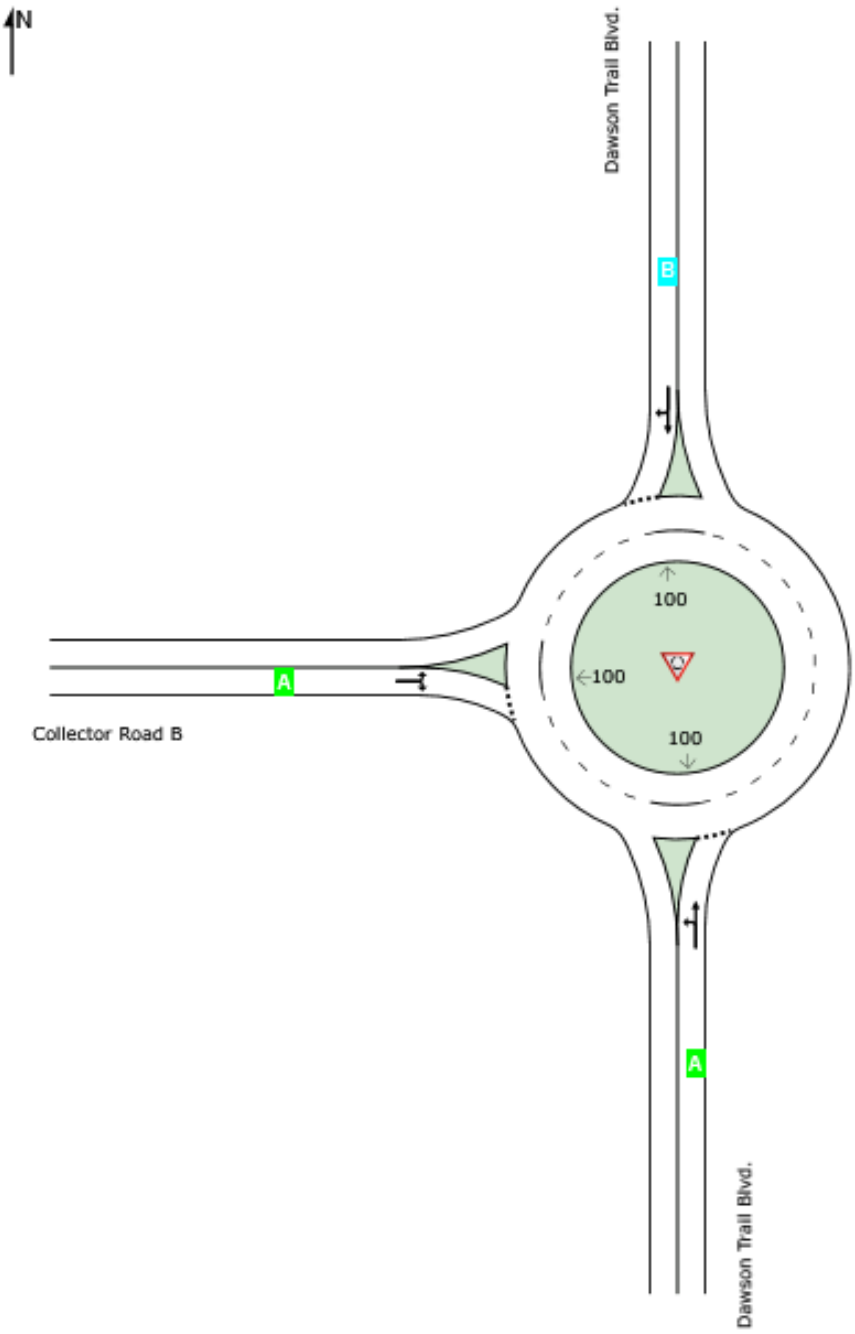
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 101 [Int#105_2025 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches			Intersection
	South	North	West	
LOS	A	B	A	B



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 2:15:16 PM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #105.sip9

DELAY (CONTROL)

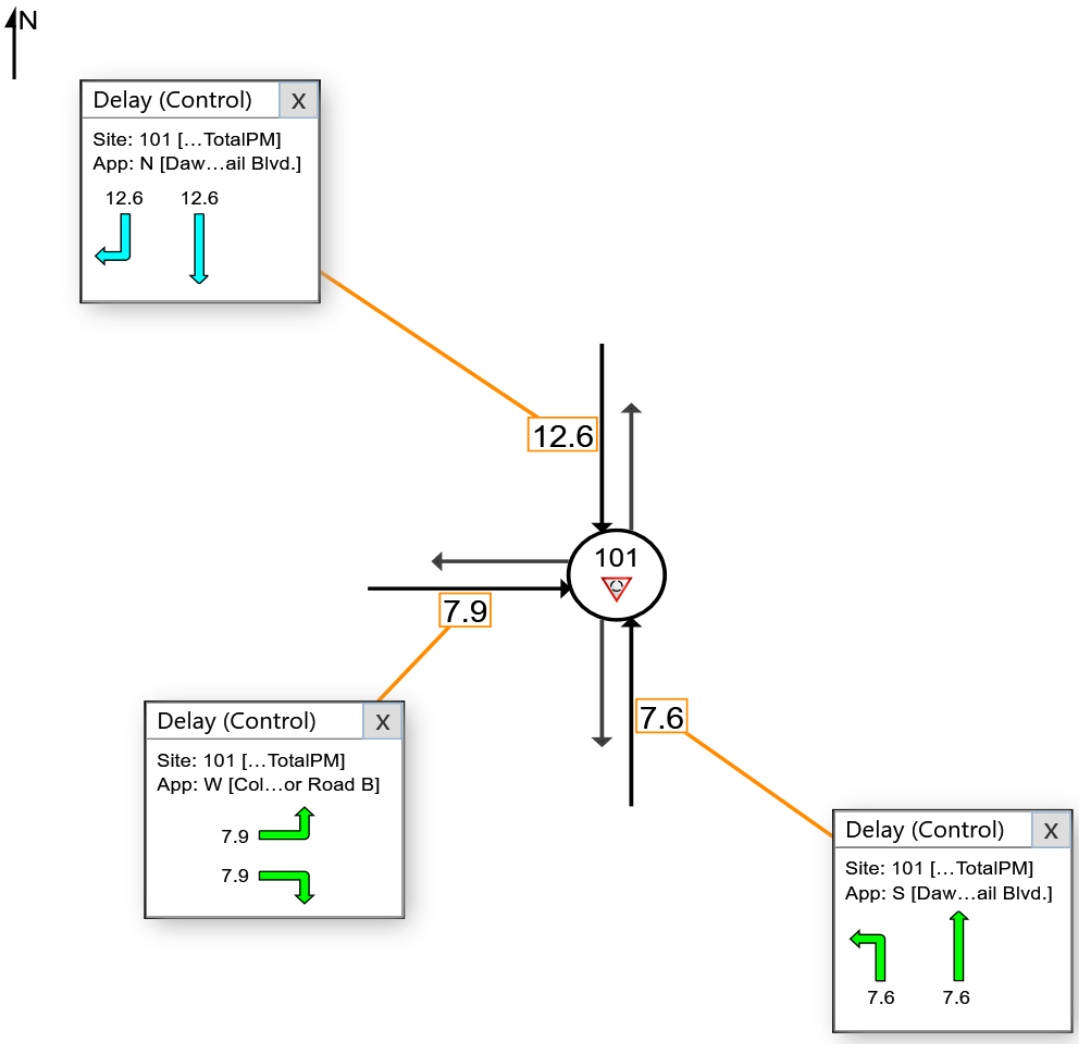
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 101 [Int#105_2025 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

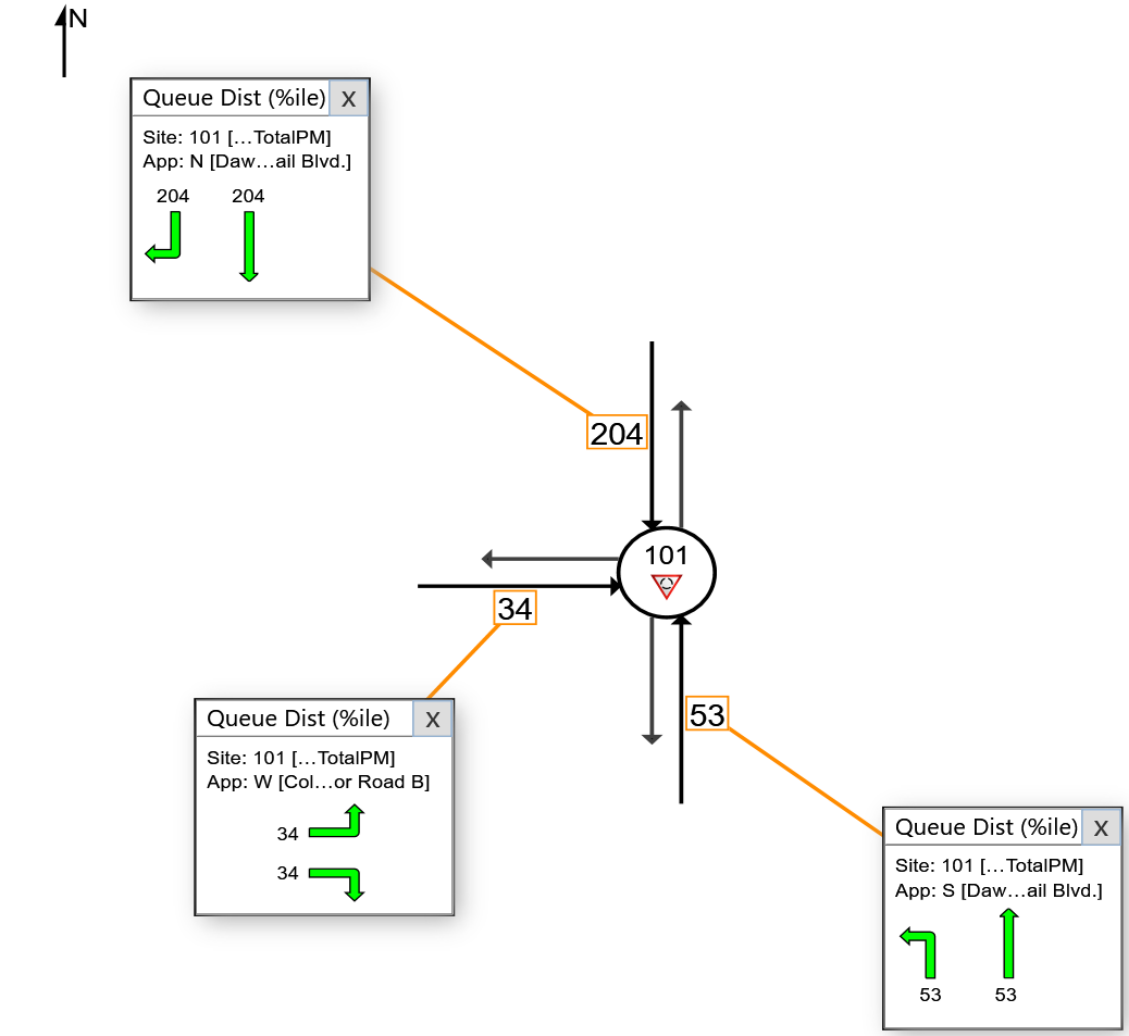
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 101 [Int#105_2025 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



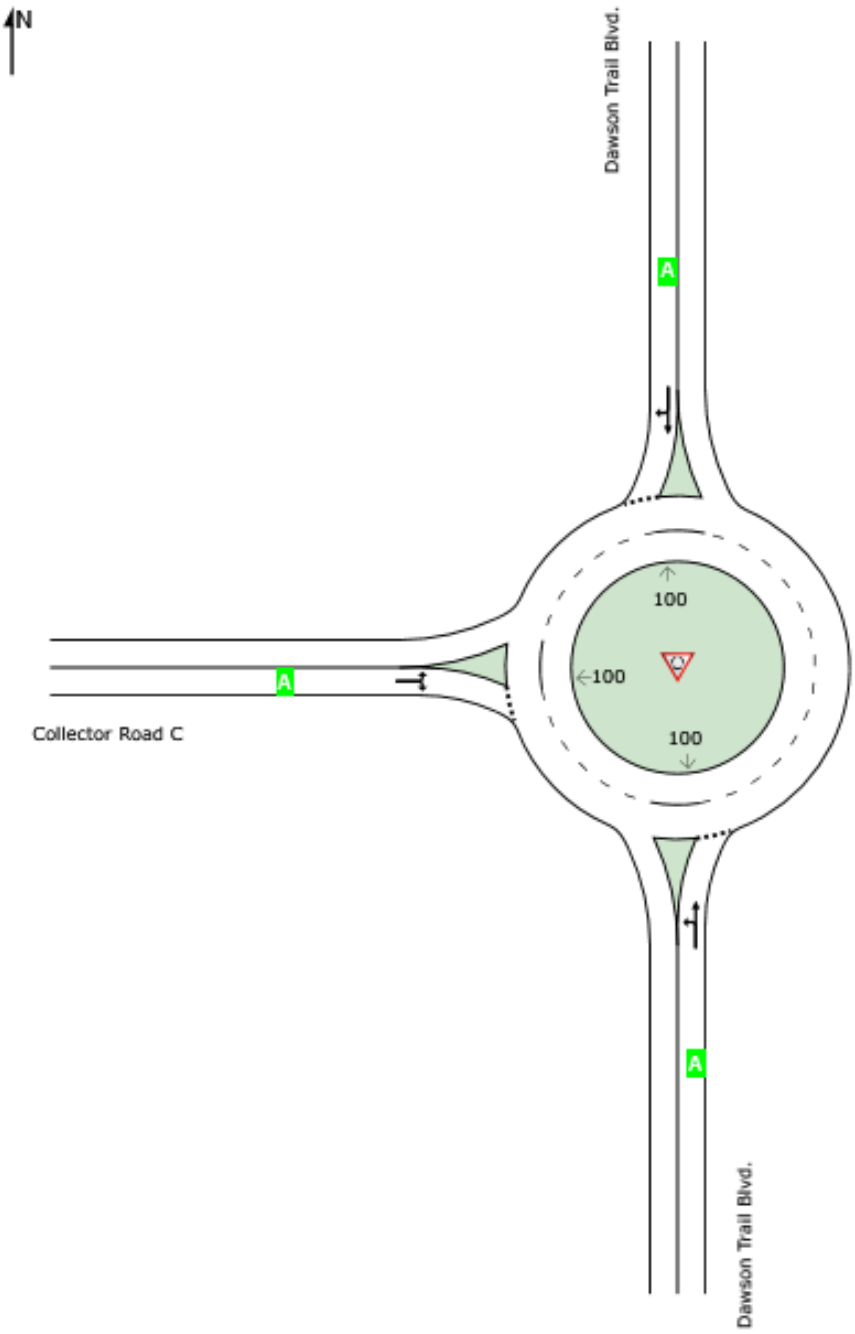
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 106 [Int#106_2025 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches			Intersection
	South	North	West	
LOS	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 2:16:50 PM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int#106-mod.sip9

DELAY (CONTROL)

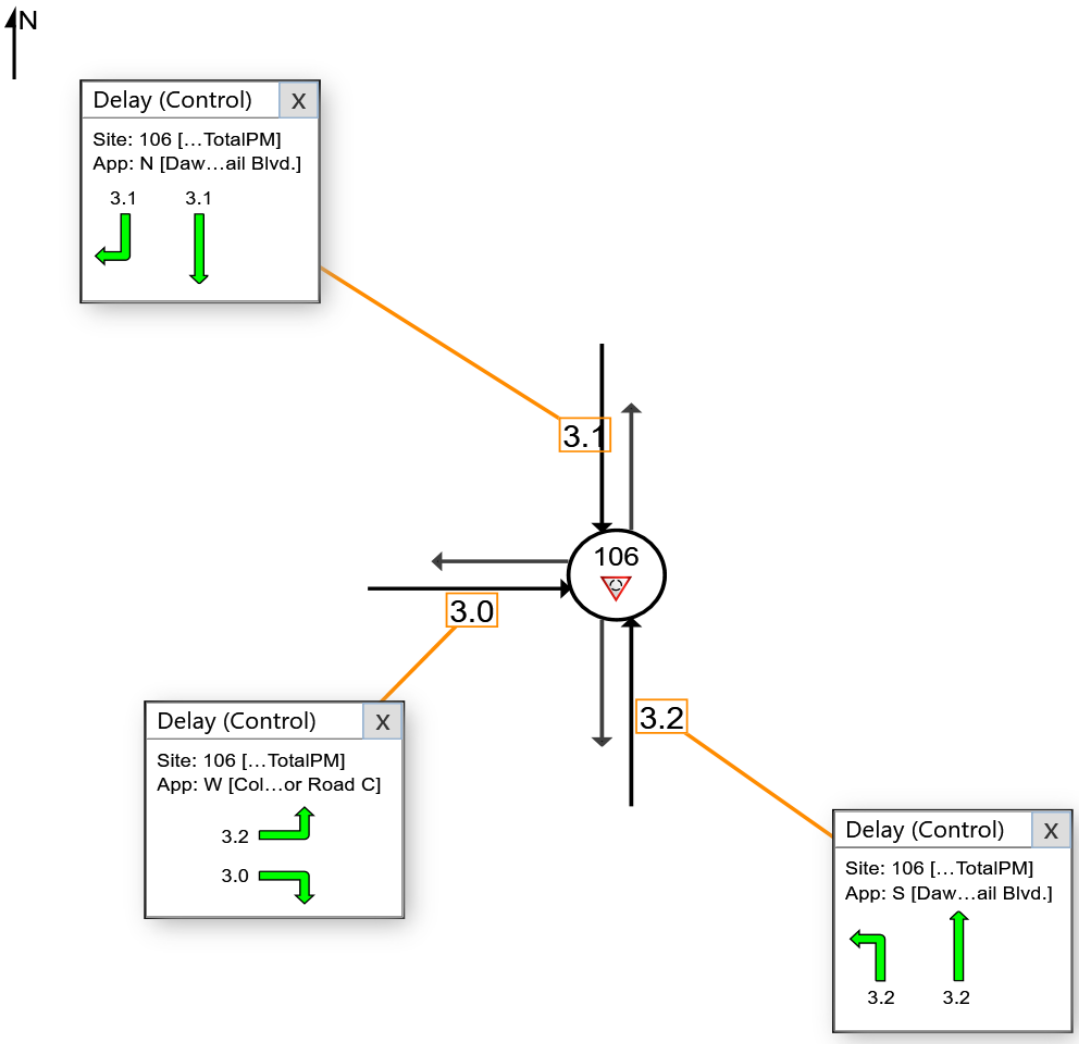
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 106 [Int#106_2025 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

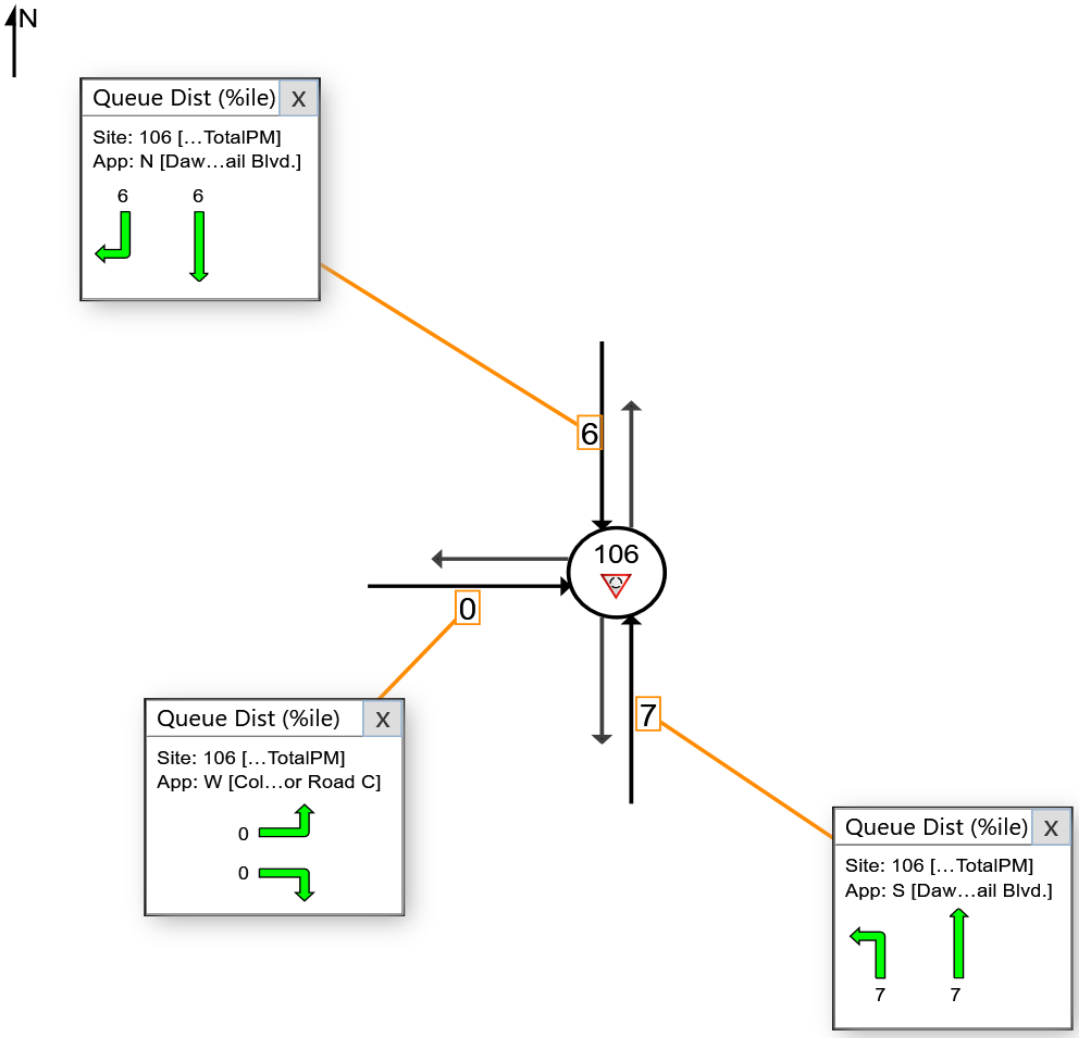
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 106 [Int#106_2025 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↱		↰	↱	
Traffic Vol, veh/h	12	5	0	54	5	1	0	118	40	5	174	30
Future Vol, veh/h	12	5	0	54	5	1	0	118	40	5	174	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	5	0	59	5	1	0	128	43	5	189	33

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	369	387	206	368	382	150	-	0	0	171	0	0
Stage 1	216	216	-	150	150	-	-	-	-	-	-	-
Stage 2	153	171	-	218	232	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	588	547	835	588	551	896	0	-	-	1406	-	-
Stage 1	786	724	-	853	773	-	0	-	-	-	-	-
Stage 2	849	757	-	784	713	-	0	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	582	545	835	582	549	896	-	-	-	1406	-	-
Mov Cap-2 Maneuver	582	545	-	582	549	-	-	-	-	-	-	-
Stage 1	786	721	-	853	773	-	-	-	-	-	-	-
Stage 2	842	757	-	775	710	-	-	-	-	-	-	-

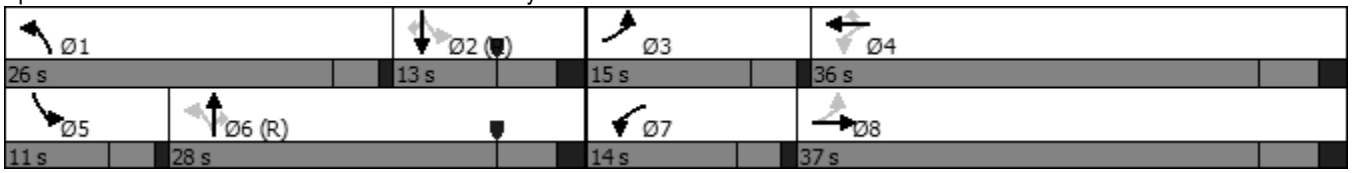
Approach	EB	WB	NB	SB
HCM Control Delay, s	11.5	12	0	0.2
HCM LOS	B	B		

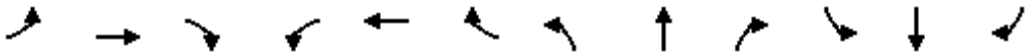
Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	-	-	571	582	1406	-	-
HCM Lane V/C Ratio	-	-	0.032	0.112	0.004	-	-
HCM Control Delay (s)	-	-	11.5	12	7.6	-	-
HCM Lane LOS	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	-	-	0.1	0.4	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	835	277	79	801	157	234	127	72	156	178	235
Future Volume (vph)	22	835	277	79	801	157	234	127	72	156	178	235
Turn Type	pm+pt	NA	Free	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		Free	4		4	6		6	2		2
Detector Phase	3	8		7	4	4	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	5.0	10.0	10.0	5.0	4.0	4.0
Minimum Split (s)	9.5	31.0		14.5	31.0	31.0	9.5	16.0	16.0	9.5	10.0	10.0
Total Split (s)	15.0	37.0		14.0	36.0	36.0	26.0	28.0	28.0	11.0	13.0	13.0
Total Split (%)	16.7%	41.1%		15.6%	40.0%	40.0%	28.9%	31.1%	31.1%	12.2%	14.4%	14.4%
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	2.0		1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	34.5	28.4	90.0	41.6	35.9	35.9	37.2	26.9	26.9	35.4	26.0	26.0
Actuated g/C Ratio	0.38	0.32	1.00	0.46	0.40	0.40	0.41	0.30	0.30	0.39	0.29	0.29
v/c Ratio	0.10	0.79	0.18	0.31	0.65	0.25	0.29	0.26	0.15	0.35	0.40	0.43

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 32 (36%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 21.5
Intersection Capacity Utilization 81.7%
Analysis Period (min) 15

Splits and Phases: 1: Wilcox St. & Plum Creek Pkwy.





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	23	879	292	92	931	183	266	144	82	188	214	283
v/c Ratio	0.10	0.79	0.18	0.31	0.65	0.25	0.29	0.26	0.15	0.35	0.40	0.43
Control Delay	12.1	33.5	0.3	14.9	24.4	9.0	17.6	28.3	2.0	20.9	31.8	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.1	33.5	0.3	14.9	24.4	9.0	17.6	28.3	2.0	20.9	31.8	6.3
Queue Length 50th (ft)	6	232	0	37	209	35	48	67	0	69	104	0
Queue Length 95th (ft)	18	296	0	m57	307	77	75	117	10	111	167	48
Internal Link Dist (ft)		553			473			812			658	
Turn Bay Length (ft)	280		250	185			190		195	130		130
Base Capacity (vph)	345	1218	1583	294	1474	752	1214	551	555	535	537	658
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.72	0.18	0.31	0.63	0.24	0.22	0.26	0.15	0.35	0.40	0.43

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	835	277	79	801	157	234	127	72	156	178	235
Future Volume (veh/h)	22	835	277	79	801	157	234	127	72	156	178	235
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1885	1885	1885	1856	1856	1856	1870	1870	1870
Adj Flow Rate, veh/h	23	879	0	92	931	183	266	144	82	188	214	283
Peak Hour Factor	0.95	0.95	0.95	0.86	0.86	0.86	0.88	0.88	0.88	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2	1	1	1	3	3	3	2	2	2
Cap, veh/h	184	1046		299	1325	590	800	567	480	504	573	484
Arrive On Green	0.02	0.29	0.00	0.03	0.12	0.12	0.08	0.31	0.31	0.08	0.31	0.31
Sat Flow, veh/h	1781	3554	1585	1795	3582	1595	3428	1856	1569	1781	1870	1582
Grp Volume(v), veh/h	23	879	0	92	931	183	266	144	82	188	214	283
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1795	1791	1595	1714	1856	1569	1781	1870	1582
Q Serve(g_s), s	0.8	20.9	0.0	2.9	22.5	9.4	4.7	5.3	3.4	6.5	8.1	13.6
Cycle Q Clear(g_c), s	0.8	20.9	0.0	2.9	22.5	9.4	4.7	5.3	3.4	6.5	8.1	13.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	184	1046		299	1325	590	800	567	480	504	573	484
V/C Ratio(X)	0.12	0.84		0.31	0.70	0.31	0.33	0.25	0.17	0.37	0.37	0.58
Avail Cap(c_a), veh/h	359	1224		319	1325	590	1373	567	480	504	573	484
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.82	0.82	0.82	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.6	29.8	0.0	21.1	34.7	29.0	19.0	23.5	22.9	19.3	24.5	26.4
Incr Delay (d2), s/veh	0.1	4.7	0.0	0.2	1.4	0.2	0.1	1.1	0.8	0.2	1.9	5.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	9.2	0.0	1.2	10.9	3.9	1.8	2.5	1.3	2.7	3.8	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.7	34.5	0.0	21.3	36.1	29.3	19.1	24.6	23.7	19.5	26.3	31.5
LnGrp LOS	C	C		C	D	C	B	C	C	B	C	C
Approach Vol, veh/h		902	A		1206			492			685	
Approach Delay, s/veh		34.2			34.0			21.5			26.6	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	33.6	6.2	39.3	11.0	33.5	13.0	32.5
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	22.0	7.0	11.0	30.0	7.0	22.0	10.0	31.0
Max Q Clear Time (g_c+I1), s	6.7	15.6	2.8	24.5	8.5	7.3	4.9	22.9
Green Ext Time (p_c), s	0.3	0.0	0.0	3.1	0.0	1.3	0.0	3.6

Intersection Summary	
HCM 6th Ctrl Delay	30.6
HCM 6th LOS	C

Notes

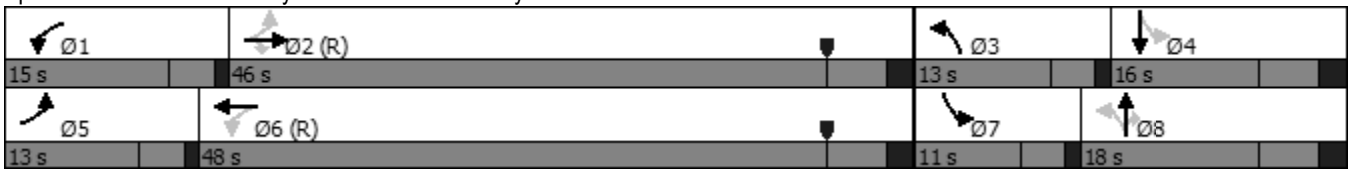
User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	189	749	145	146	720	191	111	142	185	118	191
Future Volume (vph)	189	749	145	146	720	191	111	142	185	118	191
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Free
Protected Phases	5	2		1	6	3	8		7	4	
Permitted Phases	2		2	6		8		8	4		Free
Detector Phase	5	2	2	1	6	3	8	8	7	4	
Switch Phase											
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0	3.0	5.0	5.0	3.0	5.0	
Minimum Split (s)	9.5	32.0	32.0	9.5	32.0	9.5	11.0	11.0	9.5	11.0	
Total Split (s)	13.0	46.0	46.0	15.0	48.0	13.0	18.0	18.0	11.0	16.0	
Total Split (%)	14.4%	51.1%	51.1%	16.7%	53.3%	14.4%	20.0%	20.0%	12.2%	17.8%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	6.0	4.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None	None	
Act Effct Green (s)	54.3	44.7	44.7	54.0	44.5	21.6	10.9	10.9	18.1	9.1	90.0
Actuated g/C Ratio	0.60	0.50	0.50	0.60	0.49	0.24	0.12	0.12	0.20	0.10	1.00
v/c Ratio	0.59	0.43	0.18	0.38	0.61	0.64	0.53	0.47	0.66	0.65	0.13

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 41 (46%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 25.0
Intersection Capacity Utilization 67.7%
Analysis Period (min) 15

Splits and Phases: 2: Perry St. & Plum Creek Pkwy.





Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	193	764	148	170	1058	208	121	154	197	126	203
v/c Ratio	0.59	0.43	0.18	0.38	0.61	0.64	0.53	0.47	0.66	0.65	0.13
Control Delay	12.6	19.8	9.3	16.0	30.1	37.5	45.9	11.5	40.1	55.2	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.6	19.8	9.3	16.0	30.1	37.5	45.9	11.5	40.1	55.2	0.2
Queue Length 50th (ft)	50	205	41	57	250	96	65	0	91	69	0
Queue Length 95th (ft)	m61	271	m78	103	314	161	120	54	153	#136	0
Internal Link Dist (ft)		473			1330		455			497	
Turn Bay Length (ft)	170		70	100		185		65	120		120
Base Capacity (vph)	356	1774	842	513	1730	331	250	343	299	211	1615
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.43	0.18	0.33	0.61	0.63	0.48	0.45	0.66	0.60	0.13

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	189	749	145	146	720	190	191	111	142	185	118	191
Future Volume (veh/h)	189	749	145	146	720	190	191	111	142	185	118	191
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	193	764	148	170	837	221	208	121	154	197	126	0
Peak Hour Factor	0.98	0.98	0.98	0.86	0.86	0.86	0.92	0.92	0.92	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	0	0	0
Cap, veh/h	482	1836	817	400	1426	376	302	225	190	287	185	
Arrive On Green	0.02	0.17	0.17	0.14	1.00	1.00	0.10	0.12	0.12	0.08	0.10	0.00
Sat Flow, veh/h	1795	3582	1594	1795	2802	740	1795	1885	1586	1810	1900	1610
Grp Volume(v), veh/h	193	764	148	170	535	523	208	121	154	197	126	0
Grp Sat Flow(s),veh/h/ln	1795	1791	1594	1795	1791	1750	1795	1885	1586	1810	1900	1610
Q Serve(g_s), s	4.4	17.2	7.2	4.1	0.0	0.0	9.0	5.4	8.5	7.0	5.8	0.0
Cycle Q Clear(g_c), s	4.4	17.2	7.2	4.1	0.0	0.0	9.0	5.4	8.5	7.0	5.8	0.0
Prop In Lane	1.00		1.00	1.00		0.42	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	482	1836	817	400	912	891	302	225	190	287	185	
V/C Ratio(X)	0.40	0.42	0.18	0.42	0.59	0.59	0.69	0.54	0.81	0.69	0.68	
Avail Cap(c_a), veh/h	533	1836	817	498	912	891	302	251	211	287	211	
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.69	0.69	0.69	0.78	0.78	0.78	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	9.3	25.3	21.2	10.2	0.0	0.0	33.3	37.3	38.6	35.4	39.3	0.0
Incr Delay (d2), s/veh	0.1	0.5	0.3	0.2	2.2	2.2	5.5	1.5	18.4	5.6	6.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	8.2	2.8	1.3	0.5	0.5	4.4	2.5	4.2	4.6	3.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.4	25.8	21.5	10.4	2.2	2.2	38.7	38.7	57.0	41.0	45.7	0.0
LnGrp LOS	A	C	C	B	A	A	D	D	E	D	D	
Approach Vol, veh/h		1105			1228			483			323	A
Approach Delay, s/veh		22.4			3.3			44.6			42.8	
Approach LOS		C			A			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.1	52.1	13.0	14.8	10.4	51.8	11.0	16.8
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	11.0	40.0	9.0	10.0	9.0	42.0	7.0	12.0
Max Q Clear Time (g_c+I1), s	6.1	19.2	11.0	7.8	6.4	2.0	9.0	10.5
Green Ext Time (p_c), s	0.1	5.7	0.0	0.1	0.0	8.5	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	20.4
HCM 6th LOS	C

Notes

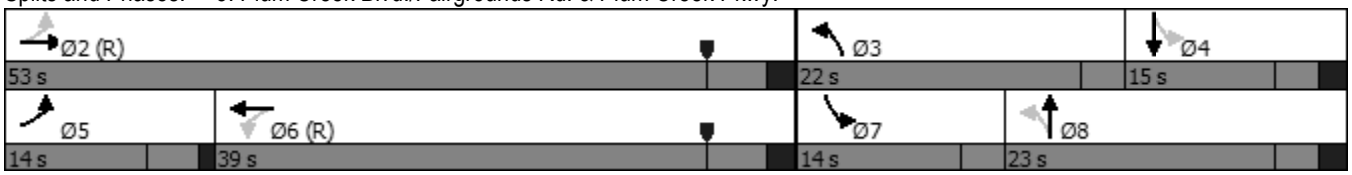
User approved pedestrian interval to be less than phase max green.

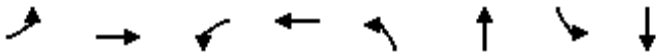
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	91	744	53	758	258	0	3	3
Future Volume (vph)	91	744	53	758	258	0	3	3
Turn Type	pm+pt	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases	5	2		6	3	8	7	4
Permitted Phases	2		6		8		4	
Detector Phase	5	2	6	6	3	8	7	4
Switch Phase								
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0	3.0	2.0
Minimum Split (s)	9.5	33.0	28.0	28.0	14.5	10.0	9.5	7.0
Total Split (s)	14.0	53.0	39.0	39.0	22.0	23.0	14.0	15.0
Total Split (%)	15.6%	58.9%	43.3%	43.3%	24.4%	25.6%	15.6%	16.7%
Yellow Time (s)	3.5	4.0	4.0	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	6.0	6.0	3.0	5.0	3.0	5.0
Lead/Lag	Lead		Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	C-Max	None	Max	None	Max
Act Effct Green (s)	48.5	47.0	36.7	36.7	34.0	30.4	20.7	14.0
Actuated g/C Ratio	0.54	0.52	0.41	0.41	0.38	0.34	0.23	0.16
v/c Ratio	0.34	0.59	0.35	0.61	0.54	0.07	0.01	0.18

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 44 (49%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 16.6
Intersection Capacity Utilization 71.8%
Analysis Period (min) 15

Splits and Phases: 3: Plum Creek Blvd./Fairgrounds Rd. & Plum Creek Pkwy.





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	100	1083	62	889	293	49	4	52
v/c Ratio	0.34	0.59	0.35	0.61	0.54	0.07	0.01	0.18
Control Delay	13.6	8.7	27.6	24.2	25.2	0.2	19.0	14.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.6	8.7	27.6	24.2	25.2	0.2	19.0	14.1
Queue Length 50th (ft)	15	77	25	213	122	0	1	2
Queue Length 95th (ft)	m52	197	61	270	187	0	7	31
Internal Link Dist (ft)		1330		637		613		434
Turn Bay Length (ft)	70		55				110	
Base Capacity (vph)	322	1821	179	1457	568	749	464	294
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.59	0.35	0.61	0.52	0.07	0.01	0.18

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	91	744	241	53	758	7	258	0	43	3	3	40
Future Volume (veh/h)	91	744	241	53	758	7	258	0	43	3	3	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	100	818	265	62	881	8	293	0	49	4	4	48
Peak Hour Factor	0.91	0.91	0.91	0.86	0.86	0.86	0.88	0.88	0.88	0.84	0.84	0.84
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	0	0	0
Cap, veh/h	361	1519	492	327	1711	16	482	0	431	238	14	167
Arrive On Green	0.10	1.00	1.00	0.47	0.47	0.47	0.16	0.00	0.27	0.00	0.11	0.11
Sat Flow, veh/h	1795	2657	860	525	3637	33	1795	0	1596	1810	125	1500
Grp Volume(v), veh/h	100	551	532	62	434	455	293	0	49	4	0	52
Grp Sat Flow(s),veh/h/ln	1795	1791	1727	525	1791	1879	1795	0	1596	1810	0	1625
Q Serve(g_s), s	2.4	0.0	0.0	6.4	15.2	15.2	12.4	0.0	2.1	0.2	0.0	2.6
Cycle Q Clear(g_c), s	2.4	0.0	0.0	6.4	15.2	15.2	12.4	0.0	2.1	0.2	0.0	2.6
Prop In Lane	1.00		0.50	1.00		0.02	1.00		1.00	1.00		0.92
Lane Grp Cap(c), veh/h	361	1023	987	327	843	884	482	0	431	238	0	181
V/C Ratio(X)	0.28	0.54	0.54	0.19	0.51	0.51	0.61	0.00	0.11	0.02	0.00	0.29
Avail Cap(c_a), veh/h	459	1023	987	327	843	884	570	0	431	454	0	181
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.87	0.87	0.87	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.2	0.0	0.0	14.3	16.7	16.7	26.9	0.0	24.8	35.4	0.0	36.7
Incr Delay (d2), s/veh	0.4	1.8	1.8	1.3	2.2	2.1	0.6	0.0	0.5	0.0	0.0	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.5	0.5	0.8	6.3	6.6	5.2	0.0	0.8	0.1	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.6	1.8	1.8	15.6	18.9	18.8	27.5	0.0	25.3	35.4	0.0	40.7
LnGrp LOS	B	A	A	B	B	B	C	A	C	D	A	D
Approach Vol, veh/h		1183			951			342			56	
Approach Delay, s/veh		2.6			18.6			27.2			40.3	
Approach LOS		A			B			C			D	

Timer - Assigned Phs	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	57.4	17.6	15.0	9.1	48.3	3.3	29.3
Change Period (Y+Rc), s	6.0	3.0	5.0	4.5	6.0	3.0	5.0
Max Green Setting (Gmax), s	47.0	19.0	10.0	9.5	33.0	11.0	18.0
Max Q Clear Time (g_c+I1), s	2.0	14.4	4.6	4.4	17.2	2.2	4.1
Green Ext Time (p_c), s	9.0	0.2	0.0	0.1	5.6	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	12.8
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

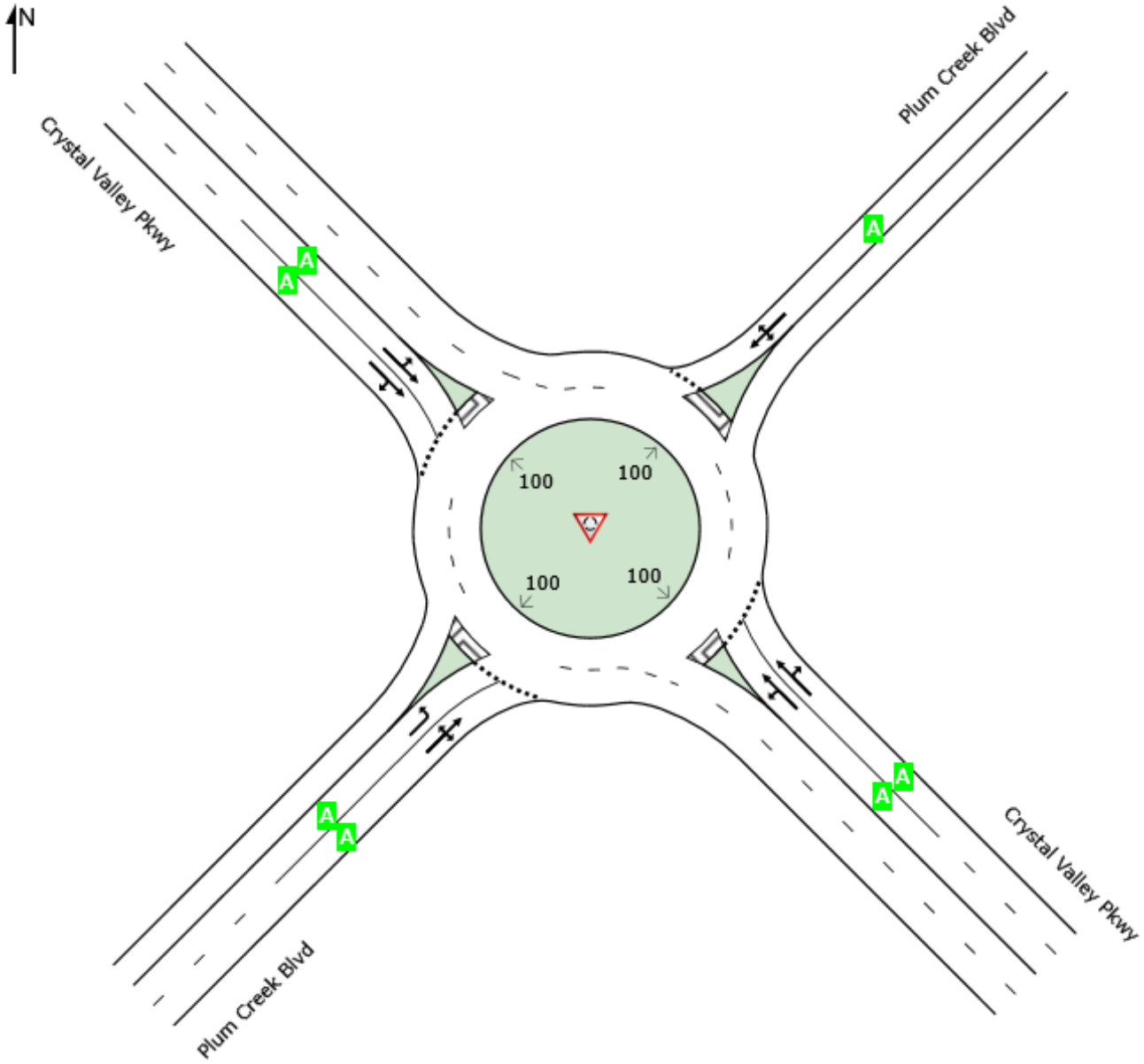
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 005 [Int #5_2025 Total Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
LOS	A	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 12:07:47 PM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #5.sip9

DELAY (CONTROL)

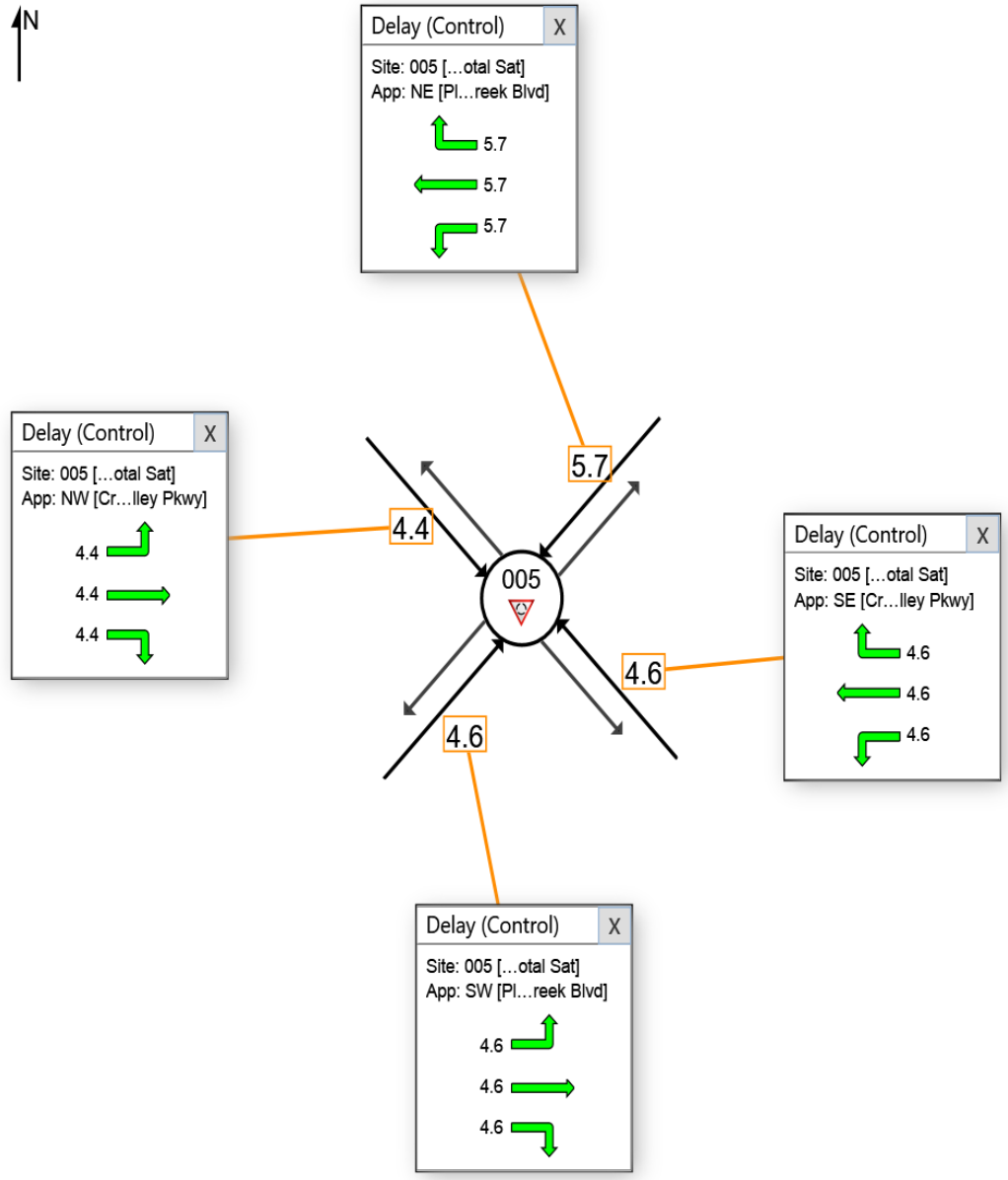
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 005 [Int #5_2025 Total Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popups boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

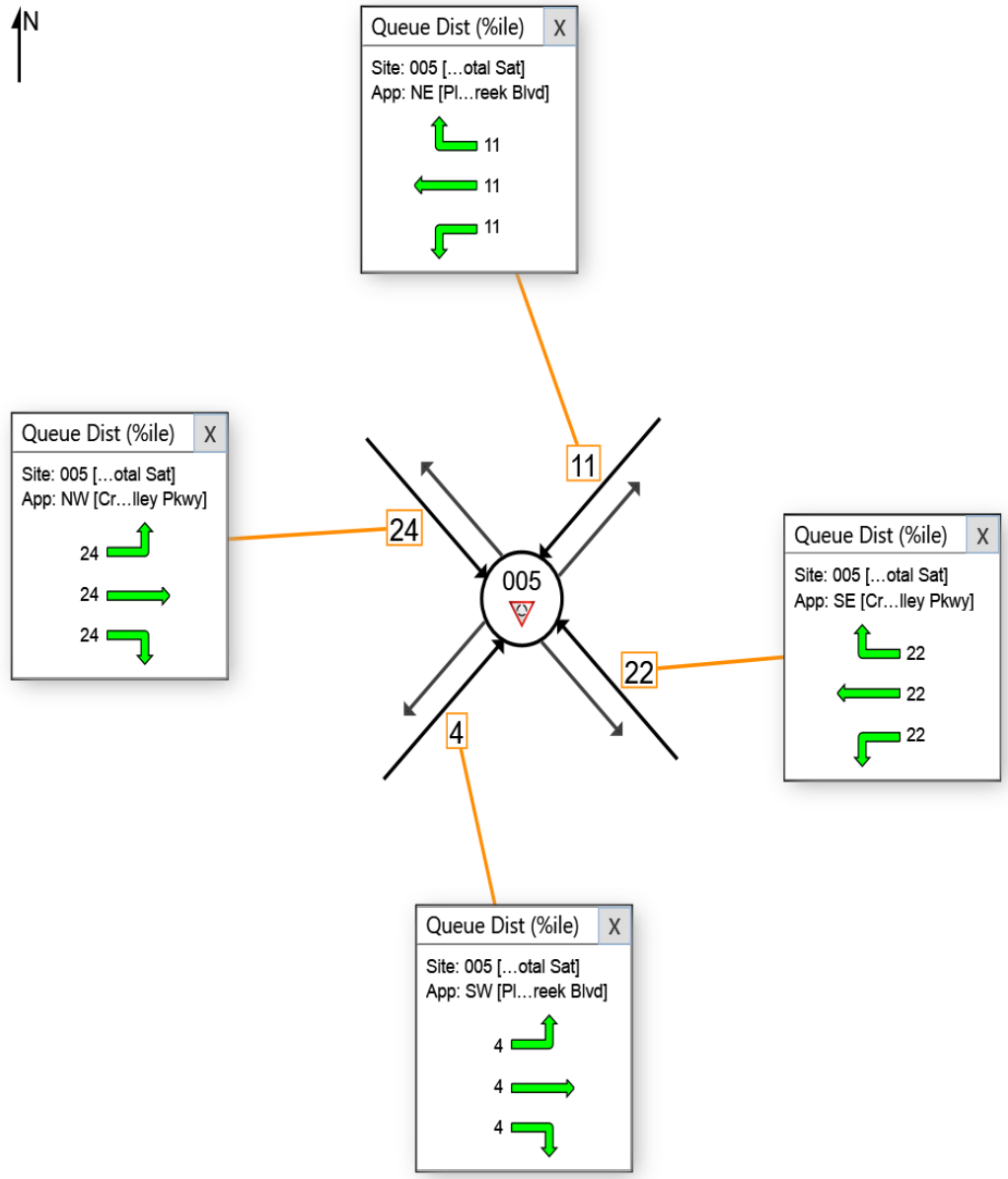
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 005 [Int #5_2025 Total Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

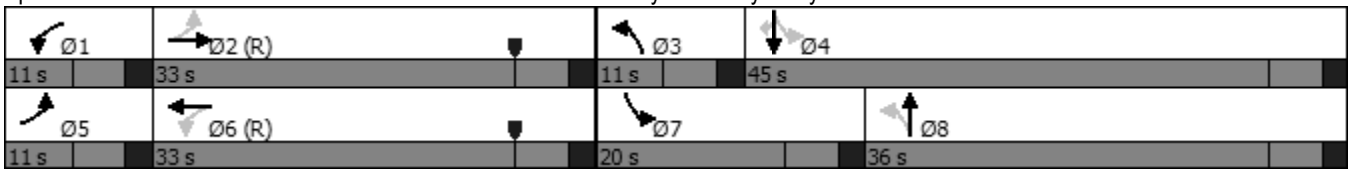
Close All Popups



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	85	85	107	111	135	1	244	133	278	595	78
Future Volume (vph)	85	85	107	111	135	1	244	133	278	595	78
Turn Type	pm+pt	NA	pm+pt	NA	Free	pm+pt	NA	Free	pm+pt	NA	Perm
Protected Phases	5	2	1	6		3	8		7	4	
Permitted Phases	2		6		Free	8		Free	4		4
Detector Phase	5	2	1	6		3	8		7	4	4
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0		5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	11.0	33.0	11.0	33.0		11.0	33.0		11.0	33.0	33.0
Total Split (s)	11.0	33.0	11.0	33.0		11.0	36.0		20.0	45.0	45.0
Total Split (%)	11.0%	33.0%	11.0%	33.0%		11.0%	36.0%		20.0%	45.0%	45.0%
Yellow Time (s)	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max		None	Max		None	Max	Max
Act Effct Green (s)	32.0	27.0	33.2	29.2	100.0	35.7	30.7	100.0	50.0	47.8	47.8
Actuated g/C Ratio	0.32	0.27	0.33	0.29	1.00	0.36	0.31	1.00	0.50	0.48	0.48
v/c Ratio	0.21	0.19	0.26	0.22	0.09	0.00	0.46	0.09	0.57	0.75	0.10

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 22.0
Intersection Capacity Utilization 63.1%
Analysis Period (min) 15

Splits and Phases: 7: Dawson Trail Blvd. & Collector Road A/Crystal Valley Pkwy.





Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	92	94	116	121	147	1	265	145	302	647	85
v/c Ratio	0.21	0.19	0.26	0.22	0.09	0.00	0.46	0.09	0.57	0.75	0.10
Control Delay	22.2	29.0	23.3	29.5	0.1	14.0	31.5	0.1	19.8	29.2	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.2	29.0	23.3	29.5	0.1	14.0	31.5	0.1	19.8	29.2	0.3
Queue Length 50th (ft)	38	46	48	60	0	0	137	0	111	308	0
Queue Length 95th (ft)	72	87	88	108	0	3	215	0	172	#607	0
Internal Link Dist (ft)		1283		1733			1960			1008	
Turn Bay Length (ft)	200		500			500		1000	500		500
Base Capacity (vph)	438	502	438	544	1583	253	572	1583	540	865	821
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.19	0.26	0.22	0.09	0.00	0.46	0.09	0.56	0.75	0.10

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	85	2	107	111	135	1	244	133	278	595	78
Future Volume (veh/h)	85	85	2	107	111	135	1	244	133	278	595	78
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900	1870	1870	1870	1870	1870	1870	1870	1826	1826
Adj Flow Rate, veh/h	92	92	2	116	121	0	1	265	0	302	647	85
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	0	2	2	2	2	2	2	2	5	5
Cap, veh/h	456	506	11	472	519		161	561		514	787	667
Arrive On Green	0.05	0.28	0.28	0.05	0.28	0.00	0.00	0.30	0.00	0.13	0.43	0.43
Sat Flow, veh/h	1810	1824	40	1781	1870	1585	1781	1870	1585	1781	1826	1547
Grp Volume(v), veh/h	92	0	94	116	121	0	1	265	0	302	647	85
Grp Sat Flow(s),veh/h/ln	1810	0	1863	1781	1870	1585	1781	1870	1585	1781	1826	1547
Q Serve(g_s), s	3.6	0.0	3.8	4.7	5.0	0.0	0.0	11.6	0.0	11.2	31.2	3.3
Cycle Q Clear(g_c), s	3.6	0.0	3.8	4.7	5.0	0.0	0.0	11.6	0.0	11.2	31.2	3.3
Prop In Lane	1.00		0.02	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	456	0	517	472	519		161	561		514	787	667
V/C Ratio(X)	0.20	0.00	0.18	0.25	0.23		0.01	0.47		0.59	0.82	0.13
Avail Cap(c_a), veh/h	456	0	517	472	519		247	561		527	787	667
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.91	0.91	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.0	0.0	27.5	24.3	27.9	0.0	26.1	28.5	0.0	19.3	25.1	17.1
Incr Delay (d2), s/veh	0.2	0.0	0.8	0.2	1.0	0.0	0.0	2.8	0.0	1.6	9.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	1.8	2.0	2.4	0.0	0.0	5.6	0.0	4.7	15.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.2	0.0	28.3	24.5	28.9	0.0	26.1	31.4	0.0	20.9	34.5	17.5
LnGrp LOS	C	A	C	C	C		C	C		C	C	B
Approach Vol, veh/h		186			237	A		266	A		1034	
Approach Delay, s/veh		26.2			26.7			31.4			29.1	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	33.7	6.1	49.1	11.0	33.7	19.3	36.0
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	5.0	27.0	5.0	39.0	5.0	27.0	14.0	30.0
Max Q Clear Time (g_c+I1), s	6.7	5.8	2.0	33.2	5.6	7.0	13.2	13.6
Green Ext Time (p_c), s	0.0	0.4	0.0	2.3	0.0	0.5	0.1	1.3

Intersection Summary	
HCM 6th Ctrl Delay	28.8
HCM 6th LOS	C

Notes

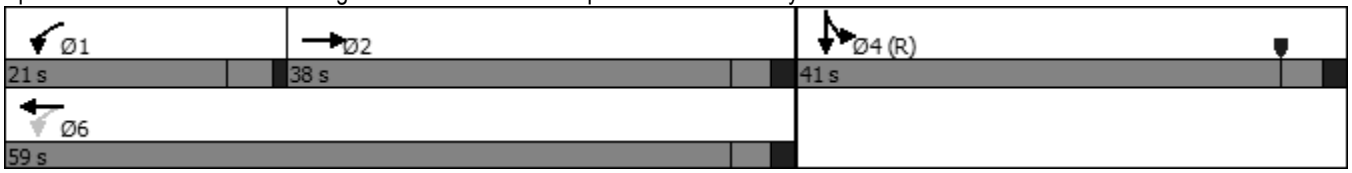
User approved pedestrian interval to be less than phase max green.

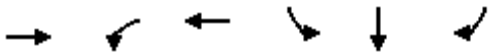
Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	543	180	296	580	95	124
Future Volume (vph)	543	180	296	580	95	124
Turn Type	NA	pm+pt	NA	Split	NA	Free
Protected Phases	2	1	6	4	4	
Permitted Phases		6				Free
Detector Phase	2	1	6	4	4	
Switch Phase						
Minimum Initial (s)	10.0	5.0	10.0	5.0	5.0	
Minimum Split (s)	30.0	9.5	30.0	10.0	10.0	
Total Split (s)	38.0	21.0	59.0	41.0	41.0	
Total Split (%)	38.0%	21.0%	59.0%	41.0%	41.0%	
Yellow Time (s)	3.0	3.5	3.0	3.0	3.0	
All-Red Time (s)	2.0	1.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	4.5	5.0	5.0	5.0	
Lead/Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes				
Recall Mode	Max	None	Max	C-Max	C-Max	
Act Effct Green (s)	38.5	54.5	54.0	36.0	36.0	100.0
Actuated g/C Ratio	0.38	0.54	0.54	0.36	0.36	1.00
v/c Ratio	0.33	0.42	0.16	0.40	0.40	0.08

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 4:SBTL, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.42
Intersection Signal Delay: 20.2
Intersection Capacity Utilization 72.7%
Analysis Period (min) 15

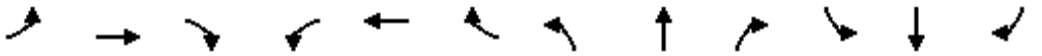
Splits and Phases: 8: W. Frontage Road/I-25 SB Off-Ramp & Plum Creek Pkwy





Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	634	188	308	465	238	129
v/c Ratio	0.33	0.42	0.16	0.40	0.40	0.08
Control Delay	24.5	13.8	10.6	25.2	26.5	0.1
Queue Delay	0.0	0.6	0.5	0.0	0.0	0.0
Total Delay	24.5	14.4	11.1	25.2	26.5	0.1
Queue Length 50th (ft)	130	58	50	120	123	0
Queue Length 95th (ft)	159	96	70	166	197	0
Internal Link Dist (ft)	437		181		388	
Turn Bay Length (ft)						160
Base Capacity (vph)	1941	518	1911	1159	593	1583
Starvation Cap Reductn	0	114	1202	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.47	0.43	0.40	0.40	0.08

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	543	65	180	296	0	0	0	0	580	95	124
Future Volume (veh/h)	0	543	65	180	296	0	0	0	0	580	95	124
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	566	68	188	308	0				536	194	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1912	227	480	1919	0				1283	673	
Arrive On Green	0.00	0.41	0.41	0.16	1.00	0.00				0.36	0.36	0.00
Sat Flow, veh/h	0	4795	549	1781	3647	0				3563	1870	1585
Grp Volume(v), veh/h	0	415	219	188	308	0				536	194	0
Grp Sat Flow(s),veh/h/ln	0	1702	1772	1781	1777	0				1781	1870	1585
Q Serve(g_s), s	0.0	8.1	8.3	5.9	0.0	0.0				11.3	7.4	0.0
Cycle Q Clear(g_c), s	0.0	8.1	8.3	5.9	0.0	0.0				11.3	7.4	0.0
Prop In Lane	0.00		0.31	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1406	732	480	1919	0				1283	673	
V/C Ratio(X)	0.00	0.29	0.30	0.39	0.16	0.00				0.42	0.29	
Avail Cap(c_a), veh/h	0	1406	732	628	1919	0				1283	673	
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.89	0.89	0.00				1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	19.6	19.7	12.6	0.0	0.0				24.1	22.9	0.0
Incr Delay (d2), s/veh	0.0	0.5	1.0	0.5	0.2	0.0				1.0	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.3	3.6	2.1	0.0	0.0				4.9	3.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	20.1	20.7	13.1	0.2	0.0				25.1	23.9	0.0
LnGrp LOS	A	C	C	B	A	A				C	C	
Approach Vol, veh/h		634			496						730	A
Approach Delay, s/veh		20.3			5.1						24.8	
Approach LOS		C			A						C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	12.7	46.3		41.0		59.0
Change Period (Y+Rc), s	4.5	5.0		5.0		5.0
Max Green Setting (Gmax), s	16.5	33.0		36.0		54.0
Max Q Clear Time (g_c+I1), s	7.9	10.3		13.3		2.0
Green Ext Time (p_c), s	0.3	4.2		3.2		2.2

Intersection Summary		
HCM 6th Ctrl Delay		18.0
HCM 6th LOS		B

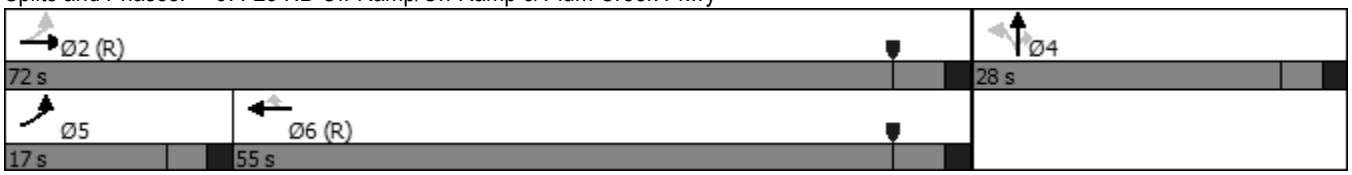
Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	298	825	391	850	85	5	105
Future Volume (vph)	298	825	391	850	85	5	105
Turn Type	pm+pt	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6			4	
Permitted Phases	2			6	4		4
Detector Phase	5	2	6	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0	5.0
Minimum Split (s)	10.0	31.0	24.0	24.0	40.0	40.0	40.0
Total Split (s)	17.0	72.0	55.0	55.0	28.0	28.0	28.0
Total Split (%)	17.0%	72.0%	55.0%	55.0%	28.0%	28.0%	28.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max
Act Effct Green (s)	67.0	66.0	49.8	49.8	23.0	23.0	23.0
Actuated g/C Ratio	0.67	0.66	0.50	0.50	0.23	0.23	0.23
v/c Ratio	0.70	0.25	0.48	0.46	0.18	0.18	0.15

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 83 (83%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 9.2
Intersection Capacity Utilization 72.7%
Analysis Period (min) 15

Splits and Phases: 9: I-25 NB Off-Ramp/On-Ramp & Plum Creek Pkwy





Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	304	842	833	433	69	67	63
v/c Ratio	0.70	0.25	0.48	0.46	0.18	0.18	0.15
Control Delay	26.1	3.6	9.3	3.2	32.5	15.7	4.5
Queue Delay	0.6	0.2	0.0	0.0	0.0	0.0	0.0
Total Delay	26.6	3.8	9.3	3.2	32.5	15.7	4.5
Queue Length 50th (ft)	69	26	92	0	37	13	0
Queue Length 95th (ft)	136	46	143	53	76	51	21
Internal Link Dist (ft)		181	431			480	
Turn Bay Length (ft)					350		150
Base Capacity (vph)	447	3356	1751	935	386	380	412
Starvation Cap Reductn	21	1582	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.47	0.48	0.46	0.18	0.18	0.15

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	298	825	0	0	391	850	85	5	105	0	0	0
Future Volume (veh/h)	298	825	0	0	391	850	85	5	105	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	304	842	0	0	399	867	125	0	70			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	423	3370	0	0	943	1598	819	0	365			
Arrive On Green	0.21	1.00	0.00	0.00	0.50	0.50	0.23	0.00	0.23			
Sat Flow, veh/h	1781	5274	0	0	1870	3170	3563	0	1585			
Grp Volume(v), veh/h	304	842	0	0	399	867	125	0	70			
Grp Sat Flow(s),veh/h/ln	1781	1702	0	0	1870	1585	1781	0	1585			
Q Serve(g_s), s	8.4	0.0	0.0	0.0	13.5	18.7	2.8	0.0	3.6			
Cycle Q Clear(g_c), s	8.4	0.0	0.0	0.0	13.5	18.7	2.8	0.0	3.6			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	423	3370	0	0	943	1598	819	0	365			
V/C Ratio(X)	0.72	0.25	0.00	0.00	0.42	0.54	0.15	0.00	0.19			
Avail Cap(c_a), veh/h	447	3370	0	0	943	1598	819	0	365			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.94	0.94	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	10.1	0.0	0.0	0.0	15.6	16.9	30.7	0.0	31.0			
Incr Delay (d2), s/veh	4.9	0.2	0.0	0.0	1.4	1.3	0.4	0.0	1.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.9	0.1	0.0	0.0	5.9	6.8	1.2	0.0	3.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.0	0.2	0.0	0.0	17.0	18.3	31.1	0.0	32.2			
LnGrp LOS	B	A	A	A	B	B	C	A	C			
Approach Vol, veh/h		1146			1266			195				
Approach Delay, s/veh		4.1			17.9			31.5				
Approach LOS		A			B			C				

Timer - Assigned Phs		2		4	5	6			
Phs Duration (G+Y+Rc), s		72.0		28.0	15.6	56.4			
Change Period (Y+Rc), s		6.0		5.0	5.0	6.0			
Max Green Setting (Gmax), s		66.0		23.0	12.0	49.0			
Max Q Clear Time (g_c+I1), s		2.0		5.6	10.4	20.7			
Green Ext Time (p_c), s		7.4		0.6	0.2	7.3			

Intersection Summary									
HCM 6th Ctrl Delay			12.8						
HCM 6th LOS			B						

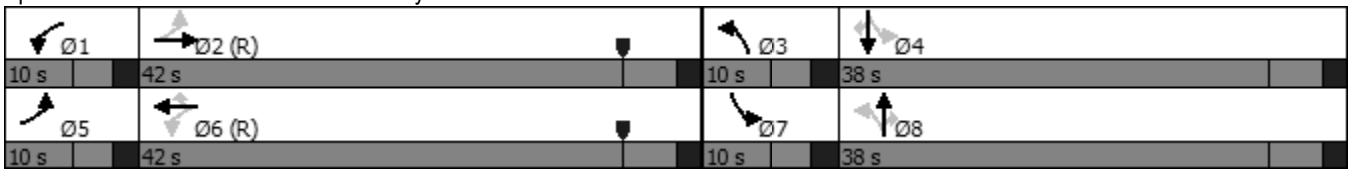
Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	25	390	30	360	55	32	52	178	40	57	30
Future Volume (vph)	25	390	30	360	55	32	52	178	40	57	30
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2	1	6		3	8		7	4	
Permitted Phases	2		6		6	8		8	4		4
Detector Phase	5	2	1	6	6	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	28.0	10.0	33.0	33.0	10.0	33.0	33.0	10.0	28.0	28.0
Total Split (s)	10.0	42.0	10.0	42.0	42.0	10.0	38.0	38.0	10.0	38.0	38.0
Total Split (%)	10.0%	42.0%	10.0%	42.0%	42.0%	10.0%	38.0%	38.0%	10.0%	38.0%	38.0%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None	Max	Max	Max
Act Effct Green (s)	44.0	40.0	44.0	40.0	40.0	38.0	32.0	32.0	40.0	36.0	36.0
Actuated g/C Ratio	0.44	0.40	0.44	0.40	0.40	0.38	0.32	0.32	0.40	0.36	0.36
v/c Ratio	0.06	0.31	0.08	0.28	0.08	0.07	0.10	0.30	0.04	0.09	0.05

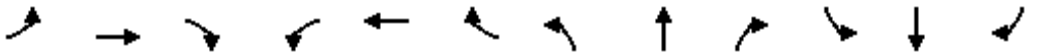
Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.31
Intersection Signal Delay: 17.0
Intersection Capacity Utilization 40.4%
Analysis Period (min) 15

Splits and Phases: 10: Plum Creek Pkwy & Prairie Hawk Drive



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	27	433	33	391	60	35	57	193	43	62	33
v/c Ratio	0.06	0.31	0.08	0.28	0.08	0.07	0.10	0.30	0.04	0.09	0.05
Control Delay	14.8	22.1	12.4	18.9	3.9	17.2	24.5	5.1	16.8	23.8	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.8	22.1	12.4	18.9	3.9	17.2	24.5	5.1	16.8	23.8	0.1
Queue Length 50th (ft)	9	104	12	88	0	13	25	0	7	28	0
Queue Length 95th (ft)	24	144	29	118	0	31	55	48	18	58	0
Internal Link Dist (ft)		246		922			503			698	
Turn Bay Length (ft)	230		250		230	250		250	250		250
Base Capacity (vph)	442	1412	419	1415	718	529	596	637	1031	670	661
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.31	0.08	0.28	0.08	0.07	0.10	0.30	0.04	0.09	0.05

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	390	8	30	360	55	32	52	178	40	57	30
Future Volume (veh/h)	25	390	8	30	360	55	32	52	178	40	57	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	27	424	9	33	391	0	35	57	193	43	62	33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	445	1419	30	429	1430		513	563	477	929	599	507
Arrive On Green	0.03	0.40	0.40	0.03	0.40	0.00	0.03	0.30	0.30	0.05	0.32	0.32
Sat Flow, veh/h	1781	3558	75	1781	3554	1585	1781	1870	1585	3456	1870	1585
Grp Volume(v), veh/h	27	211	222	33	391	0	35	57	193	43	62	33
Grp Sat Flow(s),veh/h/ln	1781	1777	1857	1781	1777	1585	1781	1870	1585	1728	1870	1585
Q Serve(g_s), s	0.9	8.1	8.1	1.1	7.4	0.0	1.3	2.2	9.7	0.8	2.3	1.4
Cycle Q Clear(g_c), s	0.9	8.1	8.1	1.1	7.4	0.0	1.3	2.2	9.7	0.8	2.3	1.4
Prop In Lane	1.00		0.04	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	445	709	741	429	1430		513	563	477	929	599	507
V/C Ratio(X)	0.06	0.30	0.30	0.08	0.27		0.07	0.10	0.40	0.05	0.10	0.07
Avail Cap(c_a), veh/h	487	709	741	464	1430		547	599	507	929	599	507
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.0	20.5	20.5	17.0	20.1	0.0	22.7	25.2	27.8	21.3	23.9	23.6
Incr Delay (d2), s/veh	0.1	1.1	1.0	0.1	0.5	0.0	0.1	0.1	0.6	0.1	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	3.4	3.5	0.4	3.0	0.0	0.6	1.0	3.7	0.3	1.1	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.1	21.6	21.5	17.0	20.5	0.0	22.8	25.3	28.4	21.4	24.3	23.9
LnGrp LOS	B	C	C	B	C		C	C	C	C	C	C
Approach Vol, veh/h		460			424	A		285			138	
Approach Delay, s/veh		21.3			20.3			27.1			23.3	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	45.9	8.1	38.0	7.6	46.3	10.0	36.1
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	5.0	36.0	5.0	32.0	5.0	36.0	5.0	32.0
Max Q Clear Time (g_c+I1), s	3.1	10.1	3.3	4.3	2.9	9.4	2.8	11.7
Green Ext Time (p_c), s	0.0	2.3	0.0	0.4	0.0	2.4	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay	22.4
HCM 6th LOS	C

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

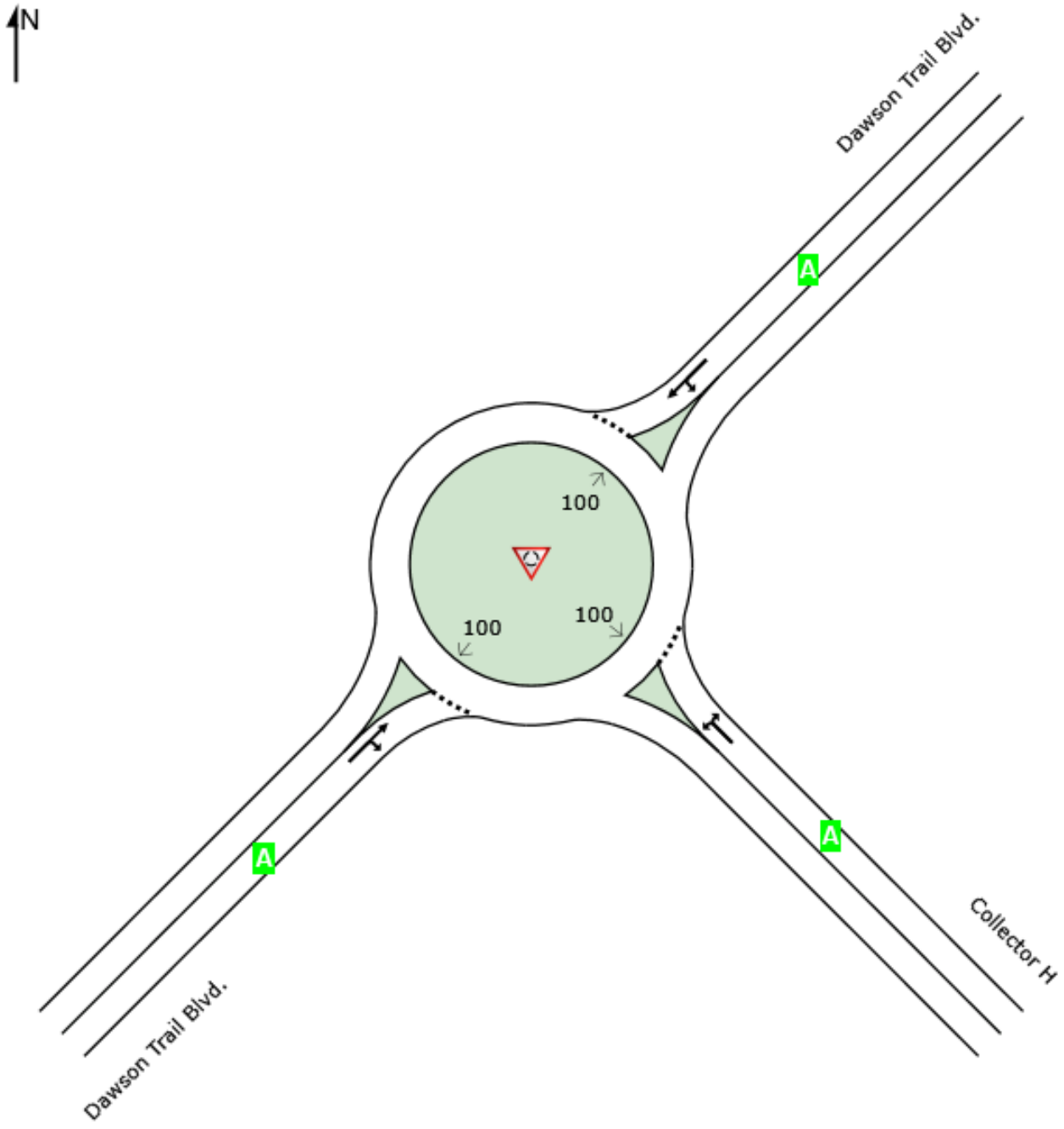
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 102 [Int #102_2025 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches			Intersection
	Southeast	Northeast	Southwest	
LOS	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 2:09:38 PM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #102-mod.sip9

DELAY (CONTROL)

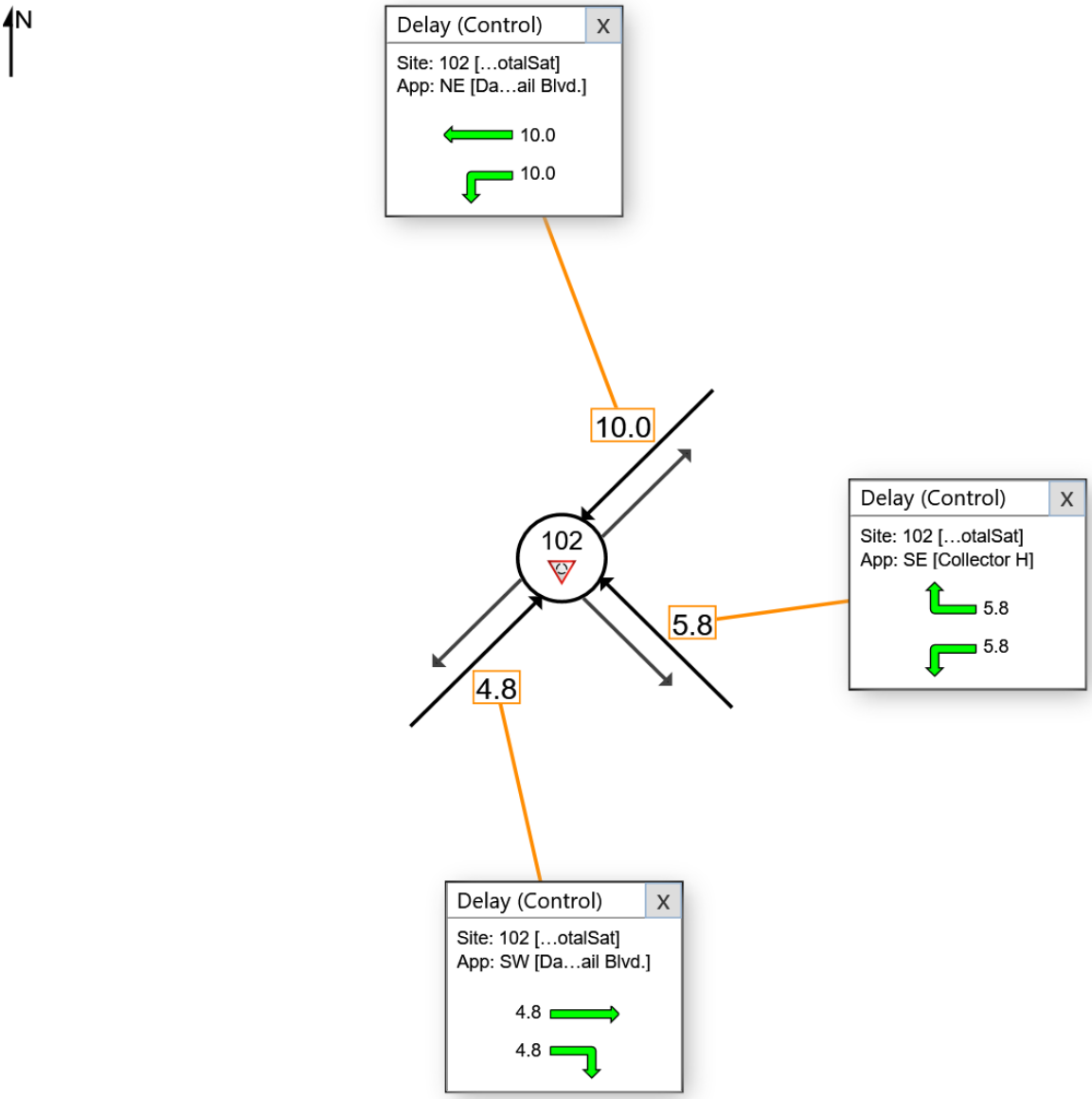
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 102 [Int #102_2025 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

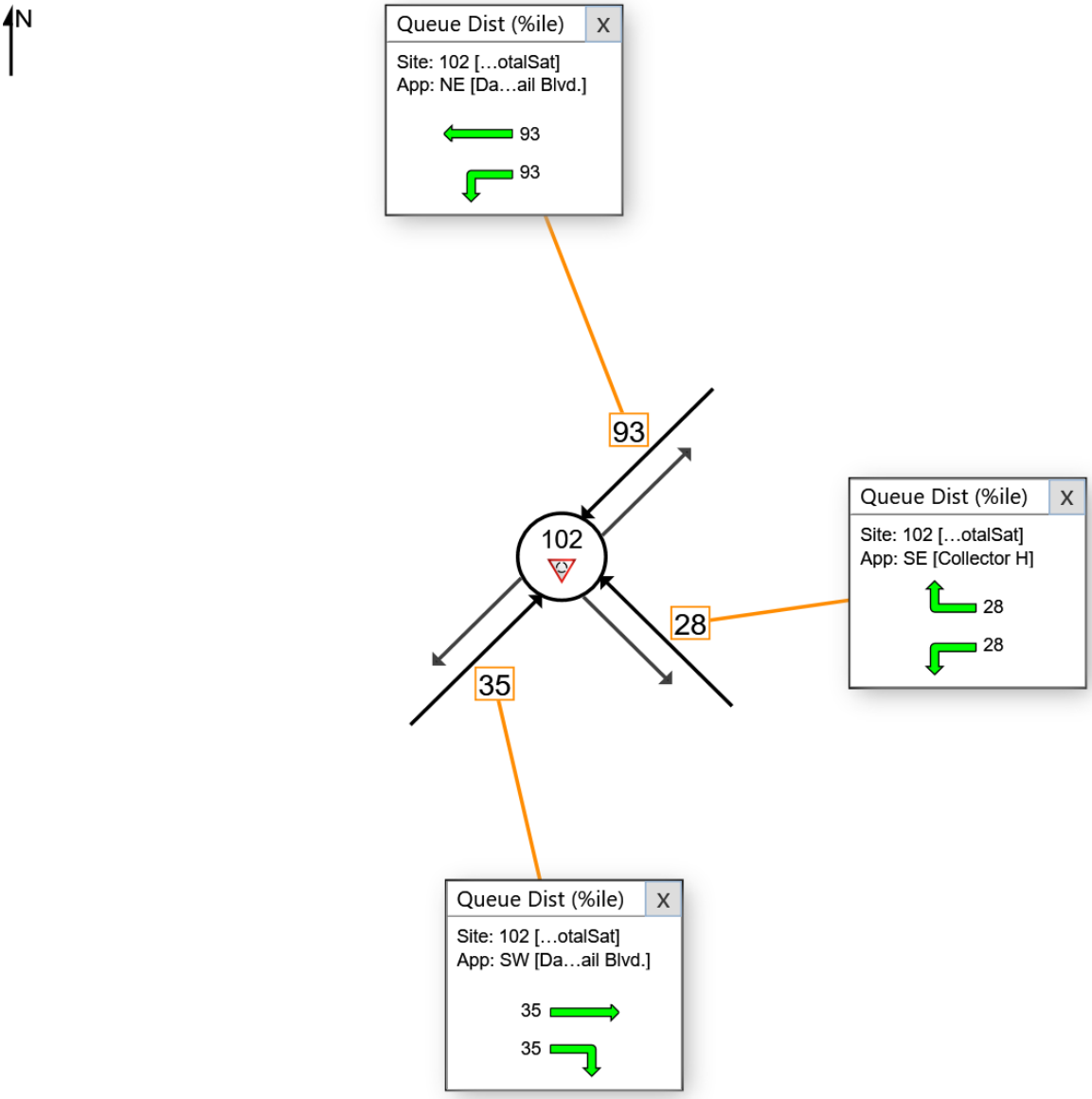
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 102 [Int #102_2025 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popups. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	28	309	155	27	951
Future Vol, veh/h	0	28	309	155	27	951
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	0	250	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	30	336	168	29	1034

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	336	0	0	504	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	4.12	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	0	*825	-	-	1052	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %		1	-	-	1	-
Mov Cap-1 Maneuver	-	*825	-	-	1052	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.5	0	0.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	825	1052	-
HCM Lane V/C Ratio	-	-	0.037	0.028	-
HCM Control Delay (s)	-	-	9.5	8.5	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

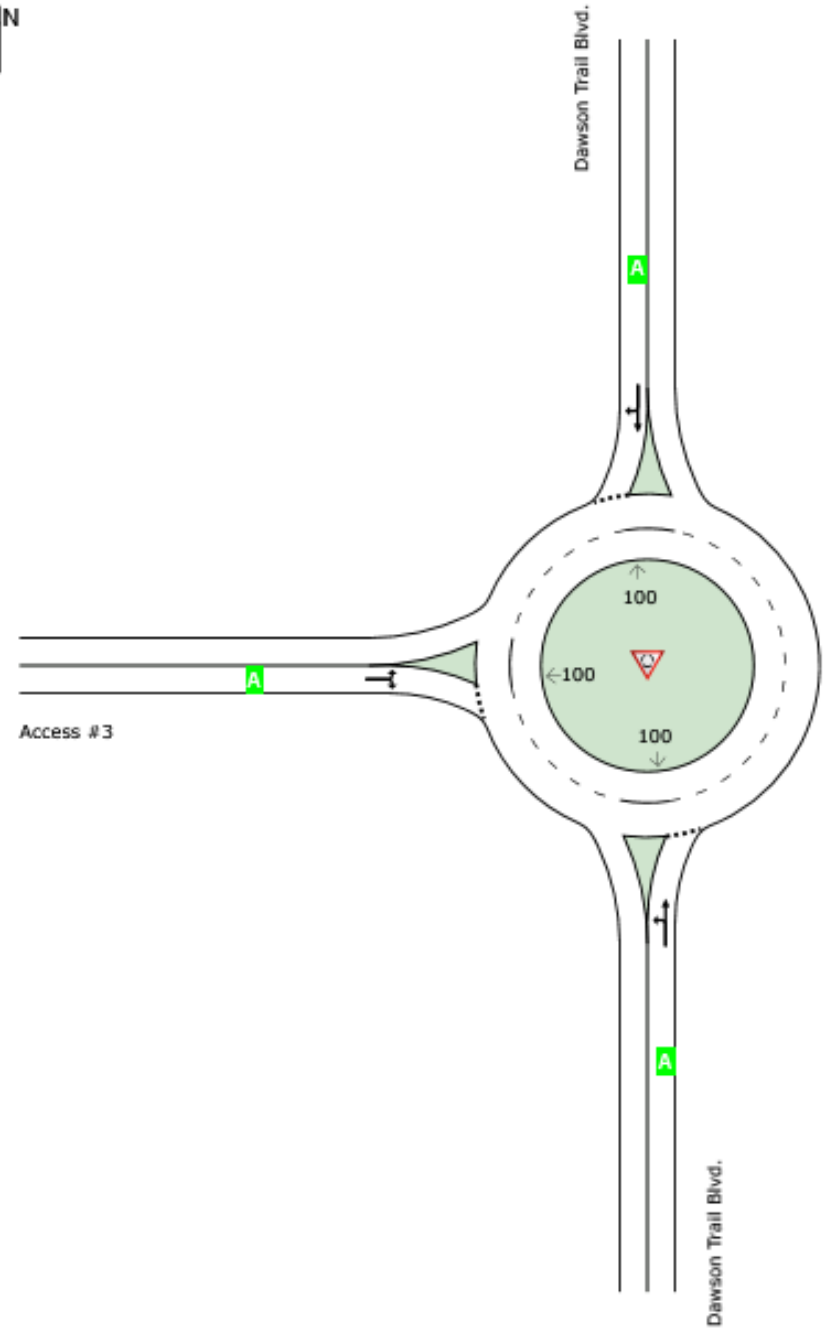
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 104 [Int#104_2025 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches			Intersection
	South	North	West	
LOS	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 2:13:58 PM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #104-mod.sip9

DELAY (CONTROL)

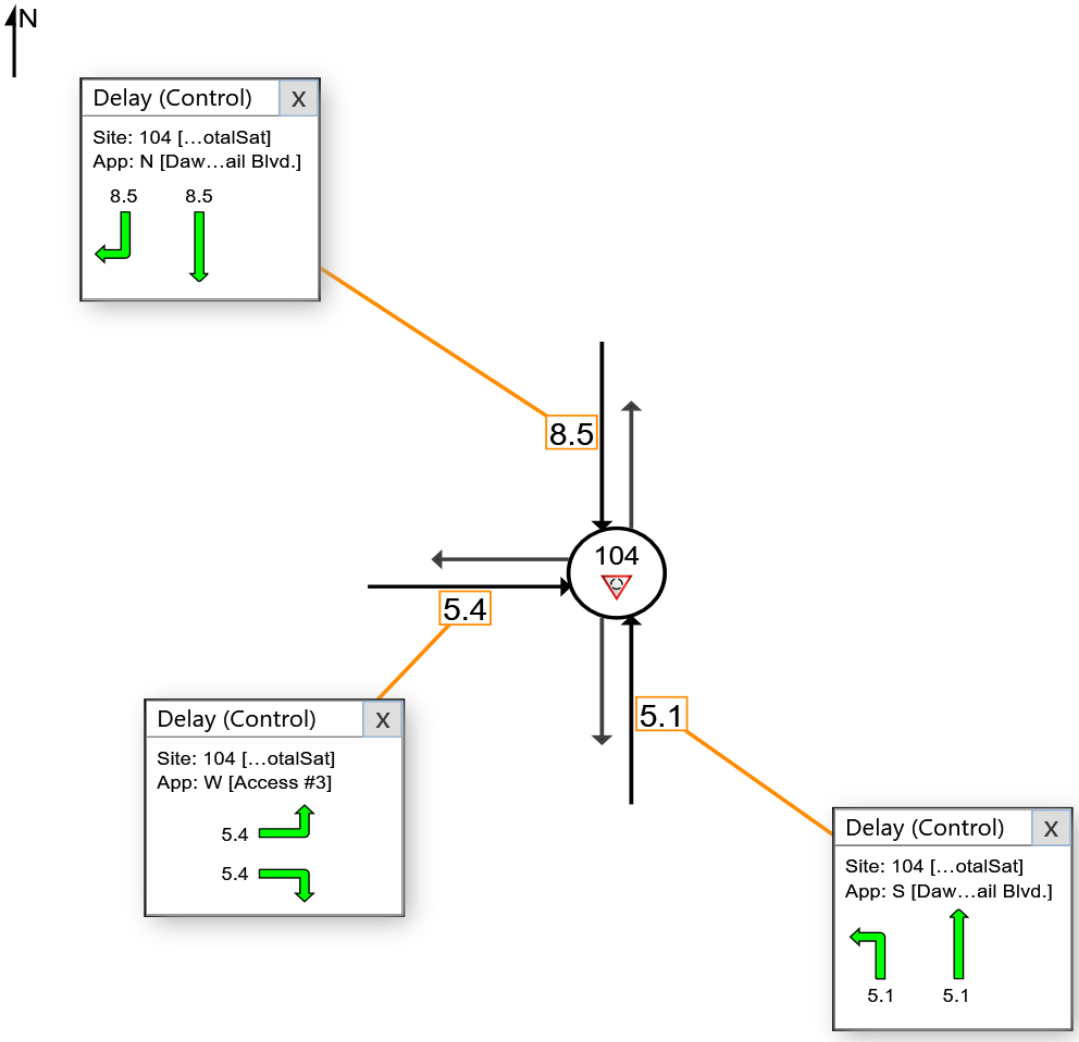
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 104 [Int#104_2025 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

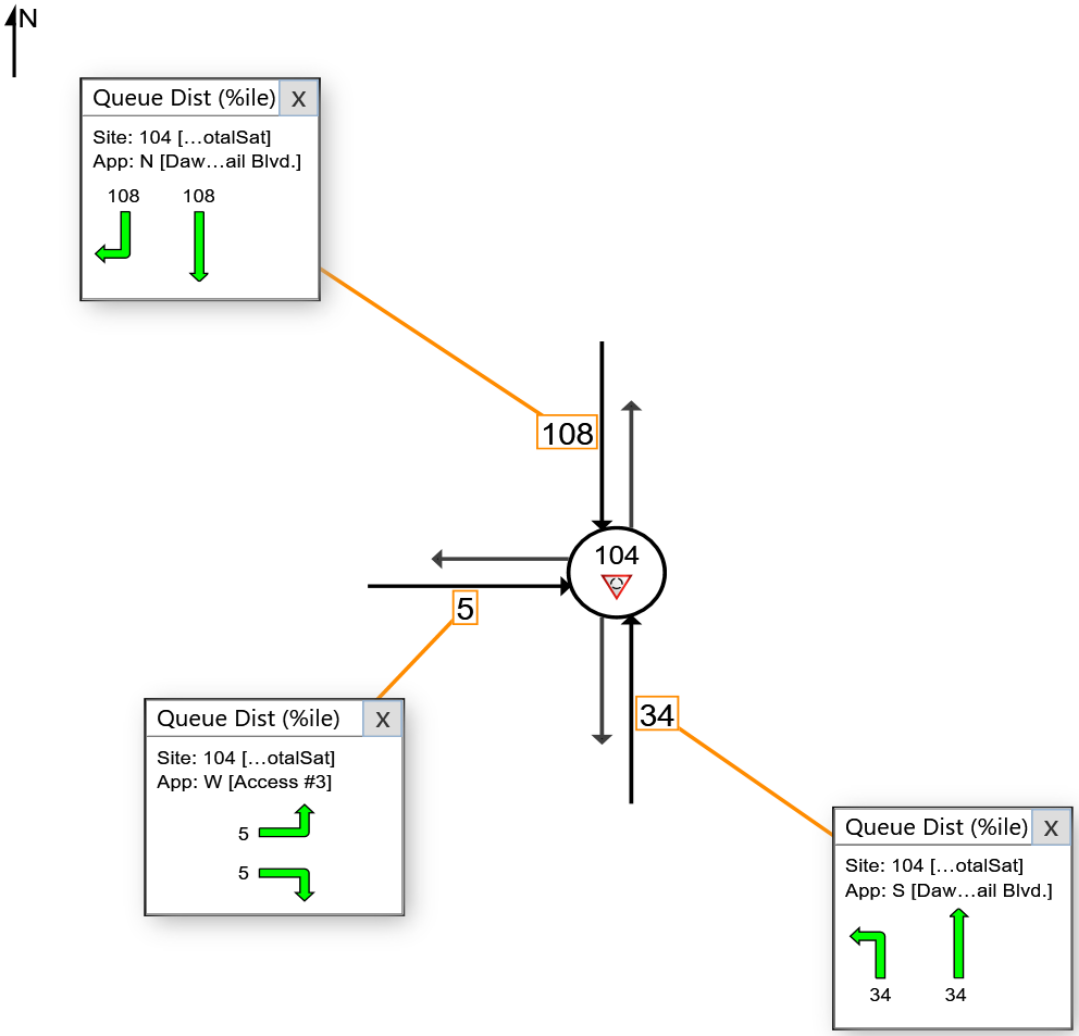
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 104 [Int#104_2025 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



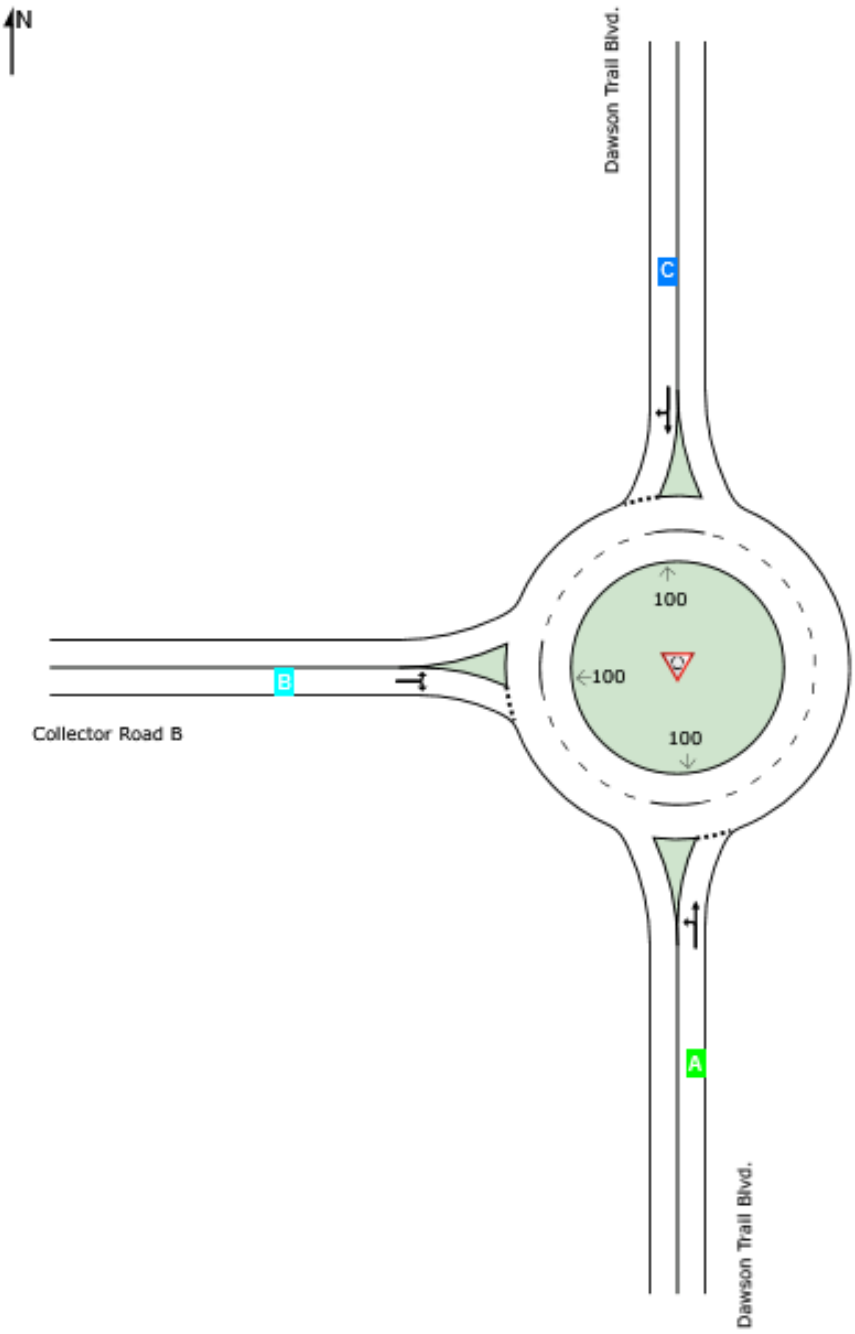
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 101 [Int#105_2025 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches			Intersection
	South	North	West	
LOS	A	C	B	C



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 2:15:17 PM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #105.sip9

DELAY (CONTROL)

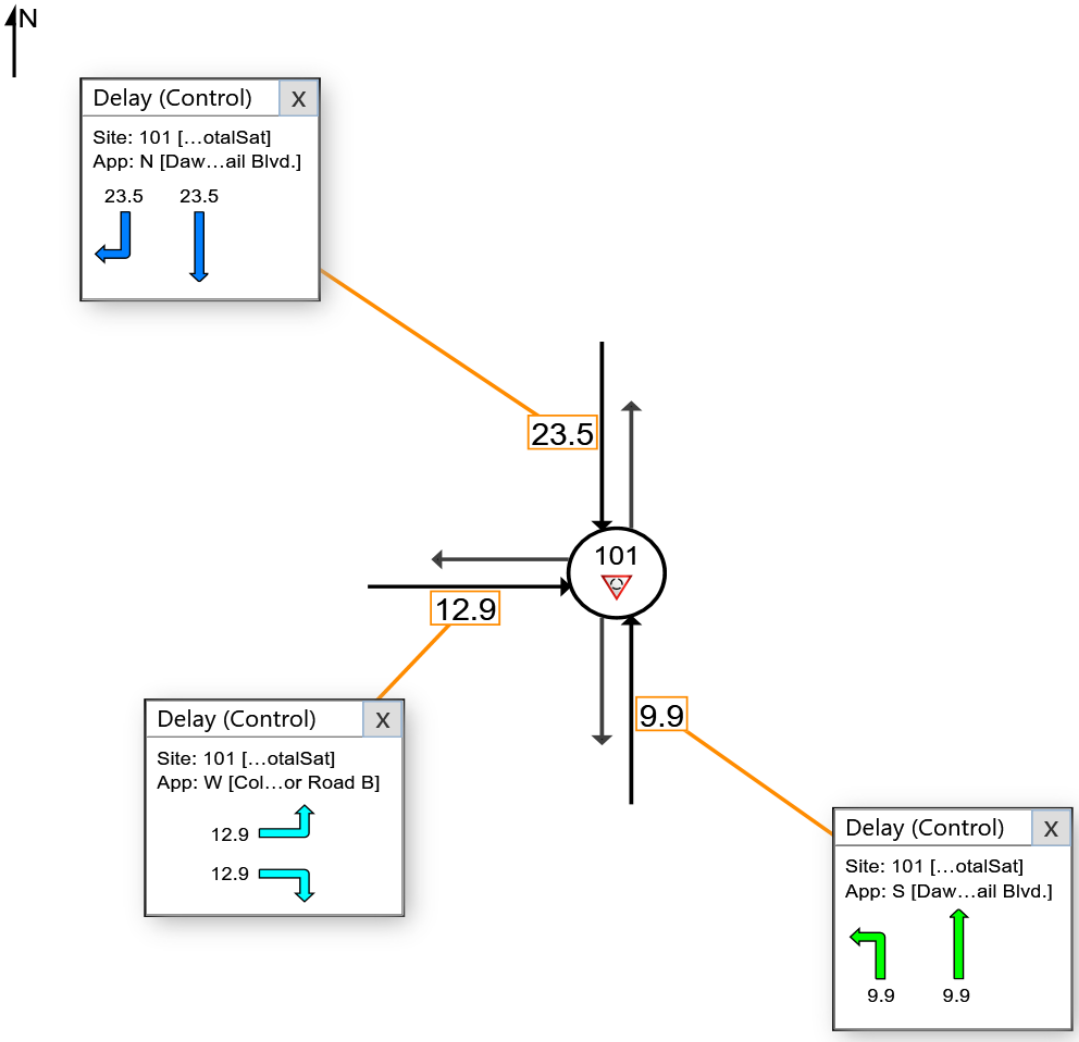
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 101 [Int#105_2025 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

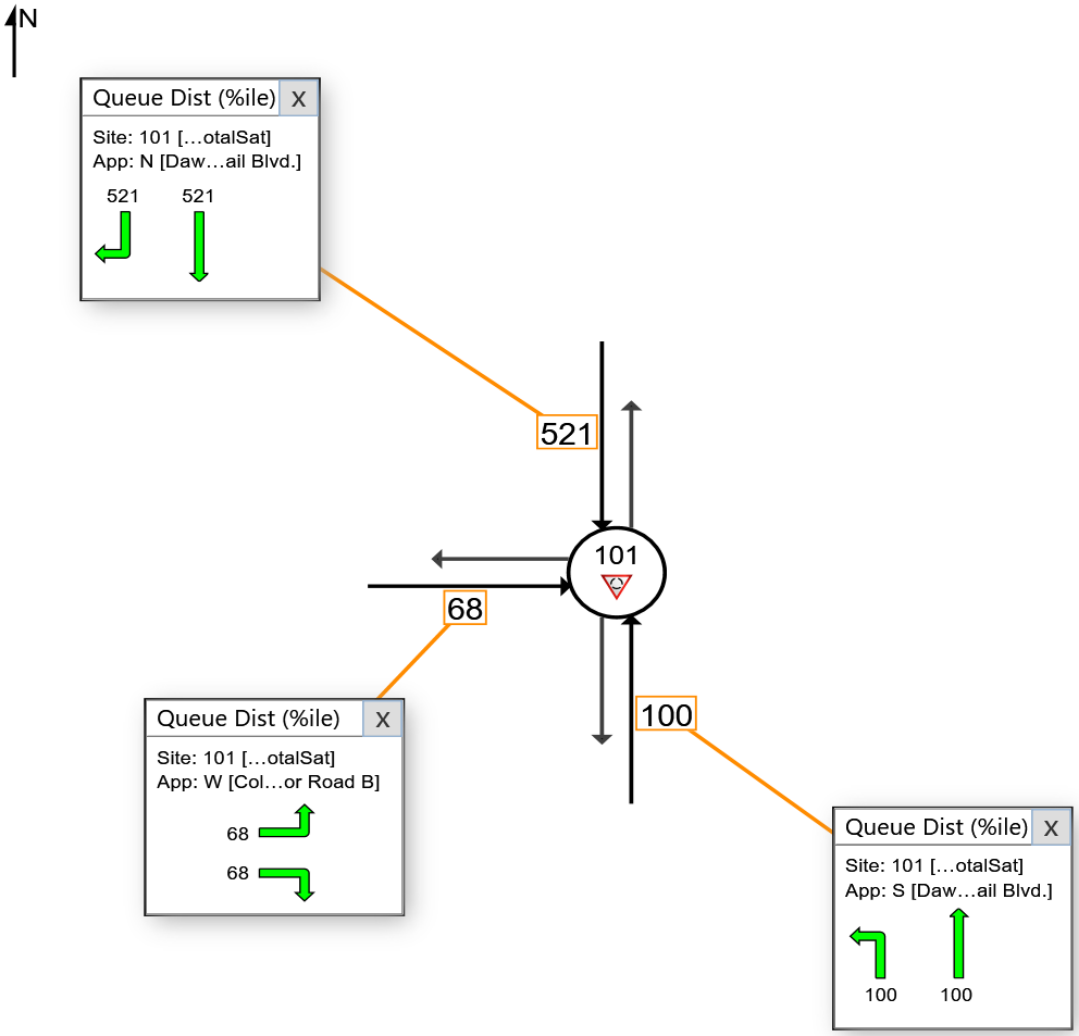
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 101 [Int#105_2025 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



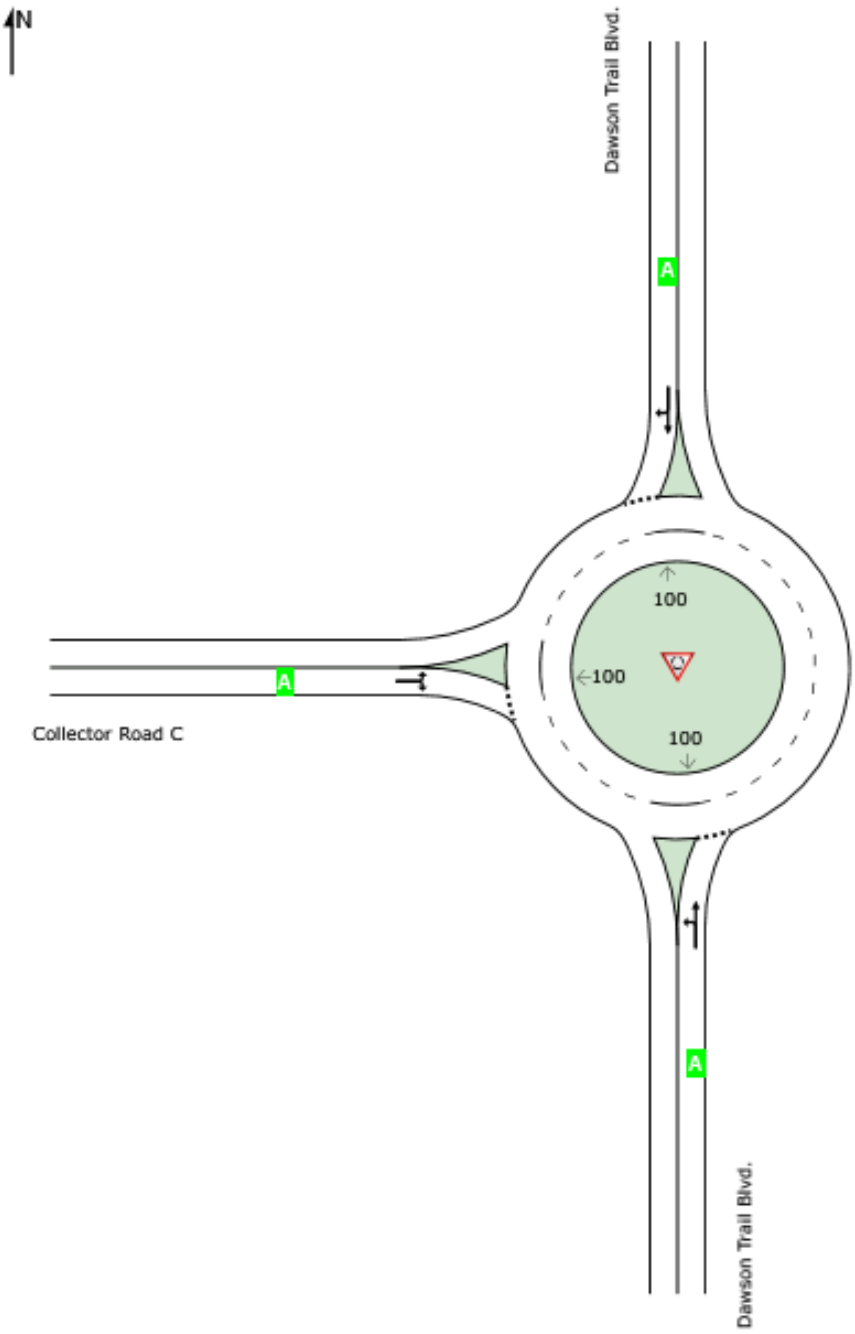
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 106 [Int#106_2025 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches			Intersection
	South	North	West	
LOS	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 2:16:50 PM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int#106-mod.sip9

DELAY (CONTROL)

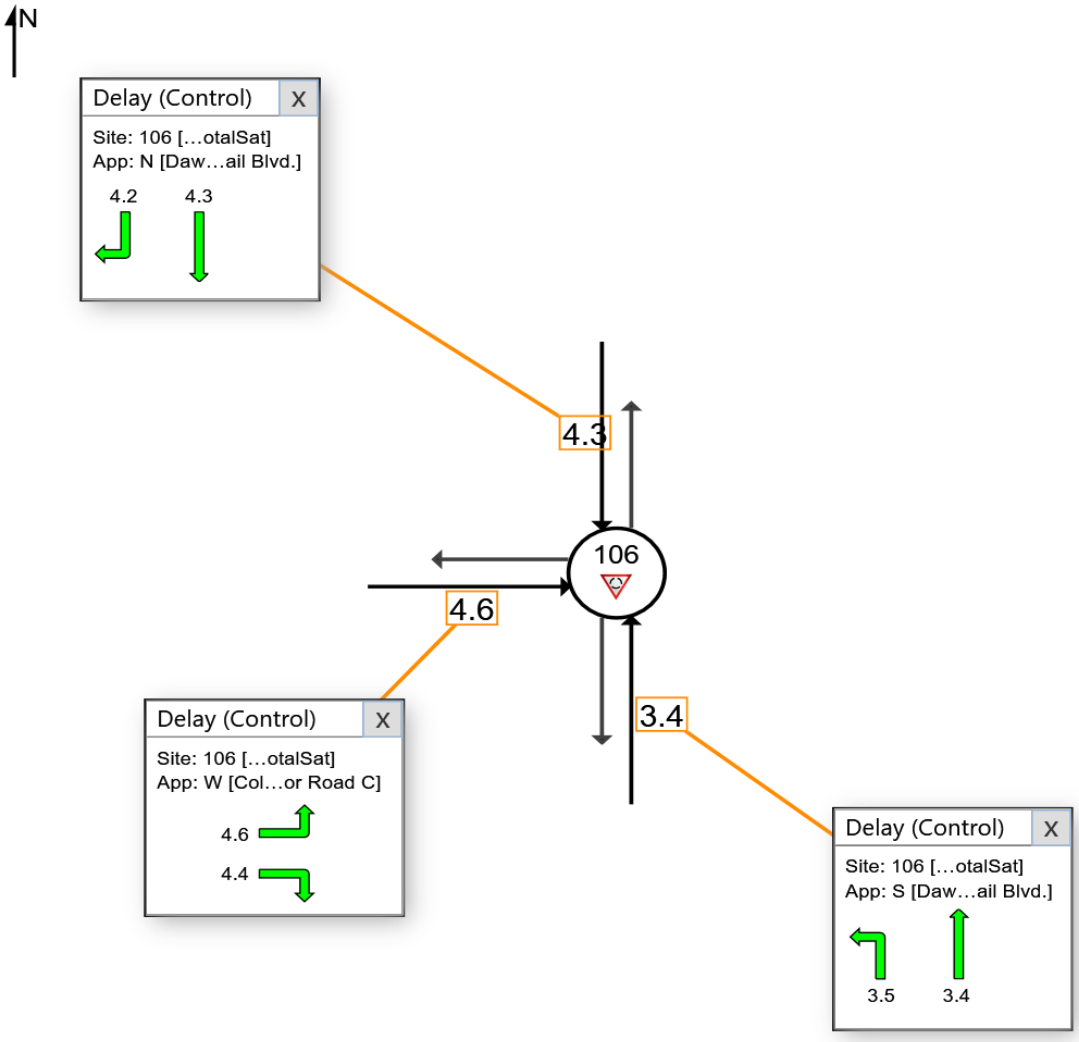
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 106 [Int#106_2025 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

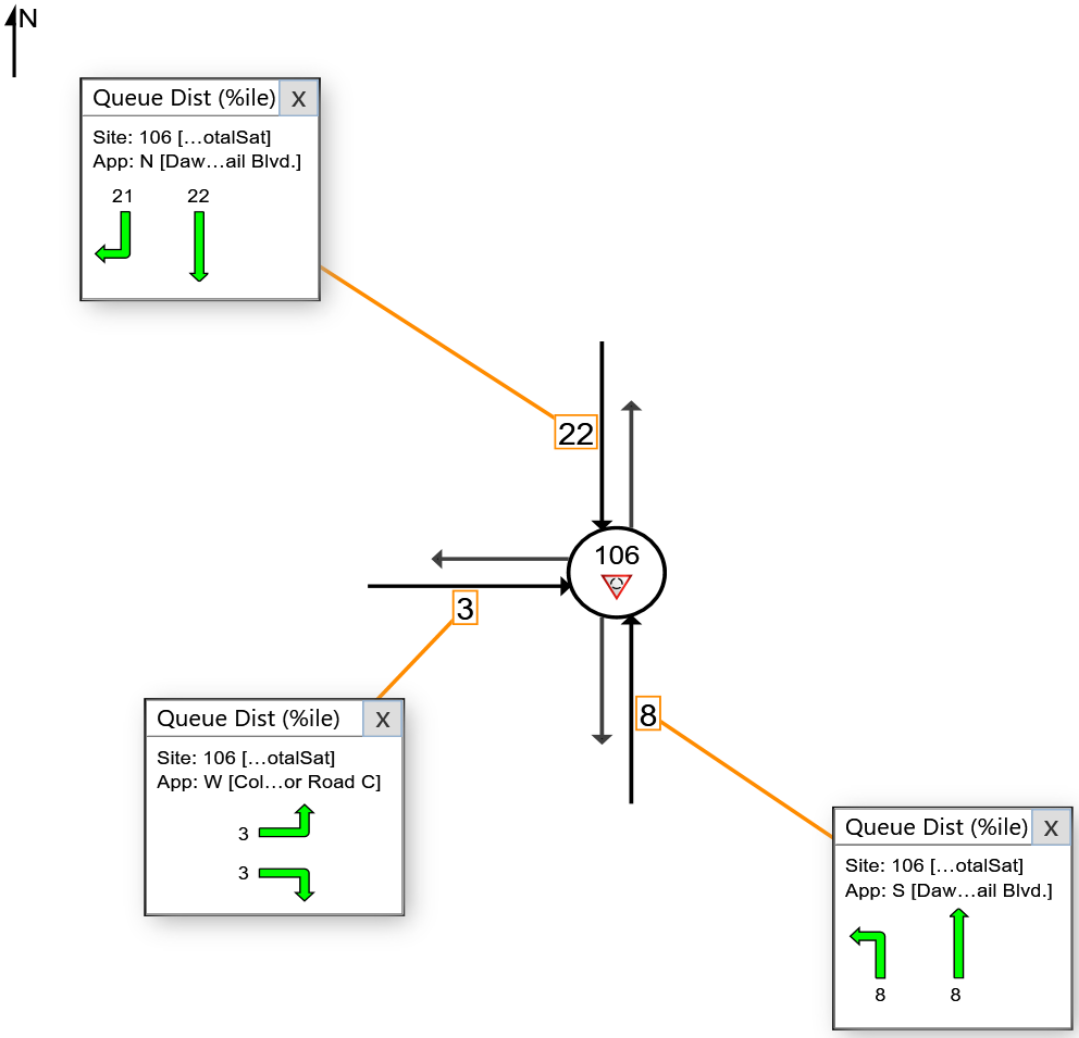
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 106 [Int#106_2025 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	5	0	60	5	1	0	159	43	5	166	24
Future Vol, veh/h	13	5	0	60	5	1	0	159	43	5	166	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	5	0	65	5	1	0	173	47	5	180	26

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	403	423	193	403	413	197	-	0	0	220	0	0
Stage 1	203	203	-	197	197	-	-	-	-	-	-	-
Stage 2	200	220	-	206	216	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	558	522	849	558	529	844	0	-	-	1349	-	-
Stage 1	799	733	-	805	738	-	0	-	-	-	-	-
Stage 2	802	721	-	796	724	-	0	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	551	520	849	552	527	844	-	-	-	1349	-	-
Mov Cap-2 Maneuver	551	520	-	552	527	-	-	-	-	-	-	-
Stage 1	799	730	-	805	738	-	-	-	-	-	-	-
Stage 2	795	721	-	787	721	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.9	12.5	0	0.2
HCM LOS	B	B		

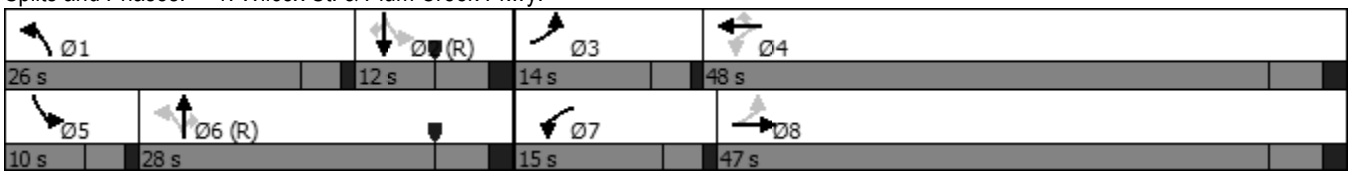
Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	-	-	542	553	1349	-	-
HCM Lane V/C Ratio	-	-	0.036	0.13	0.004	-	-
HCM Control Delay (s)	-	-	11.9	12.5	7.7	-	-
HCM Lane LOS	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	-	-	0.1	0.4	0	-	-

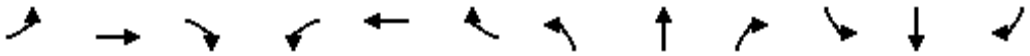
Intersection Capacity Worksheets: 2030 Background + Project (Phase 2)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	200	620	255	122	960	110	330	209	134	60	159	120
Future Volume (vph)	200	620	255	122	960	110	330	209	134	60	159	120
Turn Type	pm+pt	NA	Free	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		Free	4		4	6		6	2		2
Detector Phase	3	8		7	4	4	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	5.0	10.0	10.0	5.0	4.0	4.0
Minimum Split (s)	9.5	31.0		14.5	31.0	31.0	9.5	16.0	16.0	9.5	10.0	10.0
Total Split (s)	14.0	47.0		15.0	48.0	48.0	26.0	28.0	28.0	10.0	12.0	12.0
Total Split (%)	14.0%	47.0%		15.0%	48.0%	48.0%	26.0%	28.0%	28.0%	10.0%	12.0%	12.0%
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	2.0		1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	48.9	37.2	100.0	49.4	37.4	37.4	38.8	28.8	28.8	29.2	21.4	21.4
Actuated g/C Ratio	0.49	0.37	1.00	0.49	0.37	0.37	0.39	0.29	0.29	0.29	0.21	0.21
v/c Ratio	0.86	0.53	0.18	0.34	0.79	0.17	0.42	0.43	0.26	0.18	0.45	0.28

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 32 (32%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 29.6
Intersection Capacity Utilization 72.1%
Analysis Period (min) 15

Splits and Phases: 1: Wilcox St. & Plum Creek Pkwy.





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	217	674	277	133	1043	120	359	227	146	65	173	130
v/c Ratio	0.86	0.53	0.18	0.34	0.79	0.17	0.42	0.43	0.26	0.18	0.45	0.28
Control Delay	51.1	25.6	0.3	20.2	44.1	9.7	23.7	34.7	6.9	23.7	42.1	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.1	25.6	0.3	20.2	44.4	9.7	23.7	34.7	6.9	23.7	42.1	5.0
Queue Length 50th (ft)	76	170	0	65	375	10	80	124	0	27	98	0
Queue Length 95th (ft)	#193	210	0	111	443	m68	123	207	49	59	#213	32
Internal Link Dist (ft)		553			473			812			658	
Turn Bay Length (ft)	280		250	185			190		195	130		130
Base Capacity (vph)	255	1421	1538	409	1486	759	1040	531	555	366	387	457
Starvation Cap Reductn	0	0	0	0	102	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.47	0.18	0.33	0.75	0.16	0.35	0.43	0.26	0.18	0.45	0.28

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Twin Mesa Metropolitan District New Service Plan
SV2023-003
Planning Commission Supplemental Memo Page 640 of 1222

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	200	620	255	122	960	110	330	209	134	60	159	120
Future Volume (veh/h)	200	620	255	122	960	110	330	209	134	60	159	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1870	1870	1870	1856	1856	1856	1826	1826	1826
Adj Flow Rate, veh/h	217	674	0	133	1043	120	359	227	146	65	173	130
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	2	2	2	3	3	3	5	5	5
Cap, veh/h	277	1257		405	1290	575	818	554	469	342	440	373
Arrive On Green	0.10	0.36	0.00	0.03	0.12	0.12	0.10	0.30	0.30	0.04	0.24	0.24
Sat Flow, veh/h	1739	3469	1547	1781	3554	1585	3428	1856	1572	1739	1826	1547
Grp Volume(v), veh/h	217	674	0	133	1043	120	359	227	146	65	173	130
Grp Sat Flow(s),veh/h/ln	1739	1735	1547	1781	1777	1585	1714	1856	1572	1739	1826	1547
Q Serve(g_s), s	7.7	15.4	0.0	4.4	28.6	6.8	7.5	9.8	7.2	2.8	7.9	7.0
Cycle Q Clear(g_c), s	7.7	15.4	0.0	4.4	28.6	6.8	7.5	9.8	7.2	2.8	7.9	7.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	277	1257		405	1290	575	818	554	469	342	440	373
V/C Ratio(X)	0.78	0.54		0.33	0.81	0.21	0.44	0.41	0.31	0.19	0.39	0.35
Avail Cap(c_a), veh/h	282	1422		427	1493	666	1233	554	469	374	440	373
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.82	0.82	0.82	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.6	25.2	0.0	18.5	40.6	31.0	23.5	28.0	27.1	26.8	31.8	31.4
Incr Delay (d2), s/veh	12.1	0.4	0.0	0.1	2.5	0.1	0.1	2.2	1.7	0.1	2.6	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	6.2	0.0	1.9	14.0	2.7	3.0	4.7	2.9	1.2	3.8	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.7	25.6	0.0	18.6	43.1	31.2	23.6	30.3	28.9	26.9	34.4	34.0
LnGrp LOS	C	C		B	D	C	C	C	C	C	C	C
Approach Vol, veh/h		891	A		1296			732			368	
Approach Delay, s/veh		27.8			39.5			26.7			32.9	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.9	30.1	13.7	42.3	8.2	35.8	13.8	42.2
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	22.0	6.0	10.0	42.0	6.0	22.0	11.0	41.0
Max Q Clear Time (g_c+I1), s	9.5	9.9	9.7	30.6	4.8	11.8	6.4	17.4
Green Ext Time (p_c), s	0.4	0.0	0.0	5.7	0.0	1.9	0.0	4.7

Intersection Summary	
HCM 6th Ctrl Delay	32.7
HCM 6th LOS	C

Notes

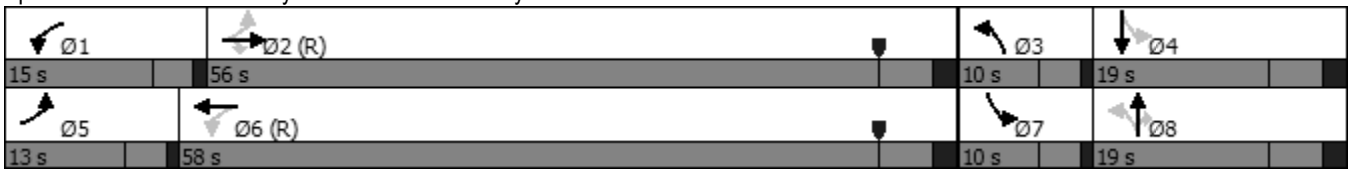
User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	159	540	125	125	1054	75	40	60	80	60	78
Future Volume (vph)	159	540	125	125	1054	75	40	60	80	60	78
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Free
Protected Phases	5	2		1	6	3	8		7	4	
Permitted Phases	2		2	6		8		8	4		Free
Detector Phase	5	2	2	1	6	3	8	8	7	4	
Switch Phase											
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0	3.0	5.0	5.0	3.0	5.0	
Minimum Split (s)	9.5	32.0	32.0	9.5	32.0	9.5	11.0	11.0	9.5	11.0	
Total Split (s)	13.0	56.0	56.0	15.0	58.0	10.0	19.0	19.0	10.0	19.0	
Total Split (%)	13.0%	56.0%	56.0%	15.0%	58.0%	10.0%	19.0%	19.0%	10.0%	19.0%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0	1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	6.0	4.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None	None	
Act Effct Green (s)	72.9	63.6	63.6	70.9	62.6	14.6	8.3	8.3	14.6	8.3	100.0
Actuated g/C Ratio	0.73	0.64	0.64	0.71	0.63	0.15	0.08	0.08	0.15	0.08	1.00
v/c Ratio	0.58	0.27	0.13	0.22	0.59	0.37	0.28	0.27	0.38	0.41	0.05

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 41 (41%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.59
Intersection Signal Delay: 12.5
Intersection Capacity Utilization 67.6%
Analysis Period (min) 15

Splits and Phases: 2: Perry St. & Plum Creek Pkwy.





Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	173	587	136	136	1304	82	43	65	87	65	85
v/c Ratio	0.58	0.27	0.13	0.22	0.59	0.37	0.28	0.27	0.38	0.41	0.05
Control Delay	11.2	12.1	7.3	4.1	9.3	38.1	46.5	3.6	38.5	50.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.2	12.1	7.3	4.1	9.3	38.1	46.5	3.6	38.5	50.6	0.1
Queue Length 50th (ft)	28	158	45	17	187	44	26	0	47	40	0
Queue Length 95th (ft)	73	207	84	m33	238	83	59	6	87	81	0
Internal Link Dist (ft)		473			1330		455			497	
Turn Bay Length (ft)	170		70	100		185		65	120		120
Base Capacity (vph)	334	2208	1031	706	2205	226	244	309	230	247	1615
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.27	0.13	0.19	0.59	0.36	0.18	0.21	0.38	0.26	0.05

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	159	540	125	125	1054	145	75	40	60	80	60	78
Future Volume (veh/h)	159	540	125	125	1054	145	75	40	60	80	60	78
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1885	1885	1885	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	173	587	136	136	1146	158	82	43	65	87	65	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	4	4	1	1	1	1	1	1	0	0	0
Cap, veh/h	426	2200	981	516	1967	271	219	123	103	234	129	
Arrive On Green	0.02	0.21	0.21	0.09	1.00	1.00	0.06	0.07	0.07	0.06	0.07	0.00
Sat Flow, veh/h	1753	3497	1560	1795	3163	435	1795	1885	1583	1810	1900	1610
Grp Volume(v), veh/h	173	587	136	136	648	656	82	43	65	87	65	0
Grp Sat Flow(s),veh/h/ln	1753	1749	1560	1795	1791	1807	1795	1885	1583	1810	1900	1610
Q Serve(g_s), s	3.4	14.1	7.1	2.8	0.0	0.0	4.2	2.2	4.0	4.4	3.3	0.0
Cycle Q Clear(g_c), s	3.4	14.1	7.1	2.8	0.0	0.0	4.2	2.2	4.0	4.4	3.3	0.0
Prop In Lane	1.00		1.00	1.00		0.24	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	426	2200	981	516	1114	1124	219	123	103	234	129	
V/C Ratio(X)	0.41	0.27	0.14	0.26	0.58	0.58	0.37	0.35	0.63	0.37	0.50	
Avail Cap(c_a), veh/h	488	2200	981	629	1114	1124	226	245	206	237	247	
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.89	0.89	0.89	0.80	0.80	0.80	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	6.0	20.3	17.5	6.7	0.0	0.0	40.5	44.7	45.6	40.4	45.0	0.0
Incr Delay (d2), s/veh	0.2	0.3	0.3	0.1	1.8	1.8	0.4	1.3	4.7	0.4	2.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	6.6	2.6	0.8	0.6	0.6	1.9	1.0	1.7	2.0	1.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.2	20.5	17.8	6.7	1.8	1.8	40.9	46.0	50.2	40.7	47.2	0.0
LnGrp LOS	A	C	B	A	A	A	D	D	D	D	D	
Approach Vol, veh/h		896			1440			190			152	A
Approach Delay, s/veh		17.4			2.2			45.3			43.5	
Approach LOS		B			A			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.7	68.9	9.6	12.8	9.4	68.2	9.9	12.5
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	11.0	50.0	6.0	13.0	9.0	52.0	6.0	13.0
Max Q Clear Time (g_c+I1), s	4.8	16.1	6.2	5.3	5.4	2.0	6.4	6.0
Green Ext Time (p_c), s	0.1	4.8	0.0	0.1	0.0	12.2	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	12.7
HCM 6th LOS	B

Notes

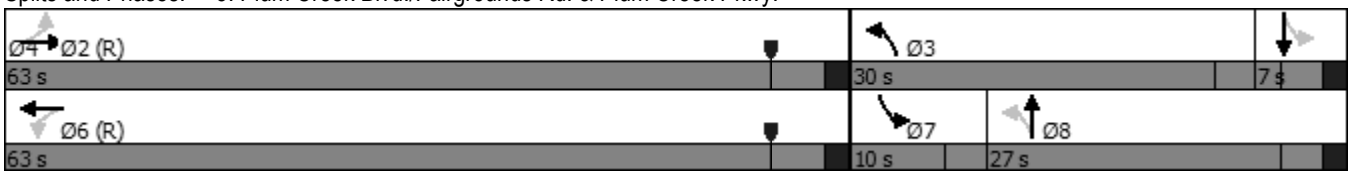
User approved pedestrian interval to be less than phase max green.

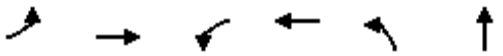
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	Ø4	Ø7
Lane Configurations								
Traffic Volume (vph)	15	460	62	994	325	0		
Future Volume (vph)	15	460	62	994	325	0		
Turn Type	Perm	NA	Perm	NA	pm+pt	NA		
Protected Phases		2		6	3	8	4	7
Permitted Phases	2		6		8			
Detector Phase	2	2	6	6	3	8		
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0	2.0	3.0
Minimum Split (s)	33.0	33.0	28.0	28.0	14.5	10.0	7.0	9.5
Total Split (s)	63.0	63.0	63.0	63.0	30.0	27.0	7.0	10.0
Total Split (%)	63.0%	63.0%	63.0%	63.0%	30.0%	27.0%	7%	10%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	6.0	6.0	6.0	6.0	3.0	5.0		
Lead/Lag					Lead	Lag	Lag	Lead
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	Max	Max	None
Act Effct Green (s)	57.0	57.0	57.0	57.0	34.0	32.0		
Actuated g/C Ratio	0.57	0.57	0.57	0.57	0.34	0.32		
v/c Ratio	0.08	0.38	0.19	0.53	0.69	0.06		

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 44 (44%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 13.7
Intersection Capacity Utilization 68.0%
Analysis Period (min) 15

Splits and Phases: 3: Plum Creek Blvd./Fairgrounds Rd. & Plum Creek Pkwy.





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT
Lane Group Flow (vph)	16	728	67	1081	353	51
v/c Ratio	0.08	0.38	0.19	0.53	0.69	0.06
Control Delay	5.1	3.5	12.0	14.5	35.4	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.1	3.5	12.0	14.5	35.4	0.1
Queue Length 50th (ft)	2	6	19	209	183	0
Queue Length 95th (ft)	m7	51	43	265	277	0
Internal Link Dist (ft)		1330		637		613
Turn Bay Length (ft)	70		55			
Base Capacity (vph)	208	1938	362	2037	556	805
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.38	0.19	0.53	0.63	0.06

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	460	210	62	994	1	325	0	47	0	0	0
Future Volume (veh/h)	15	460	210	62	994	1	325	0	47	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1885	1885	1885	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	16	500	228	67	1080	1	353	0	51	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	4	4	1	1	1	1	1	1	0	0	0
Cap, veh/h	318	1478	671	535	2323	2	473	0	411	101	38	0
Arrive On Green	1.00	1.00	1.00	0.63	0.63	0.63	0.21	0.00	0.26	0.00	0.00	0.00
Sat Flow, veh/h	514	2337	1060	732	3672	3	1795	0	1598	1810	1900	0
Grp Volume(v), veh/h	16	373	355	67	527	554	353	0	51	0	0	0
Grp Sat Flow(s),veh/h/ln	514	1749	1649	732	1791	1885	1795	0	1598	1810	1900	0
Q Serve(g_s), s	0.8	0.0	0.0	3.7	15.3	15.3	18.4	0.0	2.4	0.0	0.0	0.0
Cycle Q Clear(g_c), s	16.1	0.0	0.0	3.7	15.3	15.3	18.4	0.0	2.4	0.0	0.0	0.0
Prop In Lane	1.00		0.64	1.00		0.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	318	1106	1043	535	1133	1192	473	0	411	101	38	0
V/C Ratio(X)	0.05	0.34	0.34	0.13	0.46	0.46	0.75	0.00	0.12	0.00	0.00	0.00
Avail Cap(c_a), veh/h	318	1106	1043	535	1133	1192	585	0	411	226	38	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.97	0.97	0.97	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	1.9	0.0	0.0	7.4	9.6	9.6	35.3	0.0	28.5	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.8	0.9	0.5	1.4	1.3	2.9	0.0	0.6	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.2	0.2	0.6	5.7	6.0	8.3	0.0	1.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	2.2	0.8	0.9	7.9	10.9	10.9	38.2	0.0	29.1	0.0	0.0	0.0
LnGrp LOS	A	A	A	A	B	B	D	A	C	A	A	A
Approach Vol, veh/h		744			1148			404			0	
Approach Delay, s/veh		0.9			10.7			37.1			0.0	
Approach LOS		A			B			D				

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	69.2	23.8	7.0	69.2	0.0	30.8
Change Period (Y+Rc), s	6.0	3.0	5.0	6.0	3.0	5.0
Max Green Setting (Gmax), s	57.0	27.0	2.0	57.0	7.0	22.0
Max Q Clear Time (g_c+I1), s	18.1	20.4	0.0	17.3	0.0	4.4
Green Ext Time (p_c), s	5.4	0.3	0.0	9.3	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	12.2
HCM 6th LOS	B

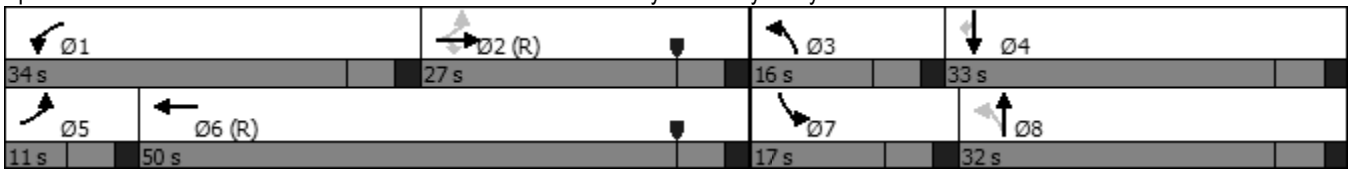
Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	330	6	626	142	118	12	293	562	82	249	38
Future Volume (vph)	125	330	6	626	142	118	12	293	562	82	249	38
Turn Type	pm+pt	NA	Perm	Prot	NA	Free	pm+pt	NA	Free	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2			Free	8		Free			4
Detector Phase	5	2	2	1	6		3	8		7	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	11.0	33.0	33.0	11.0	33.0		11.0	33.0		11.0	33.0	33.0
Total Split (s)	11.0	27.0	27.0	34.0	50.0		16.0	32.0		17.0	33.0	33.0
Total Split (%)	10.0%	24.5%	24.5%	30.9%	45.5%		14.5%	29.1%		15.5%	30.0%	30.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max		None	Max		Max	Max	Max
Act Effct Green (s)	28.4	23.4	23.4	25.6	44.0	110.0	32.1	26.0	110.0	11.0	37.9	37.9
Actuated g/C Ratio	0.26	0.21	0.21	0.23	0.40	1.00	0.29	0.24	1.00	0.10	0.34	0.34
v/c Ratio	0.39	0.48	0.01	0.85	0.21	0.08	0.04	0.38	0.39	0.26	0.23	0.06

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 30.4
Intersection Capacity Utilization 59.5%
Analysis Period (min) 15

Splits and Phases: 7: Dawson Trail Blvd. & Collector Road A/Crystal Valley Pkwy.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	136	359	7	680	154	128	13	318	611	89	271	41
v/c Ratio	0.39	0.48	0.01	0.85	0.21	0.08	0.04	0.38	0.39	0.26	0.23	0.06
Control Delay	25.1	41.1	0.0	54.5	37.8	0.1	21.4	36.8	0.7	47.9	27.8	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.1	41.1	0.0	54.5	37.8	0.1	21.4	36.8	0.7	47.9	27.8	0.2
Queue Length 50th (ft)	50	119	0	261	98	0	6	99	0	30	65	0
Queue Length 95th (ft)	86	170	0	324	m149	m0	18	142	0	55	116	0
Internal Link Dist (ft)		1283			1733			1960			1008	
Turn Bay Length (ft)	200		200	500			500		1000	500		500
Base Capacity (vph)	348	752	507	873	745	1583	418	836	1583	343	1184	666
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.48	0.01	0.78	0.21	0.08	0.03	0.38	0.39	0.26	0.23	0.06

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	330	6	626	142	118	12	293	562	82	249	38
Future Volume (veh/h)	125	330	6	626	142	118	12	293	562	82	249	38
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900	1870	1870	1870	1870	1870	1870	1870	1826	1826
Adj Flow Rate, veh/h	136	359	7	680	154	0	13	318	0	89	271	41
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	0	2	2	2	2	2	2	2	5	5
Cap, veh/h	433	810	367	751	748		344	840		346	1115	497
Arrive On Green	0.05	0.23	0.23	0.36	0.67	0.00	0.01	0.24	0.00	0.10	0.32	0.32
Sat Flow, veh/h	1810	3554	1610	3456	1870	1585	1781	3554	1585	3456	3469	1547
Grp Volume(v), veh/h	136	359	7	680	154	0	13	318	0	89	271	41
Grp Sat Flow(s),veh/h/ln	1810	1777	1610	1728	1870	1585	1781	1777	1585	1728	1735	1547
Q Serve(g_s), s	5.0	9.5	0.4	20.5	3.5	0.0	0.6	8.3	0.0	2.6	6.3	2.0
Cycle Q Clear(g_c), s	5.0	9.5	0.4	20.5	3.5	0.0	0.6	8.3	0.0	2.6	6.3	2.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	433	810	367	751	748		344	840		346	1115	497
V/C Ratio(X)	0.31	0.44	0.02	0.90	0.21		0.04	0.38		0.26	0.24	0.08
Avail Cap(c_a), veh/h	433	810	367	880	748		480	840		346	1115	497
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.74	0.74	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.5	36.5	32.9	33.9	11.5	0.0	31.1	35.2	0.0	45.7	27.5	26.0
Incr Delay (d2), s/veh	0.4	1.8	0.1	9.0	0.5	0.0	0.0	1.3	0.0	1.8	0.5	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	4.3	0.2	8.3	1.5	0.0	0.3	3.7	0.0	1.2	2.7	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.9	38.2	33.0	42.9	12.0	0.0	31.1	36.5	0.0	47.5	28.0	26.3
LnGrp LOS	C	D	C	D	B		C	D		D	C	C
Approach Vol, veh/h		502			834	A		331	A		401	
Approach Delay, s/veh		36.4			37.2			36.3			32.2	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	29.9	31.1	7.6	41.4	11.0	50.0	17.0	32.0
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	28.0	21.0	10.0	27.0	5.0	44.0	11.0	26.0
Max Q Clear Time (g_c+I1), s	22.5	11.5	2.6	8.3	7.0	5.5	4.6	10.3
Green Ext Time (p_c), s	1.4	1.6	0.0	1.7	0.0	0.9	0.1	1.8

Intersection Summary	
HCM 6th Ctrl Delay	35.9
HCM 6th LOS	D

Notes

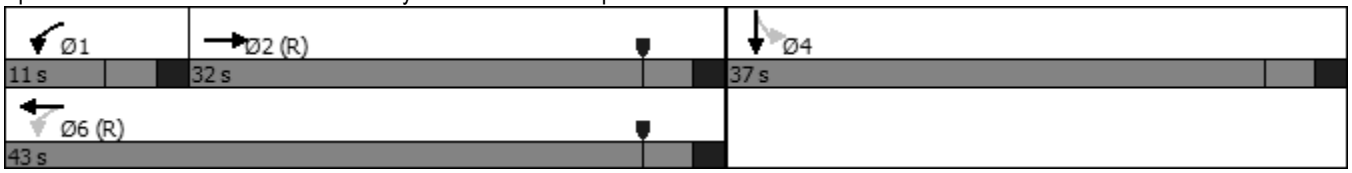
User approved pedestrian interval to be less than phase max green.

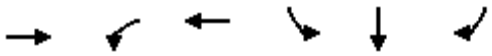
Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	665	90	646	630	5	444
Future Volume (vph)	665	90	646	630	5	444
Turn Type	NA	pm+pt	NA	Perm	NA	Free
Protected Phases	2	1	6		4	
Permitted Phases		6		4		Free
Detector Phase	2	1	6	4	4	
Switch Phase						
Minimum Initial (s)	10.0	5.0	10.0	5.0	5.0	
Minimum Split (s)	30.0	10.0	30.0	10.0	10.0	
Total Split (s)	32.0	11.0	43.0	37.0	37.0	
Total Split (%)	40.0%	13.8%	53.8%	46.3%	46.3%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes				
Recall Mode	C-Max	None	C-Max	None	None	
Act Effct Green (s)	40.3	50.6	50.6	19.4	19.4	80.0
Actuated g/C Ratio	0.50	0.63	0.63	0.24	0.24	1.00
v/c Ratio	0.34	0.24	0.32	0.60	0.61	0.31

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 20 (25%), Referenced to phase 2:EBT and 6:WBTL, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 14.2
Intersection Capacity Utilization 80.5%
Analysis Period (min) 15

Splits and Phases: 8: Plum Creek Pkwy & I-25 SB Off-Ramp





Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	857	100	718	469	237	493
v/c Ratio	0.34	0.24	0.32	0.60	0.61	0.31
Control Delay	13.7	8.6	8.1	29.4	32.6	0.5
Queue Delay	0.0	0.0	0.9	0.0	0.0	0.0
Total Delay	13.7	8.6	9.0	29.4	32.6	0.5
Queue Length 50th (ft)	87	17	75	115	116	0
Queue Length 95th (ft)	151	46	140	141	169	0
Internal Link Dist (ft)	437		181		388	
Turn Bay Length (ft)						160
Base Capacity (vph)	2529	423	2239	1288	646	1583
Starvation Cap Reductn	0	0	1175	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.24	0.67	0.36	0.37	0.31

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	665	106	90	646	0	0	0	0	630	5	444
Future Volume (veh/h)	0	665	106	90	646	0	0	0	0	630	5	444
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	739	118	100	718	0				704	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90				0.90	0.90	0.90
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2551	404	504	2460	0				977	0	
Arrive On Green	0.00	0.57	0.57	0.06	0.69	0.00				0.18	0.00	0.00
Sat Flow, veh/h	0	4613	703	1781	3647	0				5344	0	1585
Grp Volume(v), veh/h	0	564	293	100	718	0				704	0	0
Grp Sat Flow(s),veh/h/ln	0	1702	1744	1781	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	6.8	6.9	1.6	6.2	0.0				9.9	0.0	0.0
Cycle Q Clear(g_c), s	0.0	6.8	6.9	1.6	6.2	0.0				9.9	0.0	0.0
Prop In Lane	0.00		0.40	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1954	1001	504	2460	0				977	0	
V/C Ratio(X)	0.00	0.29	0.29	0.20	0.29	0.00				0.72	0.00	
Avail Cap(c_a), veh/h	0	1954	1001	538	2460	0				2138	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.61	0.61	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	8.7	8.7	5.6	4.8	0.0				30.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.4	0.7	0.1	0.2	0.0				1.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.3	2.5	0.5	1.8	0.0				4.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	9.1	9.5	5.8	4.9	0.0				31.8	0.0	0.0
LnGrp LOS	A	A	A	A	A	A				C	A	
Approach Vol, veh/h		857			818						704	A
Approach Delay, s/veh		9.2			5.0						31.8	
Approach LOS		A			A						C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	9.5	50.9		19.6		60.4
Change Period (Y+Rc), s	5.0	5.0		5.0		5.0
Max Green Setting (Gmax), s	6.0	27.0		32.0		38.0
Max Q Clear Time (g_c+I1), s	3.6	8.9		11.9		8.2
Green Ext Time (p_c), s	0.0	5.5		2.7		5.6

Intersection Summary	
HCM 6th Ctrl Delay	14.5
HCM 6th LOS	B

Notes

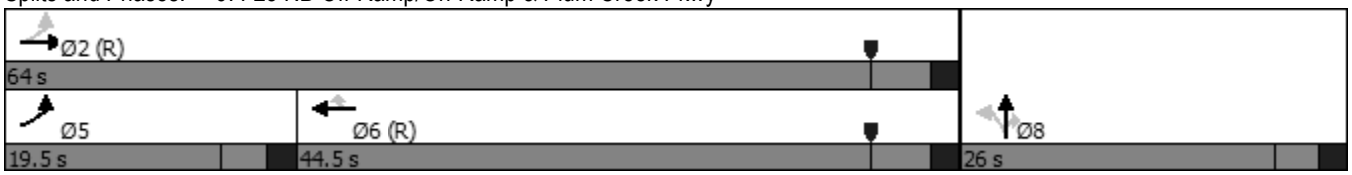
User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	331	963	588	975	159	2	115
Future Volume (vph)	331	963	588	975	159	2	115
Turn Type	pm+pt	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6			8	
Permitted Phases	2			6	8		8
Detector Phase	5	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0	5.0
Minimum Split (s)	10.0	31.0	24.0	24.0	40.0	40.0	40.0
Total Split (s)	19.5	64.0	44.5	44.5	26.0	26.0	26.0
Total Split (%)	21.7%	71.1%	49.4%	49.4%	28.9%	28.9%	28.9%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max
Act Effct Green (s)	59.0	58.0	38.5	38.5	21.0	21.0	21.0
Actuated g/C Ratio	0.66	0.64	0.43	0.43	0.23	0.23	0.23
v/c Ratio	0.98	0.32	0.77	0.58	0.27	0.27	0.22

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 53 (59%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 19.4
Intersection Capacity Utilization 80.5%
Analysis Period (min) 15

Splits and Phases: 9: I-25 NB Off-Ramp/On-Ramp & Plum Creek Pkwy





Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	360	1047	1169	530	104	102	94
v/c Ratio	0.98	0.32	0.77	0.58	0.27	0.27	0.22
Control Delay	66.6	7.5	20.2	4.4	30.4	24.1	7.4
Queue Delay	2.3	1.1	0.0	0.0	0.0	0.0	0.0
Total Delay	68.9	8.6	20.2	4.4	30.4	24.1	7.4
Queue Length 50th (ft)	152	87	230	0	50	39	0
Queue Length 95th (ft)	#329	109	320	63	97	87	38
Internal Link Dist (ft)		181	431			480	
Turn Bay Length (ft)					350		150
Base Capacity (vph)	369	3277	1518	919	392	382	425
Starvation Cap Reductn	4	1892	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.99	0.76	0.77	0.58	0.27	0.27	0.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	331	963	0	0	588	975	159	2	115	0	0	0
Future Volume (veh/h)	331	963	0	0	588	975	159	2	115	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	360	1047	0	0	639	1060	213	0	84			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	393	3291	0	0	816	1383	831	0	370			
Arrive On Green	0.15	0.64	0.00	0.00	0.44	0.44	0.23	0.00	0.23			
Sat Flow, veh/h	1781	5274	0	0	1870	3170	3563	0	1585			
Grp Volume(v), veh/h	360	1047	0	0	639	1060	213	0	84			
Grp Sat Flow(s),veh/h/ln	1781	1702	0	0	1870	1585	1781	0	1585			
Q Serve(g_s), s	11.6	8.3	0.0	0.0	26.3	25.5	4.4	0.0	3.9			
Cycle Q Clear(g_c), s	11.6	8.3	0.0	0.0	26.3	25.5	4.4	0.0	3.9			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	393	3291	0	0	816	1383	831	0	370			
V/C Ratio(X)	0.91	0.32	0.00	0.00	0.78	0.77	0.26	0.00	0.23			
Avail Cap(c_a), veh/h	408	3291	0	0	816	1383	831	0	370			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.90	0.90	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	22.7	7.2	0.0	0.0	21.7	21.5	28.1	0.0	27.9			
Incr Delay (d2), s/veh	22.7	0.2	0.0	0.0	7.4	4.1	0.7	0.0	1.4			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	10.0	2.7	0.0	0.0	12.6	9.7	1.9	0.0	1.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.4	7.4	0.0	0.0	29.1	25.6	28.9	0.0	29.4			
LnGrp LOS	D	A	A	A	C	C	C	A	C			
Approach Vol, veh/h		1407			1699			297				
Approach Delay, s/veh		17.1			26.9			29.0				
Approach LOS		B			C			C				

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		64.0			18.7	45.3		26.0				
Change Period (Y+Rc), s		6.0			5.0	6.0		5.0				
Max Green Setting (Gmax), s		58.0			14.5	38.5		21.0				
Max Q Clear Time (g_c+I1), s		10.3			13.6	28.3		6.4				
Green Ext Time (p_c), s		9.7			0.1	6.3		0.9				

Intersection Summary												
HCM 6th Ctrl Delay			23.1									
HCM 6th LOS			C									

Notes

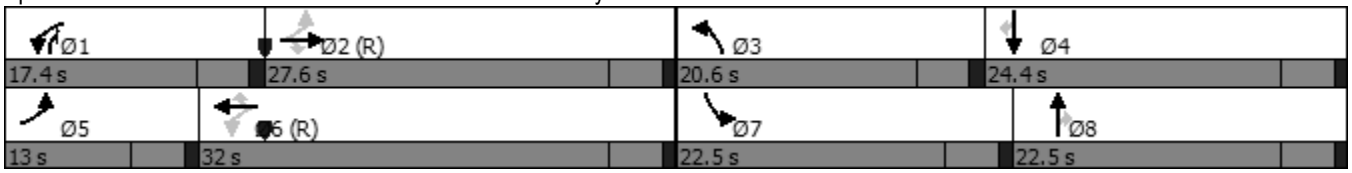
User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	338	83	293	529	54	110	241	324	82	274	26
Future Volume (vph)	22	338	83	293	529	54	110	241	324	82	274	26
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases	2		2	6		6			8			4
Detector Phase	5	2	2	1	6	6	3	8	1	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	9.5	22.5	22.5	22.5
Total Split (s)	13.0	27.6	27.6	17.4	32.0	32.0	20.6	22.5	17.4	22.5	24.4	24.4
Total Split (%)	14.4%	30.7%	30.7%	19.3%	35.6%	35.6%	22.9%	25.0%	19.3%	25.0%	27.1%	27.1%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	Max	Max	Max
Act Effct Green (s)	29.8	23.5	23.5	40.5	35.9	35.9	11.4	18.0	35.0	18.0	24.6	24.6
Actuated g/C Ratio	0.33	0.26	0.26	0.45	0.40	0.40	0.13	0.20	0.39	0.20	0.27	0.27
v/c Ratio	0.07	0.40	0.18	0.68	0.41	0.08	0.54	0.37	0.42	0.13	0.31	0.05

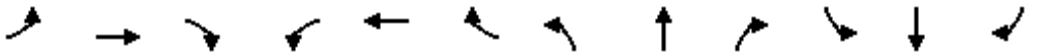
Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 22.6
Intersection Capacity Utilization 54.2%
Analysis Period (min) 15

Splits and Phases: 10: Prairie Hawk Dr & Plum Creek Pkwy



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	24	367	90	318	575	59	120	262	352	89	298	28
v/c Ratio	0.07	0.40	0.18	0.68	0.41	0.08	0.54	0.37	0.42	0.13	0.31	0.05
Control Delay	15.0	29.1	3.0	25.3	21.7	0.2	45.1	32.9	3.8	30.2	27.9	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.0	29.1	3.0	25.3	21.7	0.2	45.1	32.9	3.8	30.2	27.9	0.2
Queue Length 50th (ft)	7	91	0	117	108	0	65	68	0	21	70	0
Queue Length 95th (ft)	21	132	19	185	189	0	114	104	52	41	114	0
Internal Link Dist (ft)		595			922			624			590	
Turn Bay Length (ft)	230		230	230		230	230		230	230		250
Base Capacity (vph)	379	924	507	471	1412	708	316	707	836	686	968	525
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.40	0.18	0.68	0.41	0.08	0.38	0.37	0.42	0.13	0.31	0.05

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	338	83	293	529	54	110	241	324	82	274	26
Future Volume (veh/h)	22	338	83	293	529	54	110	241	324	82	274	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	24	367	90	318	575	0	120	262	352	89	298	28
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	338	912	407	495	1332		152	711	544	691	1117	498
Arrive On Green	0.03	0.26	0.26	0.14	0.37	0.00	0.09	0.20	0.20	0.20	0.31	0.31
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	24	367	90	318	575	0	120	262	352	89	298	28
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1777	1585	1728	1777	1585
Q Serve(g_s), s	0.9	7.7	4.0	11.3	10.9	0.0	5.9	5.7	16.9	1.9	5.6	1.1
Cycle Q Clear(g_c), s	0.9	7.7	4.0	11.3	10.9	0.0	5.9	5.7	16.9	1.9	5.6	1.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	338	912	407	495	1332		152	711	544	691	1117	498
V/C Ratio(X)	0.07	0.40	0.22	0.64	0.43		0.79	0.37	0.65	0.13	0.27	0.06
Avail Cap(c_a), veh/h	461	912	407	495	1332		319	711	544	691	1117	498
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.5	27.7	26.4	19.1	21.0	0.0	40.3	31.1	24.9	29.6	23.1	21.5
Incr Delay (d2), s/veh	0.1	1.3	1.3	2.8	1.0	0.0	8.7	0.3	2.7	0.4	0.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	3.2	1.6	4.6	4.3	0.0	2.9	2.4	6.4	0.8	2.4	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.6	29.1	27.6	21.9	22.0	0.0	49.0	31.4	27.6	29.9	23.7	21.7
LnGrp LOS	C	C	C	C	C		D	C	C	C	C	C
Approach Vol, veh/h		481			893	A		734			415	
Approach Delay, s/veh		28.5			22.0			32.5			24.9	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.4	27.6	12.2	32.8	6.8	38.2	22.5	22.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	12.9	23.1	16.1	19.9	8.5	27.5	18.0	18.0
Max Q Clear Time (g_c+I1), s	13.3	9.7	7.9	7.6	2.9	12.9	3.9	18.9
Green Ext Time (p_c), s	0.0	2.0	0.2	1.5	0.0	3.0	0.2	0.0

Intersection Summary	
HCM 6th Ctrl Delay	26.7
HCM 6th LOS	C

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

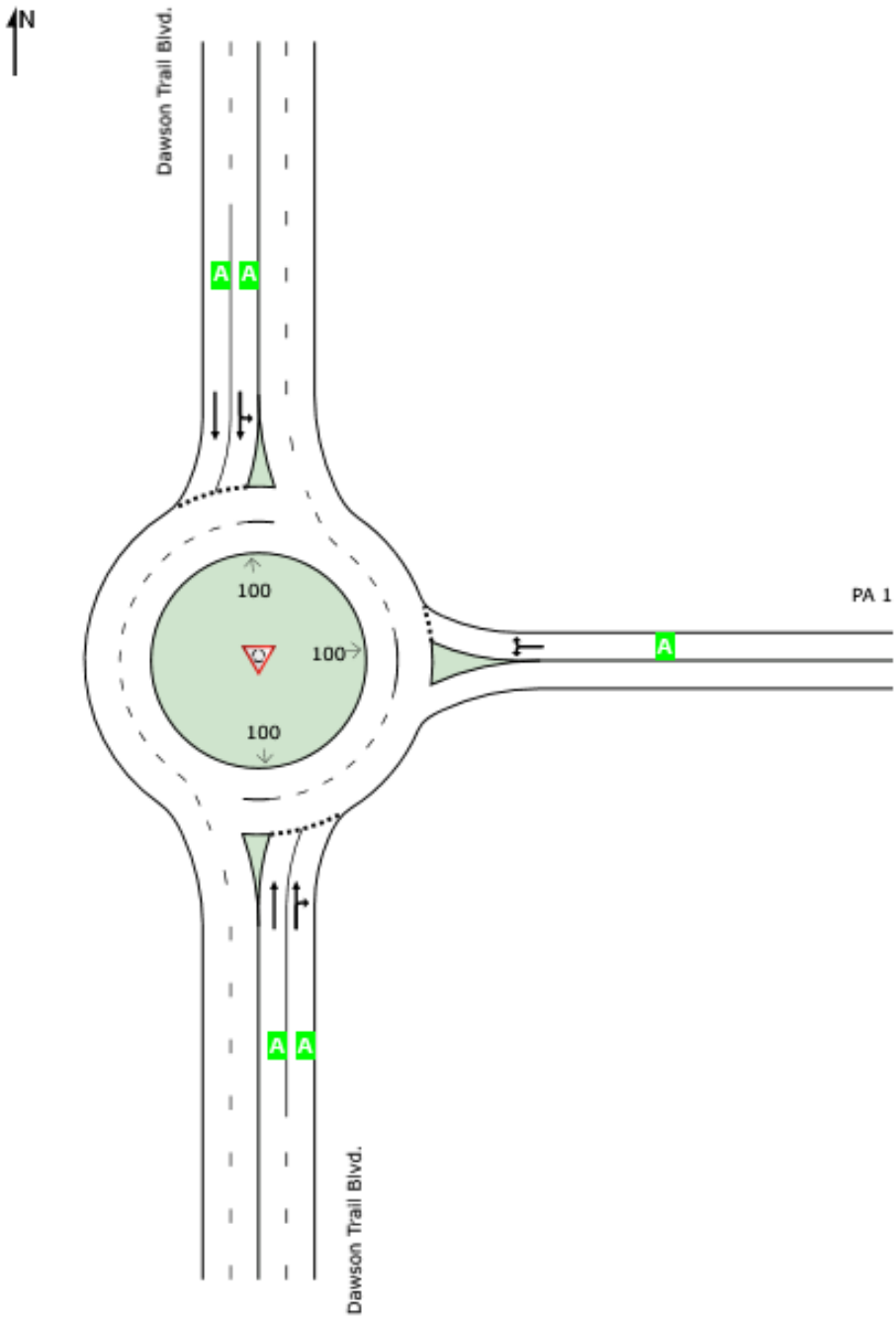
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 101 [Int#101_2030 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches			Intersection
	South	East	North	
LOS	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 8:58:31 AM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int#101.sip9

DELAY (CONTROL)

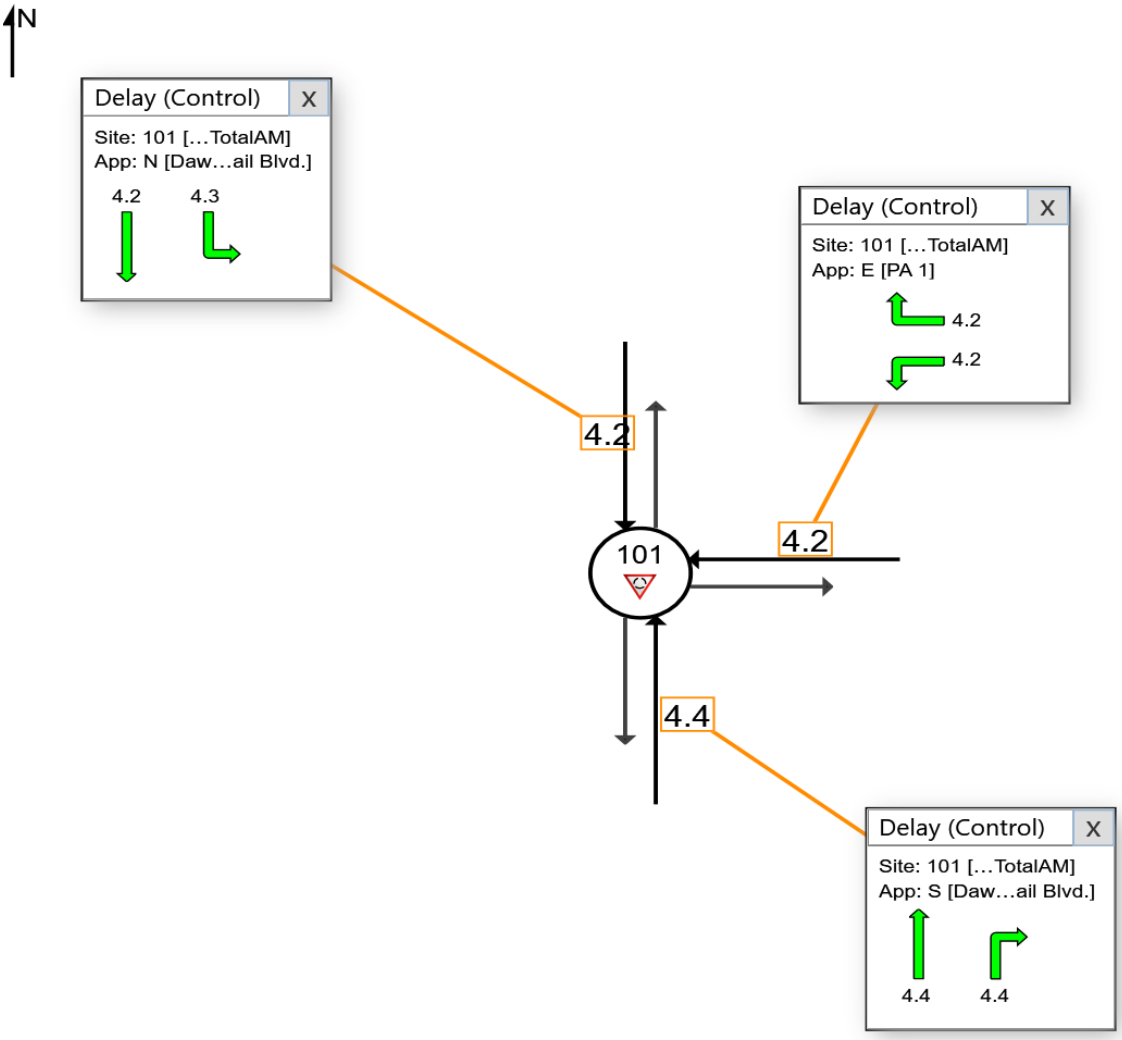
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 101 [Int#101_2030 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



Colour code based on Level of Service



LOS A LOS B LOS C LOS D LOS E LOS F

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Roundabout Level of Service Method: Same as Sign Control
Delay Model: HCM Delay Formula (Geometric Delay is not included).

Approach values are flow-weighted average values for vehicle movements (pedestrian delays not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 8:58:31 AM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int#101.sip9

QUEUE DISTANCE (PERCENTILE)

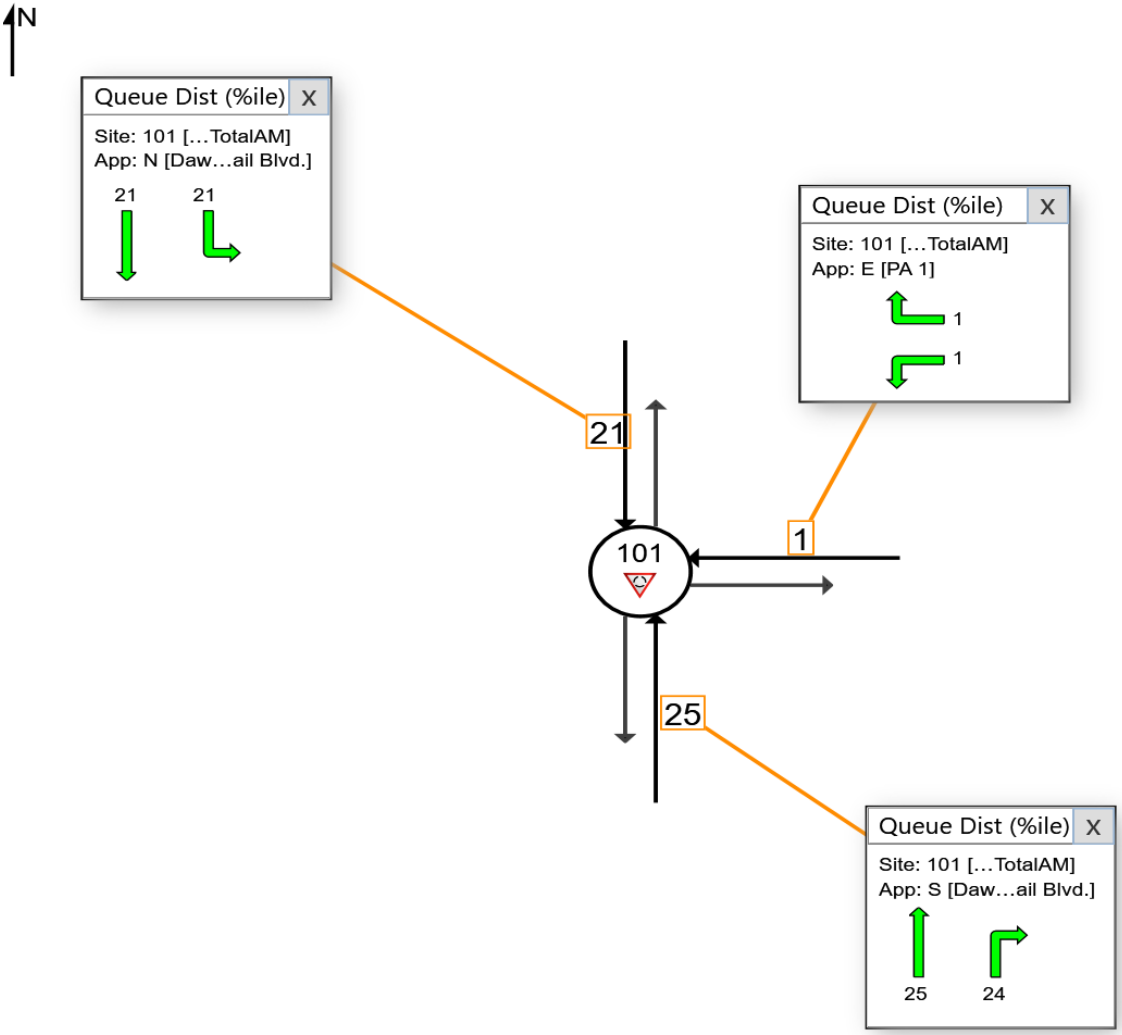
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 101 [Int#101_2030 Total_AM (Site Folder: General)]

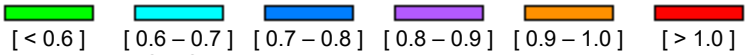
New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



Colour code based on Queue Storage Ratio



[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0]

Queue Model: HCM Queue Formula.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 8:58:31 AM

Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int#101.sip9

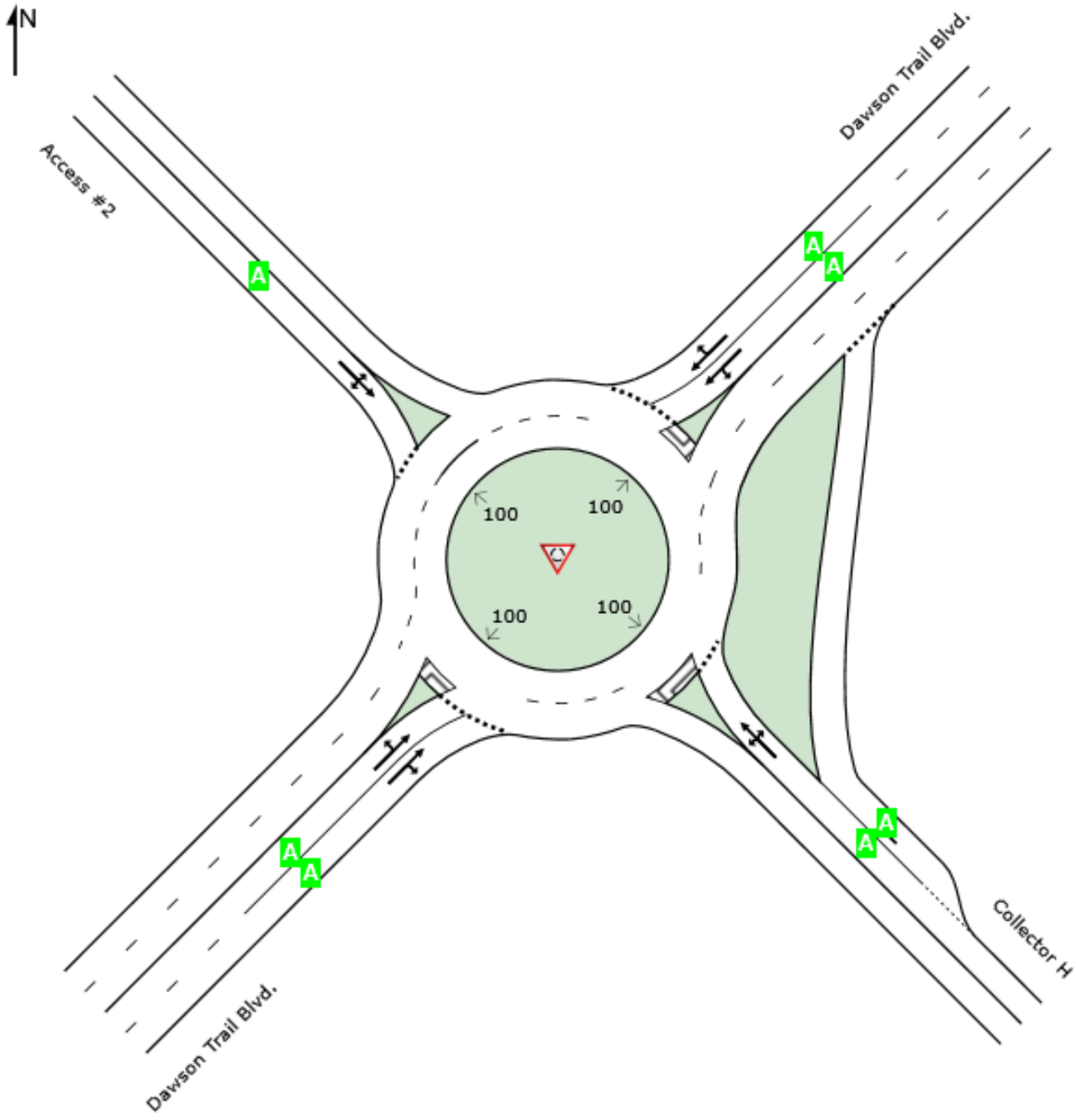
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 102 [Int #102_2030 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
LOS	A	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 9:08:08 AM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #102-mod.sip9

DELAY (CONTROL)

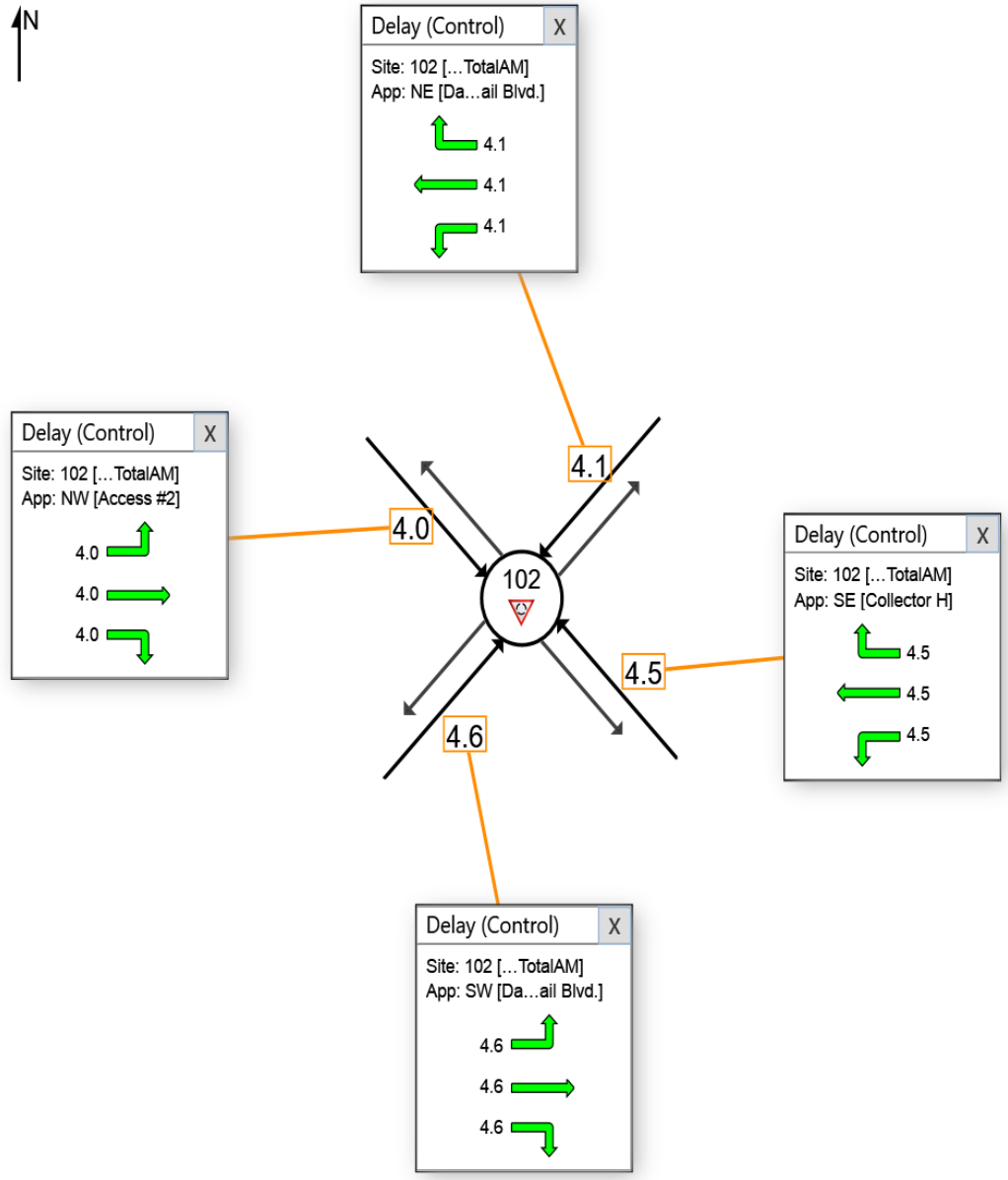
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 102 [Int #102_2030 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popups boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

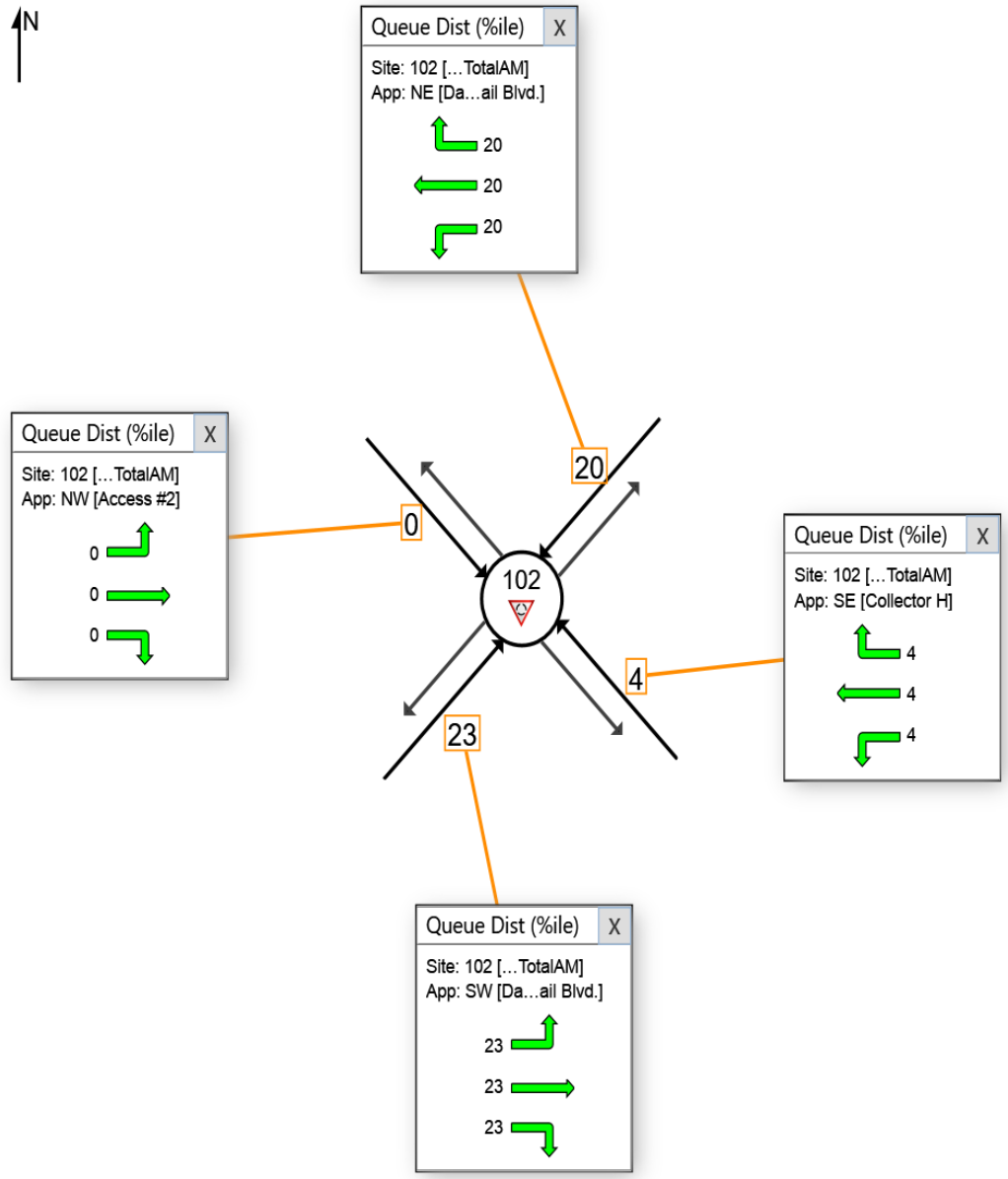
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 102 [Int #102_2030 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↱			↱	↰	↑↑	↱	↰	↑↑↱	
Traffic Vol, veh/h	0	0	8	0	0	9	11	486	39	14	361	2
Future Vol, veh/h	0	0	8	0	0	9	11	486	39	14	361	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	250	-	0	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	9	0	0	10	12	528	42	15	392	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	197	-	-	264	394	0	0	570	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	811	0	0	734	1161	-	-	999	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	811	-	-	734	1161	-	-	999	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.5	10	0.2	0.3
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1161	-	-	811	734	999	-	-
HCM Lane V/C Ratio	0.01	-	-	0.011	0.013	0.015	-	-
HCM Control Delay (s)	8.1	-	-	9.5	10	8.7	-	-
HCM Lane LOS	A	-	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

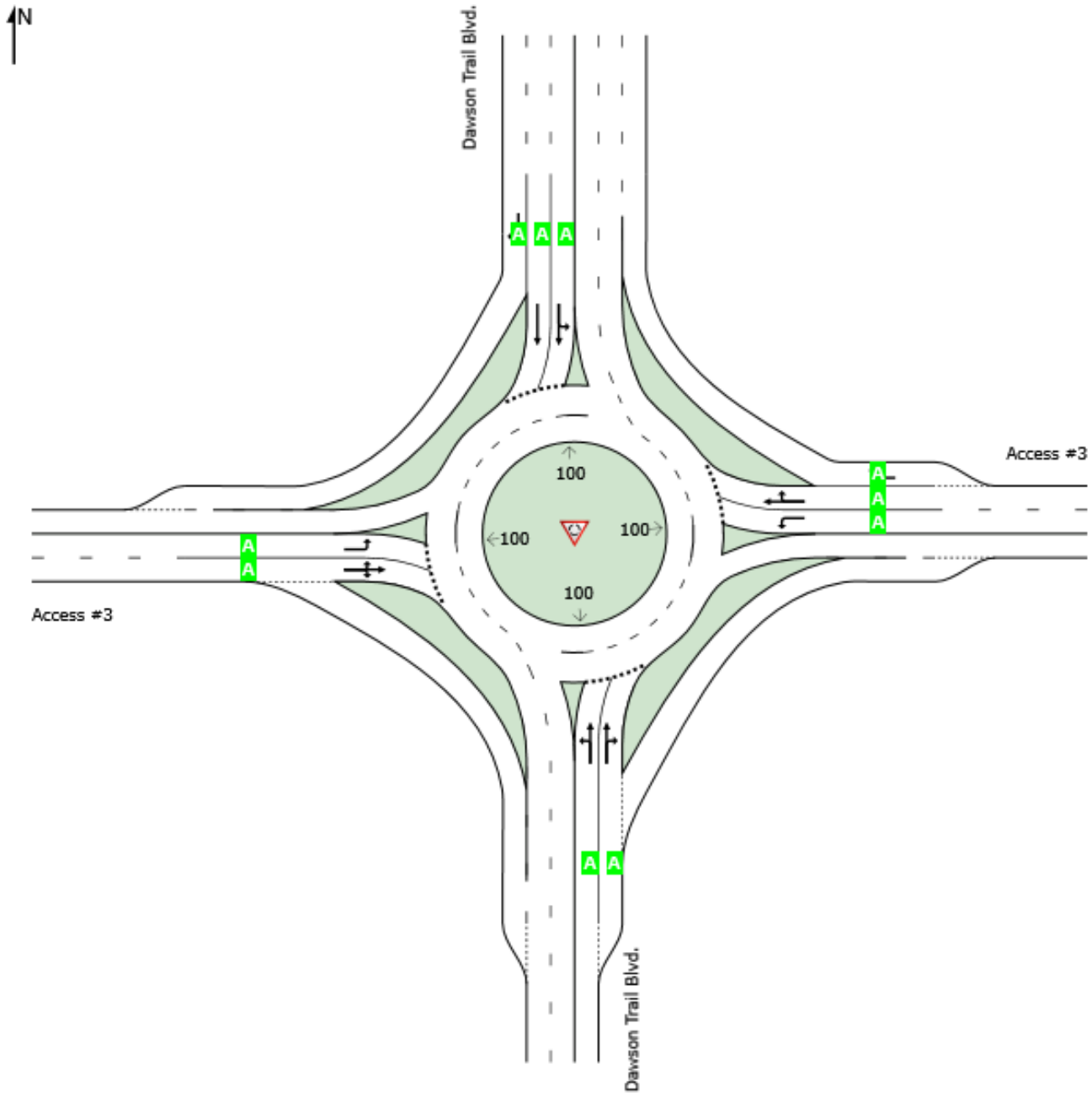
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 104 [Int#104_2030 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	A	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 9:28:37 AM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #104-mod.sip9

DELAY (CONTROL)

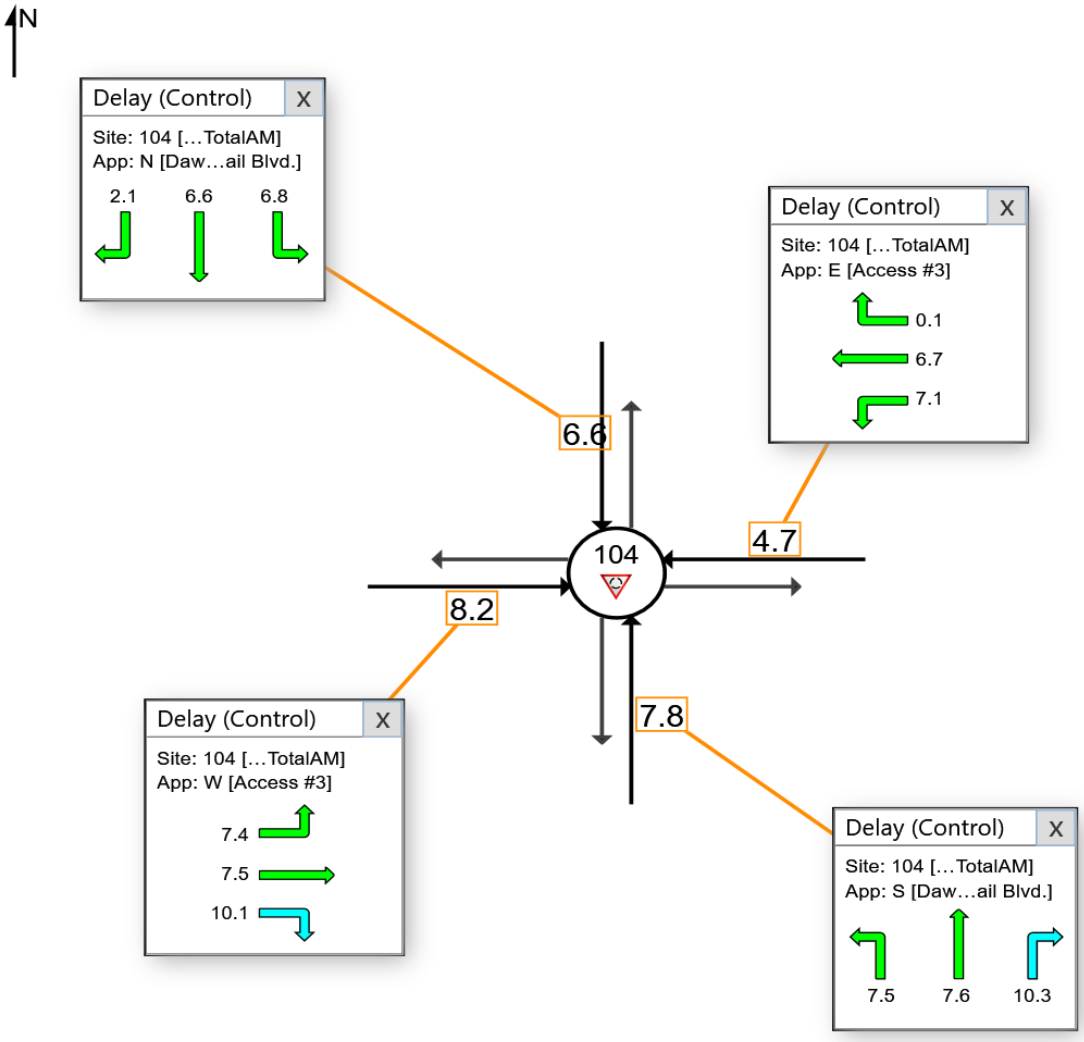
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 104 [Int#104_2030 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

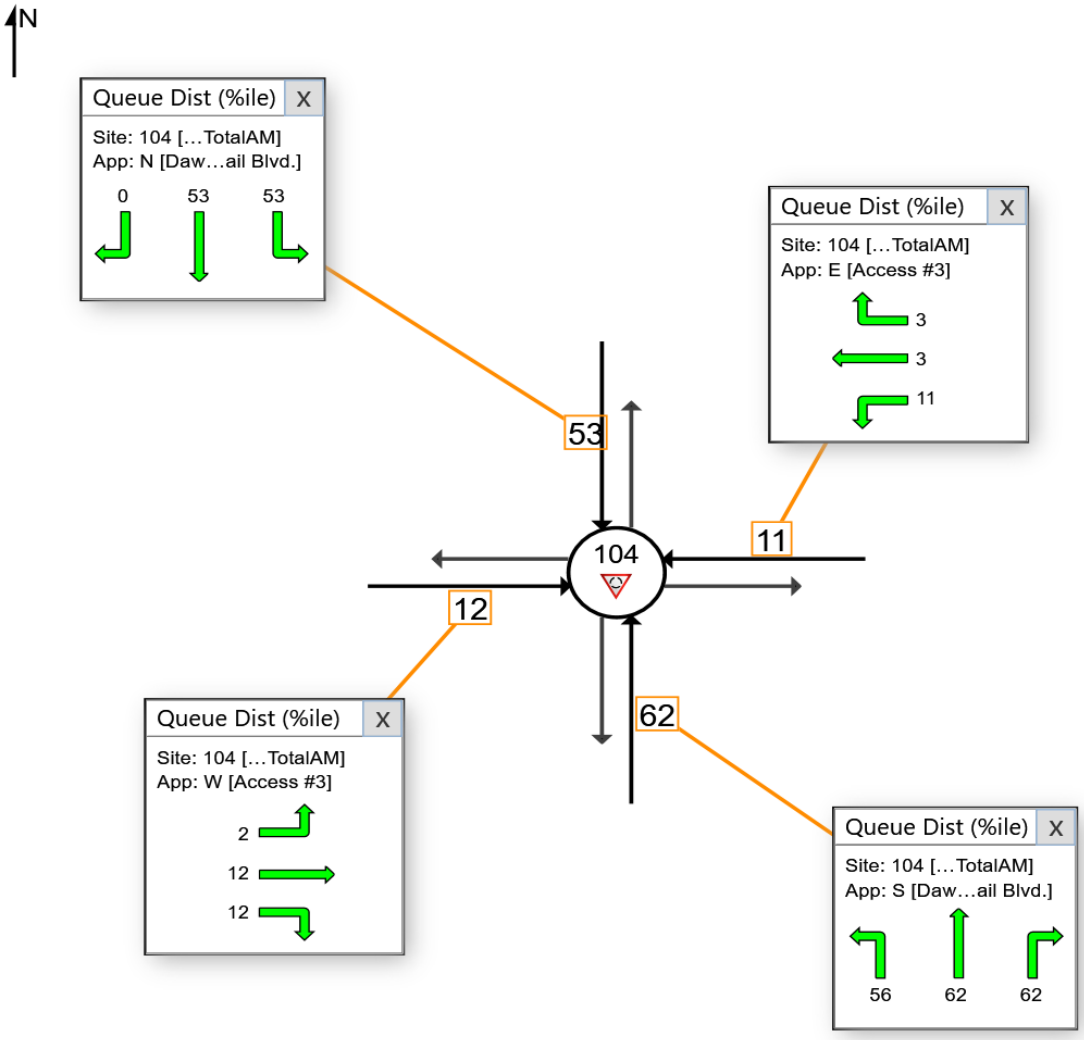
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 104 [Int#104_2030 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popups. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



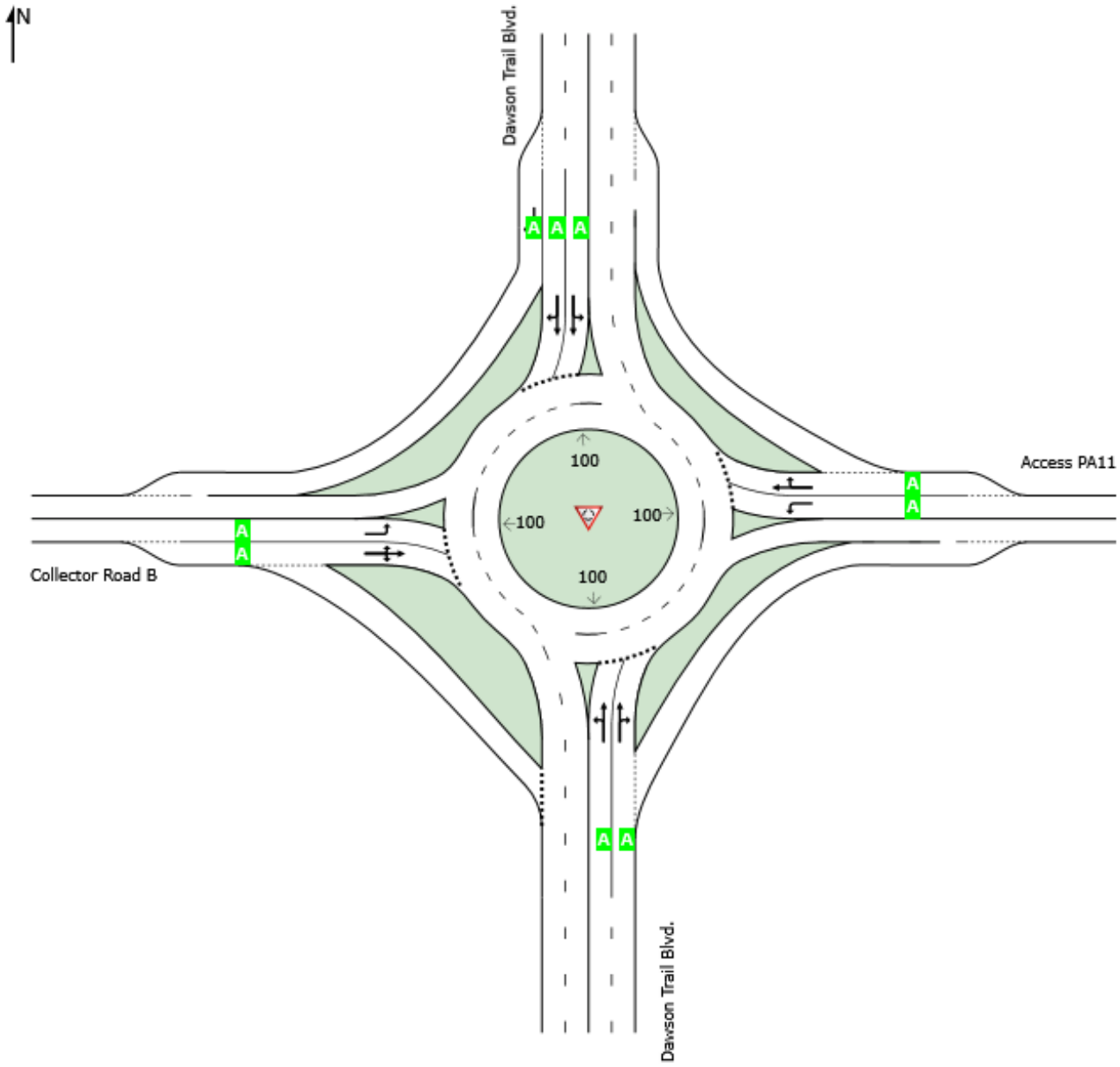
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 105 [Int#105_2030 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	A	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 9:36:24 AM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #105-mod.sip9

DELAY (CONTROL)

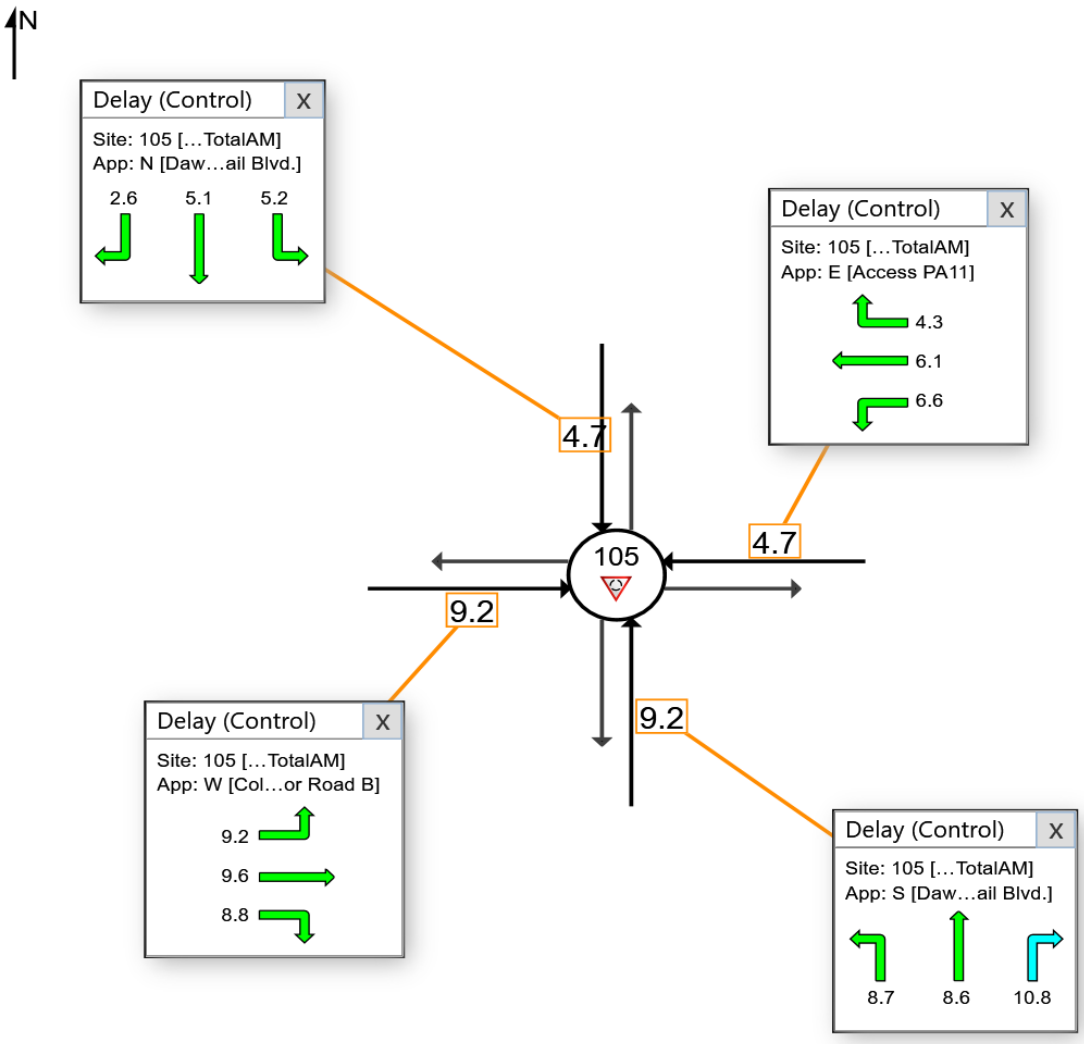
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 105 [Int#105_2030 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

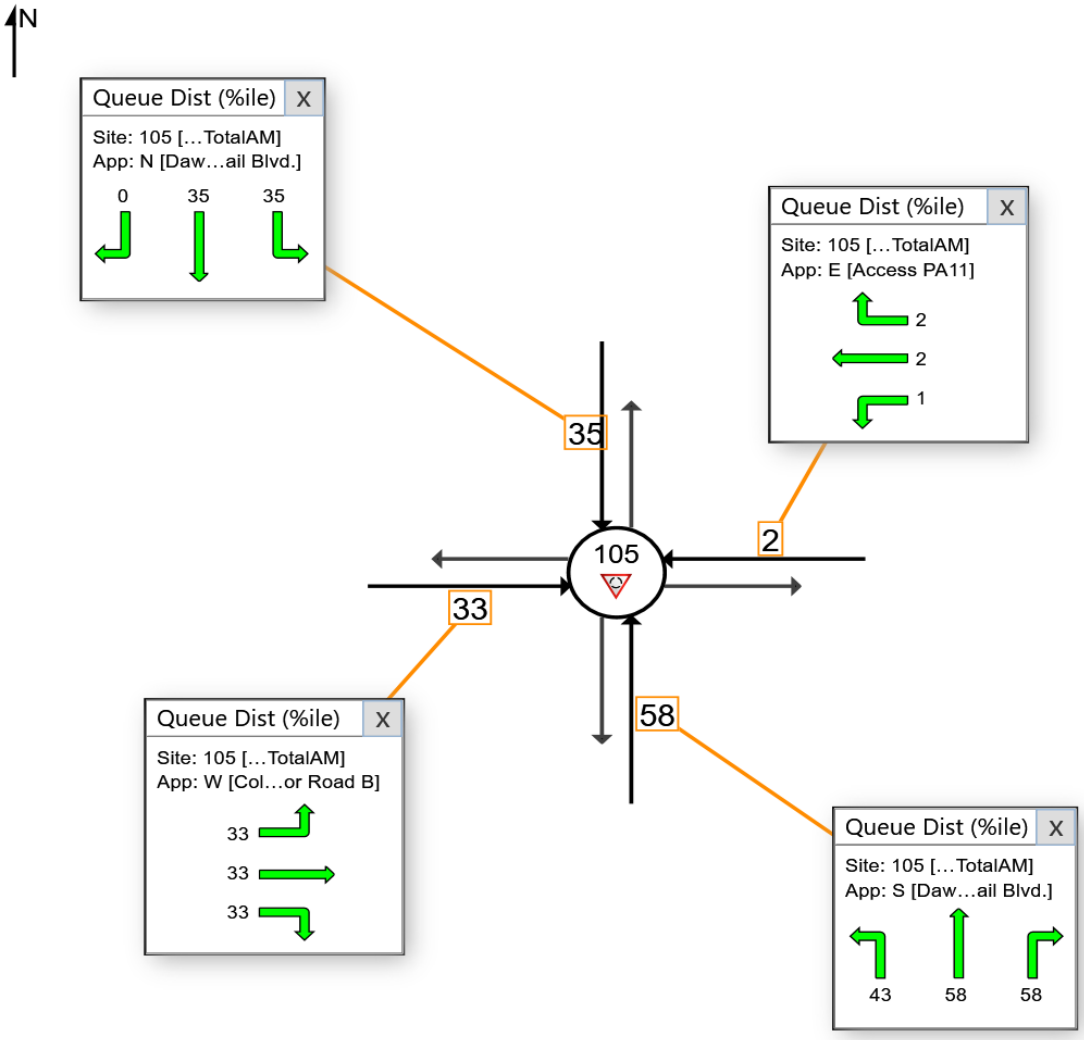
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 105 [Int#105_2030 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



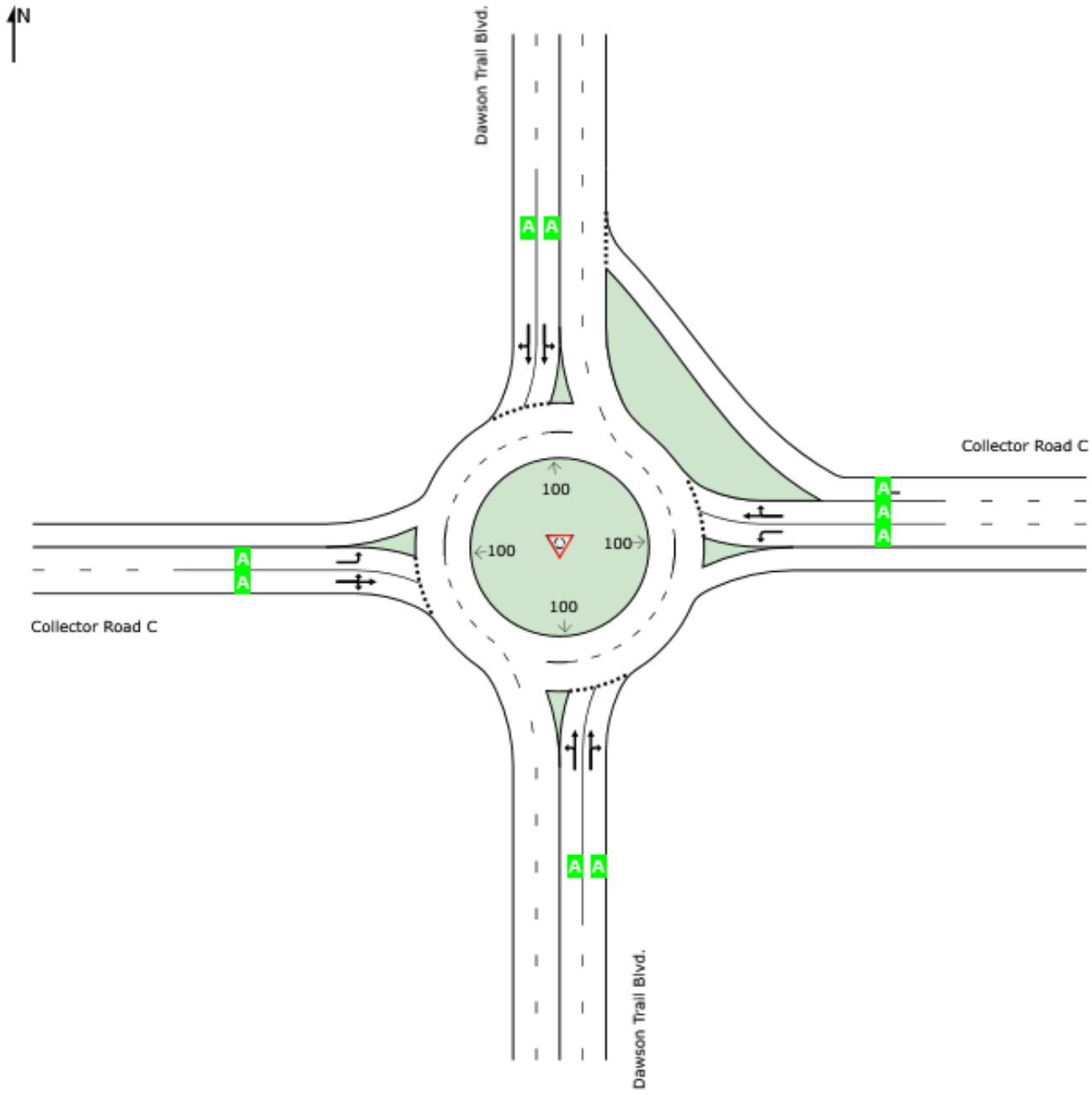
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 106 [Int#106_2030 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	A	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 9:50:33 AM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int#106-mod.sip9

DELAY (CONTROL)

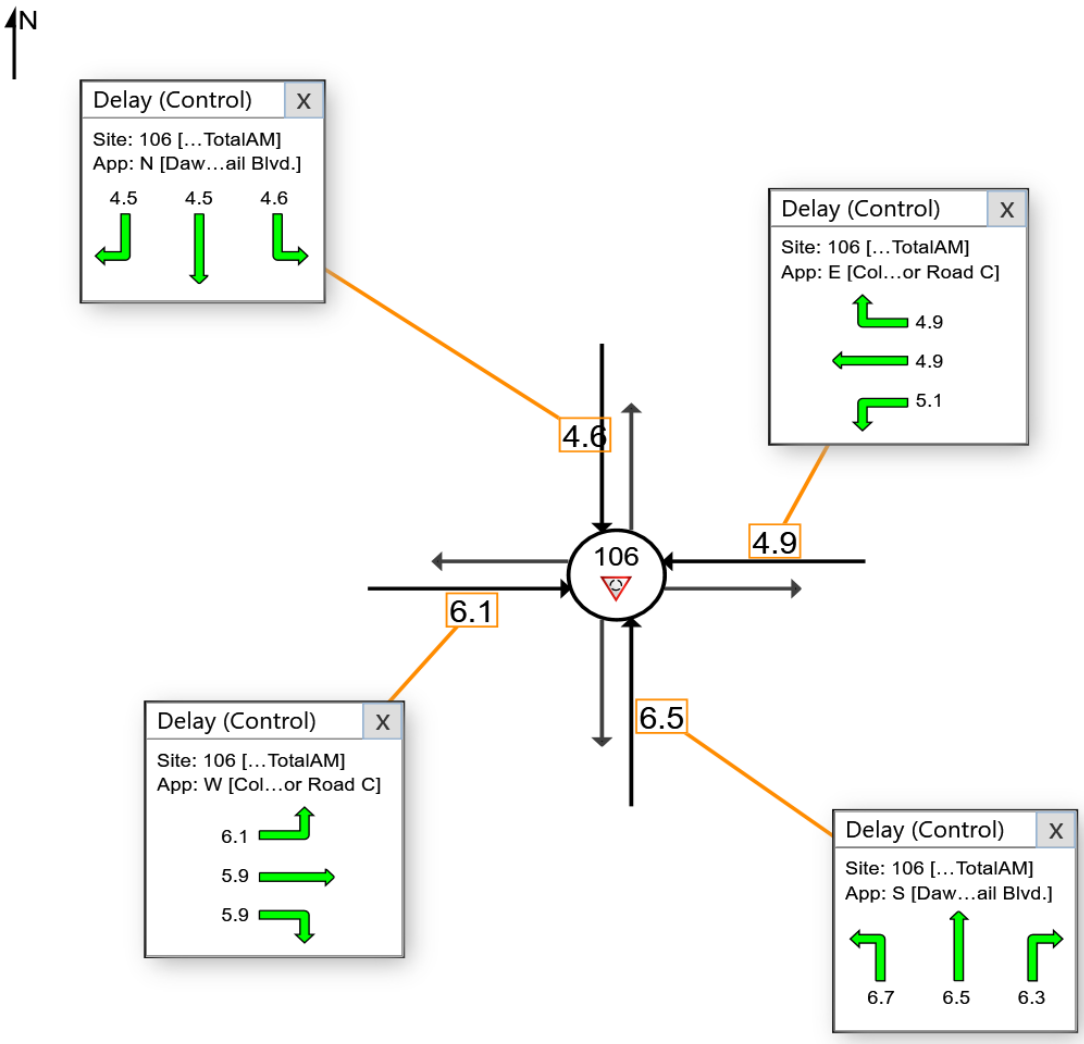
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 106 [Int#106_2030 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

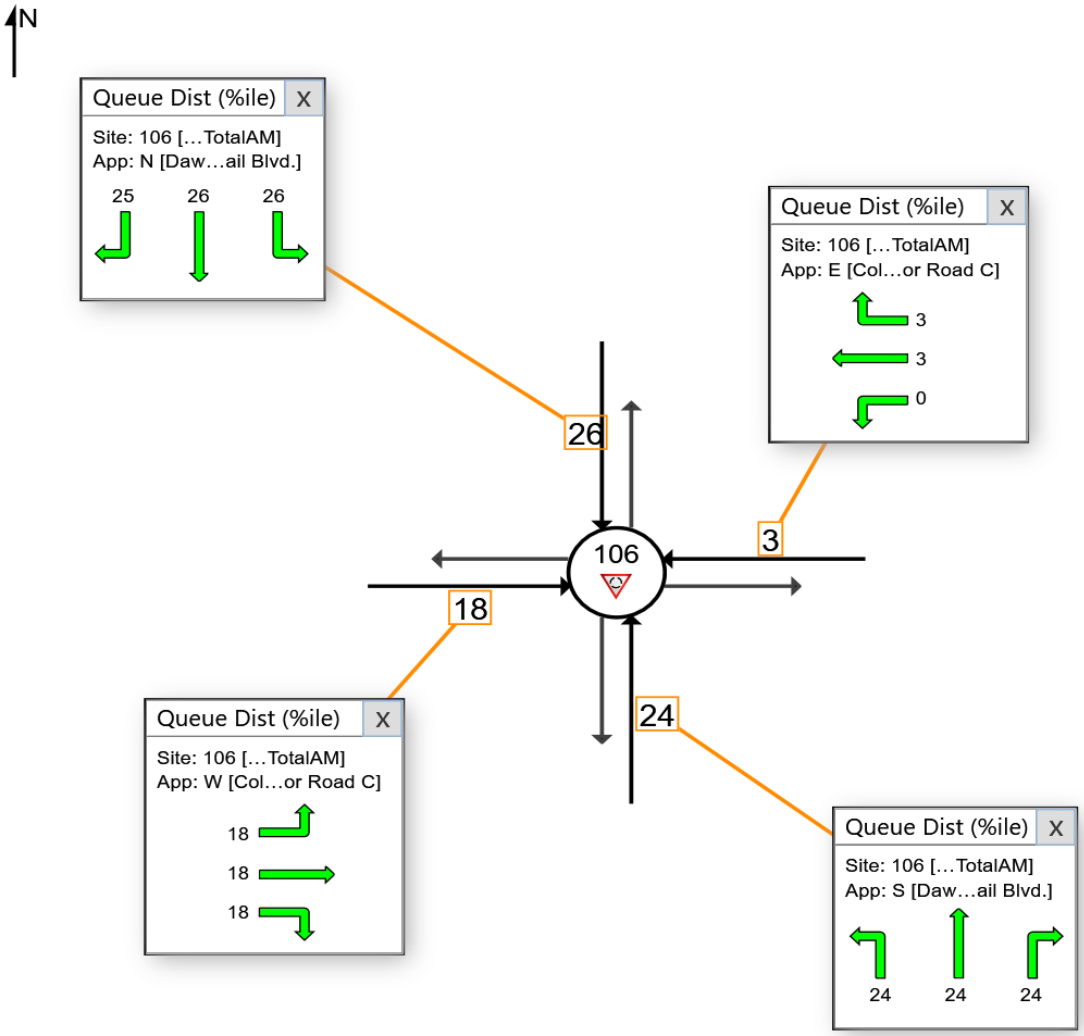
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 106 [Int#106_2030 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



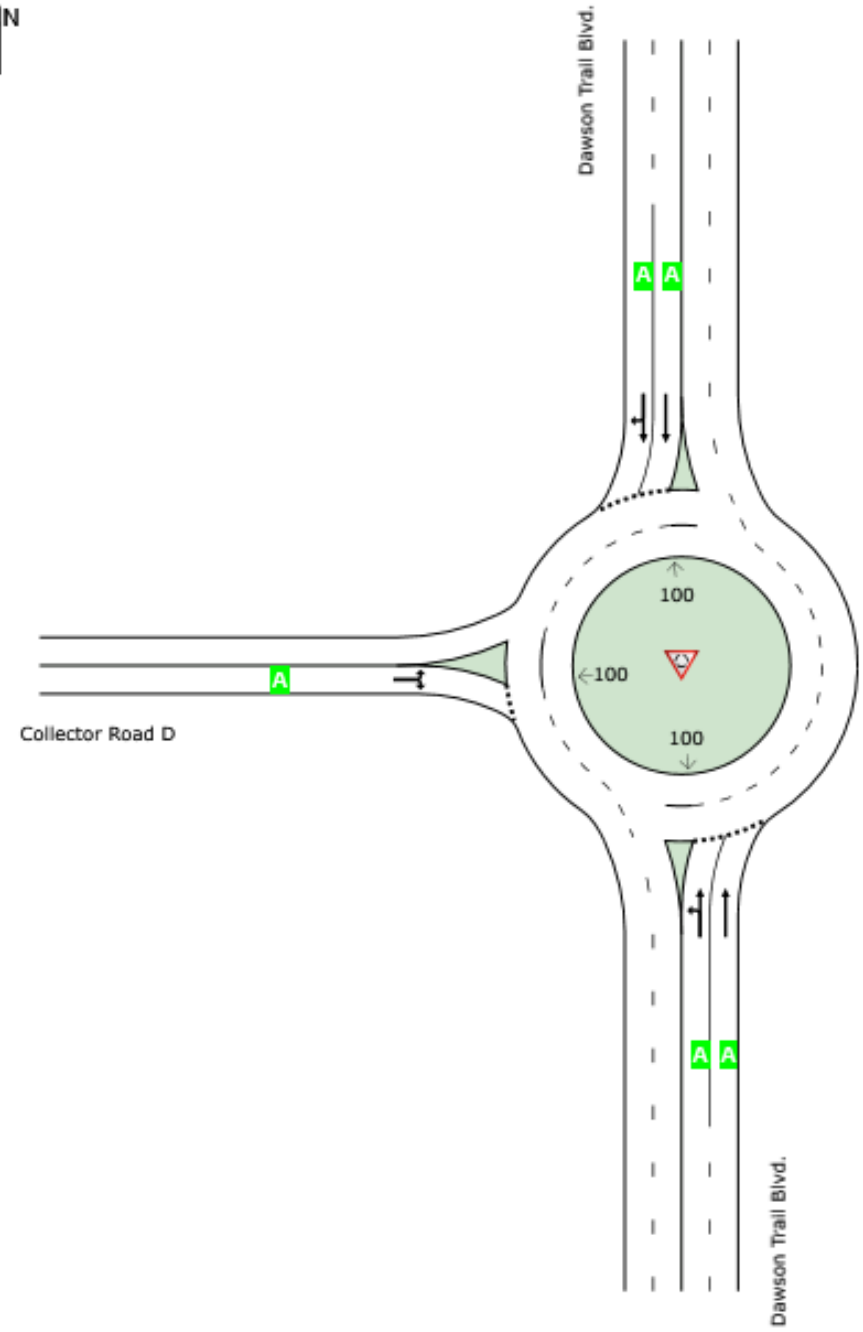
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 107 [Int#107_2030 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches			Intersection
	South	North	West	
LOS	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 10:01:01 AM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int#107.sip9

DELAY (CONTROL)

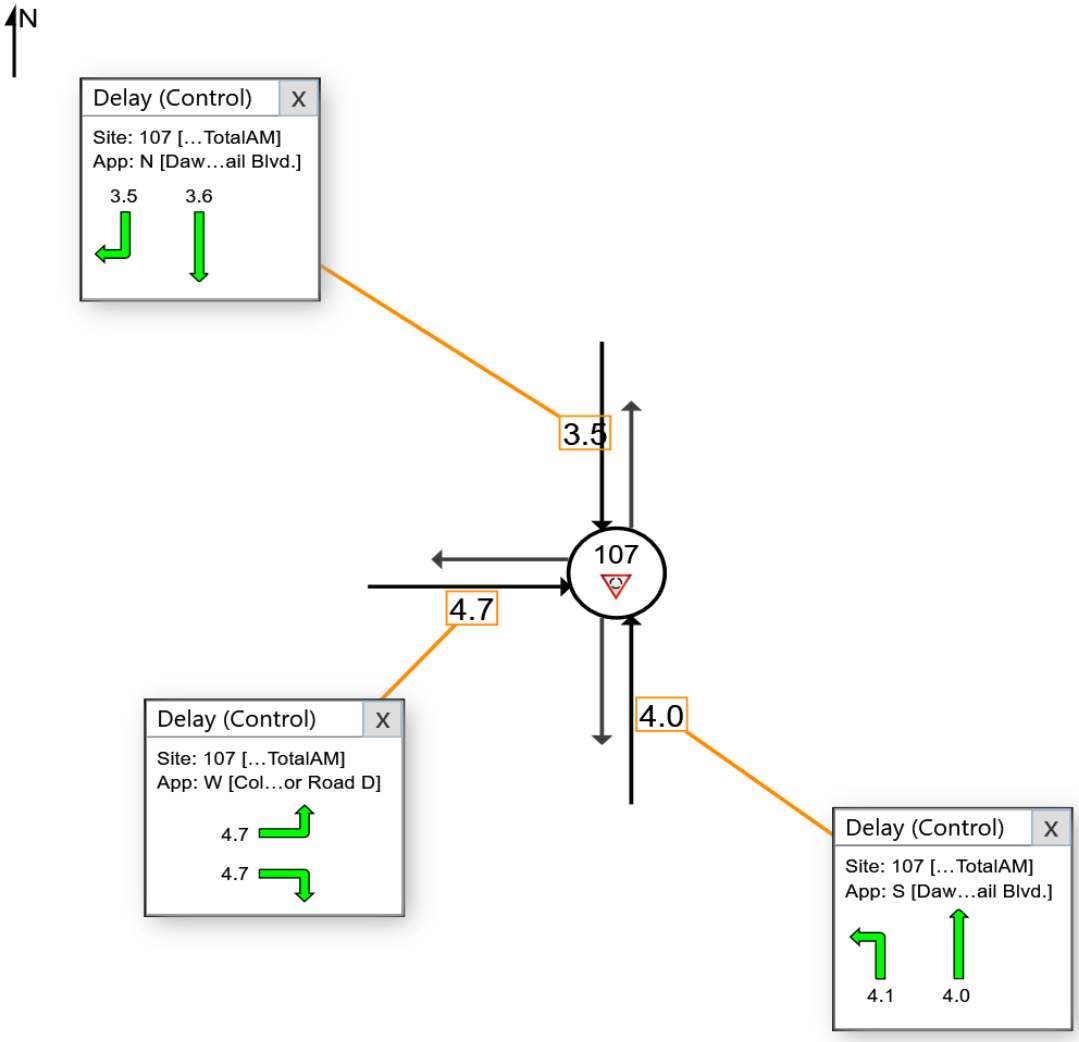
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 107 [Int#107_2030 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

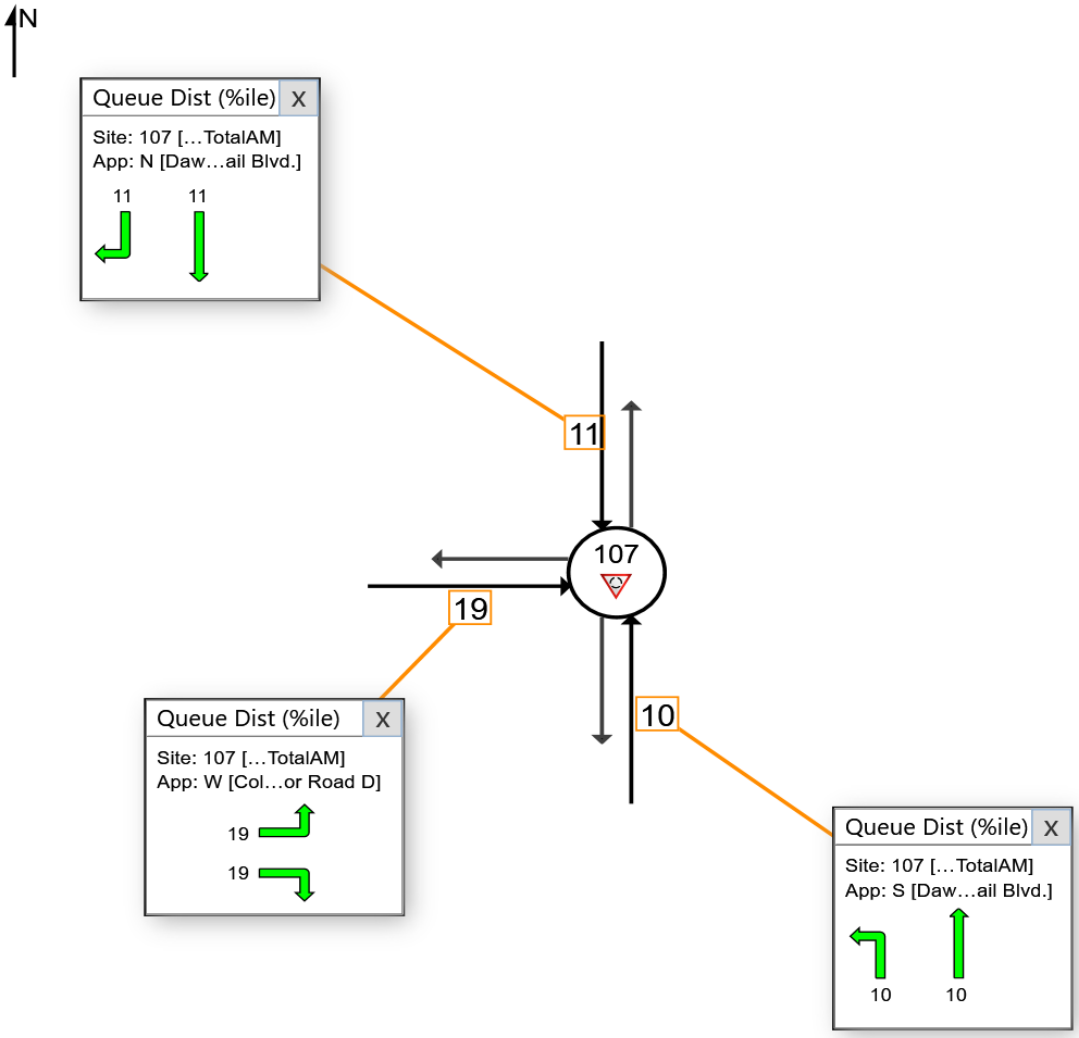
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 107 [Int#107_2030 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

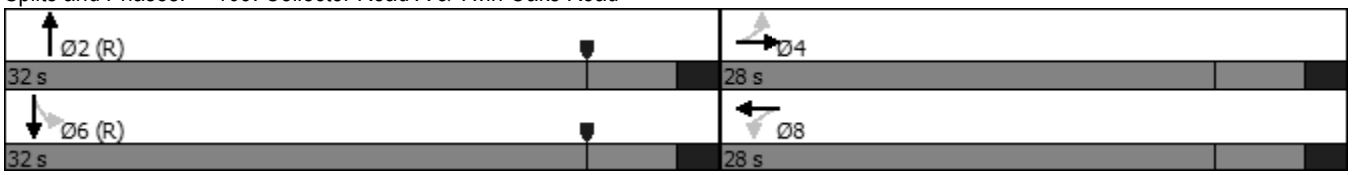
Close All Popups



Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	11	5	18	5	463	27	168
Future Volume (vph)	11	5	18	5	463	27	168
Turn Type	Perm	NA	Perm	NA	NA	Perm	NA
Protected Phases		4		8	2		6
Permitted Phases	4		8			6	
Detector Phase	4	4	8	8	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	10.0	10.0	10.0
Minimum Split (s)	28.0	28.0	28.0	28.0	28.0	28.0	28.0
Total Split (s)	28.0	28.0	28.0	28.0	32.0	32.0	32.0
Total Split (%)	46.7%	46.7%	46.7%	46.7%	53.3%	53.3%	53.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)		6.5	6.5	6.5	48.5	48.5	48.5
Actuated g/C Ratio		0.11	0.11	0.11	0.81	0.81	0.81
v/c Ratio		0.11	0.11	0.13	0.20	0.04	0.07

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.20
Intersection Signal Delay: 4.1
Intersection Capacity Utilization 40.0%
Analysis Period (min) 15

Splits and Phases: 109: Collector Road A & Twin Oaks Road



Lane Group	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	18	20	26	567	29	207
v/c Ratio	0.11	0.11	0.13	0.20	0.04	0.07
Control Delay	24.4	24.8	14.6	2.8	3.4	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.4	24.8	14.6	2.8	3.4	2.5
Queue Length 50th (ft)	6	7	2	28	3	8
Queue Length 95th (ft)	21	23	20	50	10	18
Internal Link Dist (ft)	271		180	1511		693
Turn Bay Length (ft)		150			250	
Base Capacity (vph)	531	635	613	2819	661	2818
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.03	0.04	0.20	0.04	0.07

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	5	1	18	5	19	0	463	59	27	168	22
Future Volume (veh/h)	11	5	1	18	5	19	0	463	59	27	168	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	0	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	12	5	1	20	5	21	0	503	64	29	183	24
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	0	2	2	2	2	2
Cap, veh/h	139	28	4	204	17	72	0	2365	300	709	2358	305
Arrive On Green	0.05	0.05	0.05	0.05	0.05	0.05	0.00	0.75	0.75	0.75	0.75	0.75
Sat Flow, veh/h	722	514	73	1410	314	1319	0	3266	402	844	3164	409
Grp Volume(v), veh/h	18	0	0	20	0	26	0	281	286	29	102	105
Grp Sat Flow(s),veh/h/ln	1308	0	0	1410	0	1633	0	1777	1798	844	1777	1797
Q Serve(g_s), s	0.2	0.0	0.0	0.0	0.0	0.9	0.0	2.9	2.9	0.6	0.9	1.0
Cycle Q Clear(g_c), s	1.1	0.0	0.0	0.6	0.0	0.9	0.0	2.9	2.9	3.5	0.9	1.0
Prop In Lane	0.67		0.06	1.00		0.81	0.00		0.22	1.00		0.23
Lane Grp Cap(c), veh/h	172	0	0	204	0	89	0	1324	1340	709	1324	1339
V/C Ratio(X)	0.10	0.00	0.00	0.10	0.00	0.29	0.00	0.21	0.21	0.04	0.08	0.08
Avail Cap(c_a), veh/h	641	0	0	644	0	599	0	1324	1340	709	1324	1339
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.2	0.0	0.0	27.1	0.0	27.2	0.0	2.3	2.3	2.8	2.1	2.1
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.2	0.0	1.8	0.0	0.4	0.4	0.1	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.0	0.3	0.0	0.4	0.0	0.6	0.6	0.1	0.2	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.5	0.0	0.0	27.3	0.0	29.0	0.0	2.7	2.7	3.0	2.2	2.2
LnGrp LOS	C	A	A	C	A	C	A	A	A	A	A	A
Approach Vol, veh/h		18			46			567			236	
Approach Delay, s/veh		27.5			28.3			2.7			2.3	
Approach LOS		C			C			A			A	

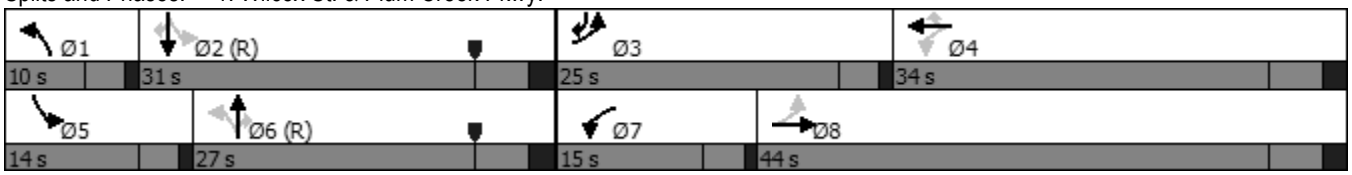
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		50.7		9.3		50.7		9.3				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		26.0		22.0		26.0		22.0				
Max Q Clear Time (g_c+I1), s		4.9		3.1		5.5		2.9				
Green Ext Time (p_c), s		3.5		0.0		1.2		0.1				

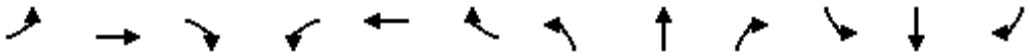
Intersection Summary												
HCM 6th Ctrl Delay			4.4									
HCM 6th LOS			A									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	347	1215	235	68	805	175	170	184	118	180	184	341
Future Volume (vph)	347	1215	235	68	805	175	170	184	118	180	184	341
Turn Type	pm+pt	NA	Free	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+ov
Protected Phases	3	8		7	4		1	6		5	2	3
Permitted Phases	8		Free	4		4	6		6	2		2
Detector Phase	3	8		7	4	4	1	6	6	5	2	3
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	5.0	10.0	10.0	5.0	4.0	5.0
Minimum Split (s)	9.5	31.0		14.5	31.0	31.0	9.5	16.0	16.0	9.5	10.0	9.5
Total Split (s)	25.0	44.0		15.0	34.0	34.0	10.0	27.0	27.0	14.0	31.0	25.0
Total Split (%)	25.0%	44.0%		15.0%	34.0%	34.0%	10.0%	27.0%	27.0%	14.0%	31.0%	25.0%
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	3.0
All-Red Time (s)	1.0	2.0		1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	None
Act Effct Green (s)	52.8	39.6	100.0	40.1	28.1	28.1	31.7	23.9	23.9	38.6	27.4	52.1
Actuated g/C Ratio	0.53	0.40	1.00	0.40	0.28	0.28	0.32	0.24	0.24	0.39	0.27	0.52
v/c Ratio	0.92	0.94	0.16	0.29	0.87	0.32	0.23	0.44	0.25	0.46	0.39	0.43

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 69 (69%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 37.0
Intersection Capacity Utilization 93.6%
Analysis Period (min) 15

Splits and Phases: 1: Wilcox St. & Plum Creek Pkwy.





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	377	1321	255	73	866	188	179	194	124	196	200	371
v/c Ratio	0.92	0.94	0.16	0.29	0.87	0.32	0.23	0.44	0.25	0.46	0.39	0.43
Control Delay	54.0	43.8	0.2	19.5	54.4	16.2	21.6	37.7	3.6	25.8	33.5	13.3
Queue Delay	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.8	0.0	0.0
Total Delay	54.0	45.8	0.2	19.5	54.4	16.2	21.6	37.7	3.7	26.6	33.5	13.3
Queue Length 50th (ft)	175	423	0	31	308	22	38	110	0	87	107	107
Queue Length 95th (ft)	#332	#576	0	m61	#395	102	62	180	25	143	175	178
Internal Link Dist (ft)		553			473			812			658	
Turn Bay Length (ft)	280		250	185			190		195	130		130
Base Capacity (vph)	443	1402	1564	272	1015	588	789	441	494	437	514	904
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	31	0	0	0	0	0	0	28	80	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.96	0.16	0.27	0.85	0.32	0.23	0.44	0.27	0.55	0.39	0.41

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Twin Mesa Metropolitan District New Service Plan
SV2023-003
Planning Commission Supplemental Memo Page 691 of 1222

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	347	1215	235	68	805	175	170	184	118	180	184	341
Future Volume (veh/h)	347	1215	235	68	805	175	170	184	118	180	184	341
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1856	1856	1856	1885	1885	1885
Adj Flow Rate, veh/h	377	1321	0	73	866	188	179	194	124	196	200	371
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.95	0.95	0.95	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	1	1	1
Cap, veh/h	407	1350		232	1050	468	650	435	368	404	518	712
Arrive On Green	0.17	0.38	0.00	0.03	0.10	0.10	0.06	0.23	0.23	0.10	0.27	0.27
Sat Flow, veh/h	1781	3554	1585	1781	3554	1582	3428	1856	1570	1795	1885	1596
Grp Volume(v), veh/h	377	1321	0	73	866	188	179	194	124	196	200	371
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1582	1714	1856	1570	1795	1885	1596
Q Serve(g_s), s	15.0	36.7	0.0	2.7	23.9	11.2	3.9	8.9	6.6	7.9	8.6	16.8
Cycle Q Clear(g_c), s	15.0	36.7	0.0	2.7	23.9	11.2	3.9	8.9	6.6	7.9	8.6	16.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	407	1350		232	1050	468	650	435	368	404	518	712
V/C Ratio(X)	0.93	0.98		0.31	0.82	0.40	0.28	0.45	0.34	0.48	0.39	0.52
Avail Cap(c_a), veh/h	476	1350		273	1050	468	655	435	368	407	518	712
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.86	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.4	30.6	0.0	25.8	42.6	36.8	26.5	32.7	31.8	24.2	29.4	20.0
Incr Delay (d2), s/veh	20.8	19.4	0.0	0.2	4.7	0.5	0.1	3.3	2.5	0.3	2.2	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	18.5	0.0	1.2	12.0	4.7	1.6	4.4	0.3	3.4	4.2	6.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.2	50.0	0.0	26.0	47.3	37.3	26.6	36.0	34.3	24.6	31.6	22.7
LnGrp LOS	D	D		C	D	D	C	D	C	C	C	C
Approach Vol, veh/h		1698	A		1127			497			767	
Approach Delay, s/veh		48.9			44.3			32.2			25.5	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.9	33.5	21.1	35.5	13.9	29.4	12.7	44.0
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	6.0	25.0	21.0	28.0	10.0	21.0	11.0	38.0
Max Q Clear Time (g_c+I1), s	5.9	18.8	17.0	25.9	9.9	10.9	4.7	38.7
Green Ext Time (p_c), s	0.0	2.0	0.2	1.3	0.0	1.5	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	41.2
HCM 6th LOS	D

Notes

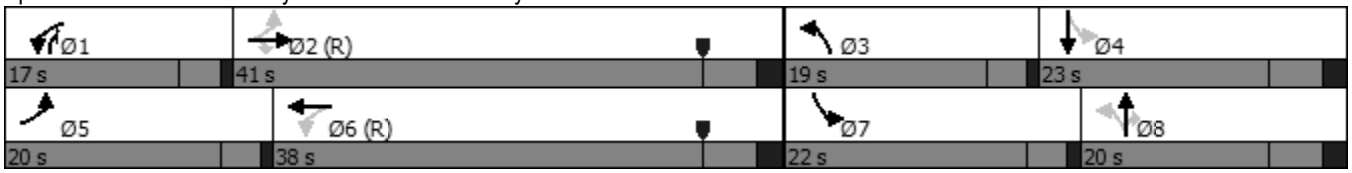
User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	221	1177	180	140	622	215	120	235	240	135	221
Future Volume (vph)	221	1177	180	140	622	215	120	235	240	135	221
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	pm+ov	pm+pt	NA	Free
Protected Phases	5	2		1	6	3	8	1	7	4	
Permitted Phases	2		2	6		8		8	4		Free
Detector Phase	5	2	2	1	6	3	8	1	7	4	
Switch Phase											
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0	3.0	5.0	3.0	3.0	5.0	
Minimum Split (s)	9.5	32.0	32.0	9.5	32.0	9.5	11.0	9.5	9.5	11.0	
Total Split (s)	20.0	41.0	41.0	17.0	38.0	19.0	20.0	17.0	22.0	23.0	
Total Split (%)	20.0%	41.0%	41.0%	17.0%	38.0%	19.0%	20.0%	17.0%	22.0%	23.0%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.0	3.0	3.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	1.0	2.0	1.0	1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	4.0	4.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None	None	
Act Effct Green (s)	58.5	45.6	45.6	53.3	43.0	26.4	11.2	21.5	29.8	12.9	100.0
Actuated g/C Ratio	0.58	0.46	0.46	0.53	0.43	0.26	0.11	0.22	0.30	0.13	1.00
v/c Ratio	0.61	0.78	0.25	0.64	0.56	0.58	0.62	0.60	0.62	0.60	0.15

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 60 (60%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 21.7
Intersection Capacity Utilization 77.2%
Analysis Period (min) 15

Splits and Phases: 2: Perry St. & Plum Creek Pkwy.



Twin Mesa Metropolitan District New Service Plan
SV2023-003
Planning Commission Supplemental Memo Page 693 of 1222



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	240	1279	196	147	850	234	130	255	261	147	240
v/c Ratio	0.61	0.78	0.25	0.64	0.56	0.58	0.62	0.60	0.62	0.60	0.15
Control Delay	8.9	20.4	4.9	35.4	16.9	32.0	54.6	22.5	32.9	50.7	0.2
Queue Delay	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.9	21.5	4.9	35.4	16.9	32.0	54.6	22.5	32.9	50.7	0.2
Queue Length 50th (ft)	18	415	23	45	111	114	80	76	129	90	0
Queue Length 95th (ft)	m31	m#538	m61	m111	238	168	138	138	186	147	0
Internal Link Dist (ft)		473			1330		455			497	
Turn Bay Length (ft)	170		70	100		185		65	120		120
Base Capacity (vph)	466	1630	778	312	1508	430	263	499	464	323	1615
Starvation Cap Reductn	0	151	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.86	0.25	0.47	0.56	0.54	0.49	0.51	0.56	0.46	0.15

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	221	1177	180	140	622	185	215	120	235	240	135	221
Future Volume (veh/h)	221	1177	180	140	622	185	215	120	235	240	135	221
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	240	1279	196	147	655	195	234	130	255	261	147	0
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	0	0	0
Cap, veh/h	474	1619	721	311	1144	340	406	264	329	406	289	
Arrive On Green	0.20	0.90	0.90	0.13	0.84	0.84	0.13	0.14	0.14	0.14	0.15	0.00
Sat Flow, veh/h	1795	3582	1596	1795	2720	809	1795	1885	1594	1810	1900	1610
Grp Volume(v), veh/h	240	1279	196	147	431	419	234	130	255	261	147	0
Grp Sat Flow(s),veh/h/ln	1795	1791	1596	1795	1791	1738	1795	1885	1594	1810	1900	1610
Q Serve(g_s), s	7.7	12.0	1.6	4.7	7.4	7.4	10.9	6.4	14.0	12.1	7.1	0.0
Cycle Q Clear(g_c), s	7.7	12.0	1.6	4.7	7.4	7.4	10.9	6.4	14.0	12.1	7.1	0.0
Prop In Lane	1.00		1.00	1.00		0.47	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	474	1619	721	311	753	731	406	264	329	406	289	
V/C Ratio(X)	0.51	0.79	0.27	0.47	0.57	0.57	0.58	0.49	0.78	0.64	0.51	
Avail Cap(c_a), veh/h	586	1619	721	425	753	731	443	264	329	475	323	
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.44	0.44	0.44	0.90	0.90	0.90	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.0	3.2	2.7	13.9	5.2	5.2	30.9	39.7	37.5	30.4	39.0	0.0
Incr Delay (d2), s/veh	0.1	1.8	0.4	0.4	2.8	2.9	0.8	1.1	10.6	1.4	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	1.9	0.5	1.7	2.2	2.2	4.7	3.0	6.7	5.3	3.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.1	5.0	3.1	14.3	8.0	8.1	31.7	40.8	48.2	31.8	40.0	0.0
LnGrp LOS	B	A	A	B	A	A	C	D	D	C	D	
Approach Vol, veh/h		1715			997			619			408	A
Approach Delay, s/veh		5.8			9.0			40.4			34.7	
Approach LOS		A			A			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	51.2	17.0	21.2	13.8	48.1	18.2	20.0
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	13.0	35.0	15.0	17.0	16.0	32.0	18.0	14.0
Max Q Clear Time (g_c+I1), s	6.7	14.0	12.9	9.1	9.7	9.4	14.1	16.0
Green Ext Time (p_c), s	0.1	10.4	0.0	0.3	0.1	5.6	0.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	15.5
HCM 6th LOS	B

Notes

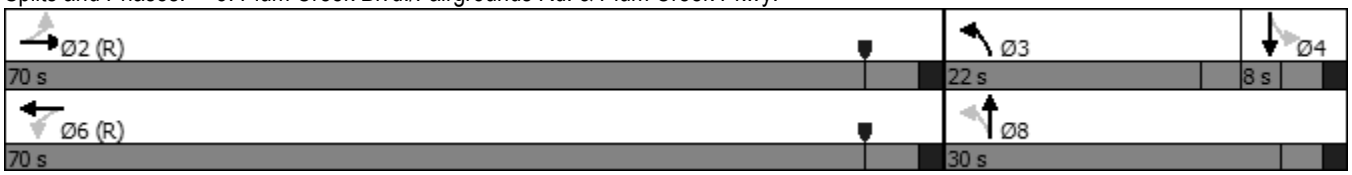
User approved pedestrian interval to be less than phase max green.

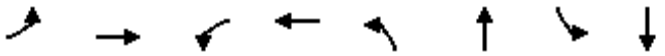
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	30	1237	48	677	260	0	1	1
Future Volume (vph)	30	1237	48	677	260	0	1	1
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases		2		6	3	8		4
Permitted Phases	2		6		8		4	
Detector Phase	2	2	6	6	3	8	4	4
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	5.0	2.0	2.0
Minimum Split (s)	33.0	33.0	28.0	28.0	14.5	10.0	7.0	7.0
Total Split (s)	70.0	70.0	70.0	70.0	22.0	30.0	8.0	8.0
Total Split (%)	70.0%	70.0%	70.0%	70.0%	22.0%	30.0%	8.0%	8.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	3.0	5.0	5.0	5.0
Lead/Lag					Lead		Lag	Lag
Lead-Lag Optimize?					Yes		Yes	Yes
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	Max	Max	Max
Act Effct Green (s)	64.0	64.0	64.0	64.0	27.0	25.0	5.5	5.5
Actuated g/C Ratio	0.64	0.64	0.64	0.64	0.27	0.25	0.06	0.06
v/c Ratio	0.08	0.79	0.67	0.33	0.72	0.12	0.03	0.10

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 85 (85%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 14.1
Intersection Capacity Utilization 76.8%
Analysis Period (min) 15

Splits and Phases: 3: Plum Creek Blvd./Fairgrounds Rd. & Plum Creek Pkwy.





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	33	1763	52	738	283	53	2	10
v/c Ratio	0.08	0.79	0.67	0.33	0.72	0.12	0.03	0.10
Control Delay	4.7	10.7	56.8	8.7	43.5	6.4	48.0	31.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.7	10.7	56.8	8.7	43.5	6.4	48.0	31.8
Queue Length 50th (ft)	4	148	19	102	157	0	1	1
Queue Length 95th (ft)	m6	283	#96	133	243	24	6	11
Internal Link Dist (ft)		1330		637		613		434
Turn Bay Length (ft)	70		55				110	
Base Capacity (vph)	420	2221	78	2265	412	448	75	98
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.79	0.67	0.33	0.69	0.12	0.03	0.10

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	1237	385	48	677	2	260	0	49	1	1	5
Future Volume (veh/h)	30	1237	385	48	677	2	260	0	49	1	1	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1870	1870	1870	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	33	1345	418	52	736	2	283	0	53	2	2	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.60	0.60	0.60
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	0	0	0
Cap, veh/h	470	1736	521	246	2327	6	437	0	399	150	19	75
Arrive On Green	1.00	1.00	1.00	0.64	0.64	0.64	0.16	0.00	0.25	0.06	0.06	0.06
Sat Flow, veh/h	726	2713	814	271	3636	10	1795	0	1598	1373	332	1329
Grp Volume(v), veh/h	33	872	891	52	360	378	283	0	53	2	0	10
Grp Sat Flow(s),veh/h/ln	726	1791	1736	271	1777	1869	1795	0	1598	1373	0	1661
Q Serve(g_s), s	0.7	0.0	0.0	8.5	9.1	9.1	14.2	0.0	2.6	0.1	0.0	0.6
Cycle Q Clear(g_c), s	9.8	0.0	0.0	8.5	9.1	9.1	14.2	0.0	2.6	0.1	0.0	0.6
Prop In Lane	1.00		0.47	1.00		0.01	1.00		1.00	1.00		0.80
Lane Grp Cap(c), veh/h	470	1146	1111	246	1137	1196	437	0	399	150	0	94
V/C Ratio(X)	0.07	0.76	0.80	0.21	0.32	0.32	0.65	0.00	0.13	0.01	0.00	0.11
Avail Cap(c_a), veh/h	470	1146	1111	246	1137	1196	485	0	399	150	0	94
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.60	0.60	0.60	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	0.7	0.0	0.0	8.0	8.1	8.1	34.3	0.0	29.1	44.6	0.0	44.8
Incr Delay (d2), s/veh	0.2	2.9	3.8	2.0	0.7	0.7	1.7	0.0	0.7	0.2	0.0	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.9	1.2	0.6	3.3	3.5	6.3	0.0	1.1	0.1	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.9	2.9	3.8	10.0	8.9	8.8	36.1	0.0	29.8	44.7	0.0	47.1
LnGrp LOS	A	A	A	A	A	A	D	A	C	D	A	D
Approach Vol, veh/h		1796			790			336			12	
Approach Delay, s/veh		3.3			8.9			35.1			46.7	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		70.0	19.3	10.7		70.0		30.0				
Change Period (Y+Rc), s		6.0	3.0	5.0		6.0		5.0				
Max Green Setting (Gmax), s		64.0	19.0	3.0		64.0		25.0				
Max Q Clear Time (g_c+I1), s		11.8	16.2	2.6		11.1		4.6				
Green Ext Time (p_c), s		23.1	0.1	0.0		7.1		0.1				

Intersection Summary	
HCM 6th Ctrl Delay	8.6
HCM 6th LOS	A

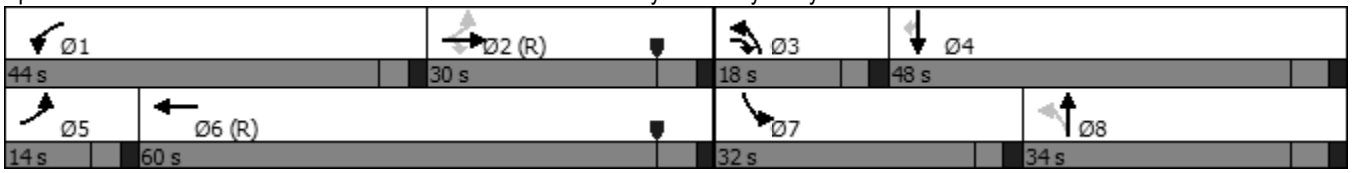
Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	138	246	41	730	402	243	20	300	911	349	354	180
Future Volume (vph)	138	246	41	730	402	243	20	300	911	349	354	180
Turn Type	pm+pt	NA	pm+ov	Prot	NA	Free	pm+pt	NA	Free	Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases	2		2			Free	8		Free			4
Detector Phase	5	2	3	1	6		3	8		7	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0		5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	11.0	33.0	11.0	11.0	33.0		11.0	33.0		11.0	33.0	33.0
Total Split (s)	14.0	30.0	18.0	44.0	60.0		18.0	34.0		32.0	48.0	48.0
Total Split (%)	10.0%	21.4%	12.9%	31.4%	42.9%		12.9%	24.3%		22.9%	34.3%	34.3%
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	5.0	5.0	6.0		5.0	6.0		5.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Max	None	Max	C-Max		None	Max		Max	Max	Max
Act Effct Green (s)	33.9	24.0	36.5	39.0	54.1	140.0	35.5	28.0	140.0	27.0	50.6	50.6
Actuated g/C Ratio	0.24	0.17	0.26	0.28	0.39	1.00	0.25	0.20	1.00	0.19	0.36	0.36
v/c Ratio	0.52	0.44	0.09	0.83	0.61	0.17	0.08	0.46	0.63	0.57	0.31	0.29

Intersection Summary
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 31.8
Intersection Capacity Utilization 65.8%
Analysis Period (min) 15

Splits and Phases: 7: Dawson Trail Blvd. & Collector Road A/Crystal Valley Pkwy.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	150	267	45	793	437	264	22	326	990	379	385	196
v/c Ratio	0.52	0.44	0.09	0.83	0.61	0.17	0.08	0.46	0.63	0.57	0.31	0.29
Control Delay	32.9	54.6	0.3	56.0	38.8	0.2	25.6	51.8	1.9	55.2	33.8	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.9	54.6	0.3	56.0	38.8	0.2	25.6	51.8	1.9	55.2	33.8	5.3
Queue Length 50th (ft)	74	116	0	350	317	0	11	138	0	163	135	0
Queue Length 95th (ft)	117	162	0	430	434	0	29	188	0	217	183	55
Internal Link Dist (ft)		1283			1733			1960			1008	
Turn Bay Length (ft)	200		200	500			500		1000	500		500
Base Capacity (vph)	288	606	593	956	720	1583	366	707	1583	662	1242	680
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.44	0.08	0.83	0.61	0.17	0.06	0.46	0.63	0.57	0.31	0.29

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	138	246	41	730	402	243	20	300	911	349	354	180
Future Volume (veh/h)	138	246	41	730	402	243	20	300	911	349	354	180
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900	1870	1870	1870	1870	1870	1870	1870	1826	1826
Adj Flow Rate, veh/h	150	267	45	793	437	0	22	326	0	379	385	196
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	0	2	2	2	2	2	2	2	5	5
Cap, veh/h	334	609	309	963	721		255	711		666	1292	576
Arrive On Green	0.06	0.17	0.17	0.28	0.39	0.00	0.02	0.20	0.00	0.19	0.37	0.37
Sat Flow, veh/h	1810	3554	1610	3456	1870	1585	1781	3554	1585	3456	3469	1547
Grp Volume(v), veh/h	150	267	45	793	437	0	22	326	0	379	385	196
Grp Sat Flow(s),veh/h/ln	1810	1777	1610	1728	1870	1585	1781	1777	1585	1728	1735	1547
Q Serve(g_s), s	9.0	9.4	3.3	30.1	26.2	0.0	1.4	11.3	0.0	13.9	11.0	12.7
Cycle Q Clear(g_c), s	9.0	9.4	3.3	30.1	26.2	0.0	1.4	11.3	0.0	13.9	11.0	12.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	334	609	309	963	721		255	711		666	1292	576
V/C Ratio(X)	0.45	0.44	0.15	0.82	0.61		0.09	0.46		0.57	0.30	0.34
Avail Cap(c_a), veh/h	334	609	309	963	721		383	711		666	1292	576
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.71	0.71	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.6	52.0	47.0	47.3	34.5	0.0	43.1	49.3	0.0	51.2	31.0	31.6
Incr Delay (d2), s/veh	0.9	2.3	1.0	5.8	2.7	0.0	0.1	2.1	0.0	3.5	0.6	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	4.4	1.4	13.7	12.5	0.0	0.6	5.3	0.0	6.4	4.8	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.6	54.2	48.0	53.1	37.1	0.0	43.2	51.5	0.0	54.7	31.6	33.2
LnGrp LOS	D	D	D	D	D		D	D		D	C	C
Approach Vol, veh/h		462			1230	A		348	A		960	
Approach Delay, s/veh		50.8			47.4			50.9			41.1	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	44.0	30.0	7.9	58.1	14.0	60.0	32.0	34.0
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	39.0	24.0	13.0	42.0	9.0	54.0	27.0	28.0
Max Q Clear Time (g_c+I1), s	32.1	11.4	3.4	14.7	11.0	28.2	15.9	13.3
Green Ext Time (p_c), s	1.9	1.4	0.0	3.4	0.0	2.9	1.0	1.8

Intersection Summary	
HCM 6th Ctrl Delay	46.3
HCM 6th LOS	D

Notes

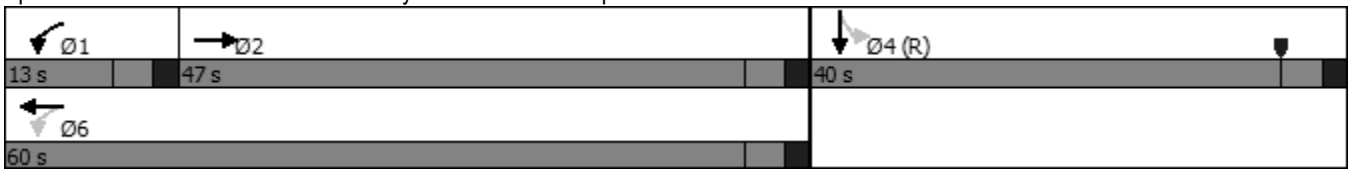
User approved pedestrian interval to be less than phase max green.

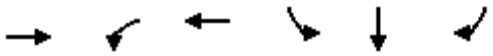
Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1036	135	746	1040	5	549
Future Volume (vph)	1036	135	746	1040	5	549
Turn Type	NA	pm+pt	NA	Perm	NA	Free
Protected Phases	2	1	6		4	
Permitted Phases		6		4		Free
Detector Phase	2	1	6	4	4	
Switch Phase						
Minimum Initial (s)	10.0	5.0	10.0	5.0	5.0	
Minimum Split (s)	30.0	10.0	30.0	10.0	10.0	
Total Split (s)	47.0	13.0	60.0	40.0	40.0	
Total Split (%)	47.0%	13.0%	60.0%	40.0%	40.0%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes				
Recall Mode	Max	None	Max	C-Max	C-Max	
Act Effct Green (s)	43.3	56.0	56.0	36.0	36.0	100.0
Actuated g/C Ratio	0.43	0.56	0.56	0.36	0.36	1.00
v/c Ratio	0.62	0.57	0.39	0.63	0.62	0.36

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 4:SBTL, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.63
Intersection Signal Delay: 20.5
Intersection Capacity Utilization 91.1%
Analysis Period (min) 15

Splits and Phases: 8: Plum Creek Pkwy & I-25 SB Off-Ramp





Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1339	141	777	726	362	572
v/c Ratio	0.62	0.57	0.39	0.63	0.62	0.36
Control Delay	18.6	32.1	16.4	29.4	32.1	0.6
Queue Delay	0.0	2.5	5.7	0.1	0.3	0.0
Total Delay	18.6	34.6	22.1	29.5	32.4	0.6
Queue Length 50th (ft)	134	68	151	207	206	0
Queue Length 95th (ft)	166	m114	218	273	316	0
Internal Link Dist (ft)	437		181		388	
Turn Bay Length (ft)						160
Base Capacity (vph)	2176	251	1981	1159	581	1583
Starvation Cap Reductn	0	43	1131	0	0	0
Spillback Cap Reductn	55	0	0	50	25	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.68	0.91	0.65	0.65	0.36

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1036	250	135	746	0	0	0	0	1040	5	549
Future Volume (veh/h)	0	1036	250	135	746	0	0	0	0	1040	5	549
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	1079	260	141	777	0				1087	0	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1850	446	299	1990	0				1924	0	
Arrive On Green	0.00	0.45	0.44	0.14	1.00	0.00				0.36	0.00	0.00
Sat Flow, veh/h	0	4276	989	1781	3647	0				5344	0	1585
Grp Volume(v), veh/h	0	894	445	141	777	0				1087	0	0
Grp Sat Flow(s),veh/h/ln	0	1702	1692	1781	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	19.6	19.7	4.0	0.0	0.0				16.3	0.0	0.0
Cycle Q Clear(g_c), s	0.0	19.6	19.7	4.0	0.0	0.0				16.3	0.0	0.0
Prop In Lane	0.00		0.58	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1534	762	299	1990	0				1924	0	
V/C Ratio(X)	0.00	0.58	0.58	0.47	0.39	0.00				0.57	0.00	
Avail Cap(c_a), veh/h	0	1534	762	336	1990	0				1924	0	
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.70	0.70	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	20.5	20.7	13.8	0.0	0.0				25.7	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.6	3.2	0.8	0.4	0.0				1.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	7.8	8.2	1.5	0.1	0.0				7.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	22.1	24.0	14.7	0.4	0.0				26.9	0.0	0.0
LnGrp LOS	A	C	C	B	A	A				C	A	
Approach Vol, veh/h		1339			918						1087	A
Approach Delay, s/veh		22.7			2.6						26.9	
Approach LOS		C			A						C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.9	49.1		40.0		60.0
Change Period (Y+Rc), s	5.0	5.0		5.0		5.0
Max Green Setting (Gmax), s	8.0	42.0		35.0		55.0
Max Q Clear Time (g_c+I1), s	6.0	21.7		18.3		2.0
Green Ext Time (p_c), s	0.1	9.7		4.3		6.6

Intersection Summary	
HCM 6th Ctrl Delay	18.6
HCM 6th LOS	B

Notes

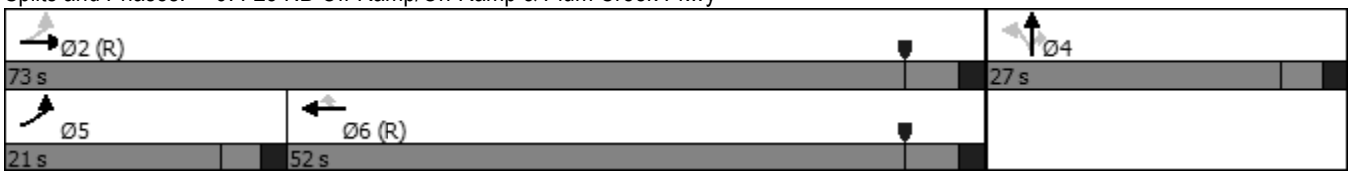
User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	403	1673	741	850	181	5	185
Future Volume (vph)	403	1673	741	850	181	5	185
Turn Type	pm+pt	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6			4	
Permitted Phases	2			6	4		4
Detector Phase	5	2	6	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0	5.0
Minimum Split (s)	10.0	31.0	24.0	24.0	40.0	40.0	40.0
Total Split (s)	21.0	73.0	52.0	52.0	27.0	27.0	27.0
Total Split (%)	21.0%	73.0%	52.0%	52.0%	27.0%	27.0%	27.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-2.0	-2.0	-2.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max
Act Effct Green (s)	69.0	69.0	48.0	48.0	23.0	23.0	23.0
Actuated g/C Ratio	0.69	0.69	0.48	0.48	0.23	0.23	0.23
v/c Ratio	1.00	0.49	0.70	0.54	0.34	0.33	0.29

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 83 (83%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 20.6
Intersection Capacity Utilization 91.1%
Analysis Period (min) 15

Splits and Phases: 9: I-25 NB Off-Ramp/On-Ramp & Plum Creek Pkwy





Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	411	1707	1111	512	131	127	121
v/c Ratio	1.00	0.49	0.70	0.54	0.34	0.33	0.29
Control Delay	67.2	5.7	21.2	3.7	35.1	24.8	13.4
Queue Delay	29.4	0.4	0.0	0.0	0.5	0.4	0.0
Total Delay	96.6	6.1	21.2	3.7	35.6	25.2	13.4
Queue Length 50th (ft)	160	84	268	0	73	50	17
Queue Length 95th (ft)	#378	131	348	59	131	107	68
Internal Link Dist (ft)		181	431			480	
Turn Bay Length (ft)					350		150
Base Capacity (vph)	413	3508	1598	957	386	381	412
Starvation Cap Reductn	35	1100	0	0	0	0	0
Spillback Cap Reductn	0	0	4	0	68	62	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.09	0.71	0.70	0.54	0.41	0.40	0.29

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	403	1673	0	0	741	850	181	5	185	0	0	0
Future Volume (veh/h)	403	1673	0	0	741	850	181	5	185	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	411	1707	0	0	704	902	246	0	127			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	424	3523	0	0	898	1522	819	0	365			
Arrive On Green	0.34	1.00	0.00	0.00	0.48	0.48	0.23	0.00	0.23			
Sat Flow, veh/h	1781	5274	0	0	1870	3170	3563	0	1585			
Grp Volume(v), veh/h	411	1707	0	0	704	902	246	0	127			
Grp Sat Flow(s),veh/h/ln	1781	1702	0	0	1870	1585	1781	0	1585			
Q Serve(g_s), s	15.6	0.0	0.0	0.0	31.4	20.7	5.7	0.0	6.7			
Cycle Q Clear(g_c), s	15.6	0.0	0.0	0.0	31.4	20.7	5.7	0.0	6.7			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	424	3523	0	0	898	1522	819	0	365			
V/C Ratio(X)	0.97	0.48	0.00	0.00	0.78	0.59	0.30	0.00	0.35			
Avail Cap(c_a), veh/h	424	3523	0	0	898	1522	819	0	365			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.75	0.75	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	19.3	0.0	0.0	0.0	21.7	18.9	31.8	0.0	32.2			
Incr Delay (d2), s/veh	30.0	0.4	0.0	0.0	6.8	1.7	0.9	0.0	2.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	7.1	0.1	0.0	0.0	14.7	7.6	2.5	0.0	6.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.3	0.4	0.0	0.0	28.5	20.6	32.8	0.0	34.8			
LnGrp LOS	D	A	A	A	C	C	C	A	C			
Approach Vol, veh/h		2118			1606			373				
Approach Delay, s/veh		9.9			24.1			33.5				
Approach LOS		A			C			C				

Timer - Assigned Phs		2		4	5	6			
Phs Duration (G+Y+Rc), s		73.0		27.0	21.0	52.0			
Change Period (Y+Rc), s		6.0		5.0	5.0	6.0			
Max Green Setting (Gmax), s		67.0		22.0	16.0	46.0			
Max Q Clear Time (g_c+I1), s		2.0		8.7	17.6	33.4			
Green Ext Time (p_c), s		22.6		1.1	0.0	7.2			

Intersection Summary		
HCM 6th Ctrl Delay	17.6	
HCM 6th LOS	B	

Notes

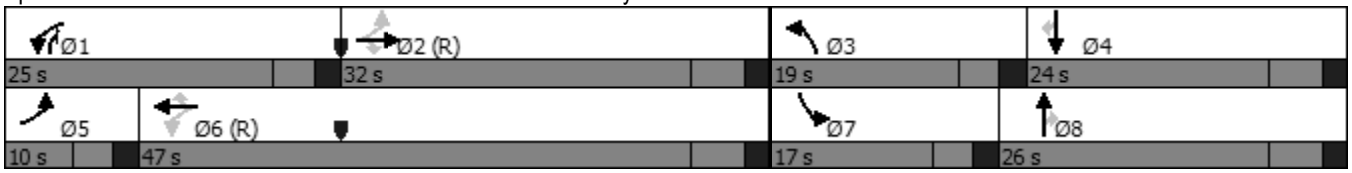
User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	551	228	404	874	93	134	361	255	260	359	38
Future Volume (vph)	32	551	228	404	874	93	134	361	255	260	359	38
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases	2		2	6		6			8			4
Detector Phase	5	2	2	1	6	6	3	8	1	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.0	24.0	10.0	24.0	24.0	10.0	24.0	10.0	10.0	24.0	24.0
Total Split (s)	10.0	32.0	32.0	25.0	47.0	47.0	19.0	26.0	25.0	17.0	24.0	24.0
Total Split (%)	10.0%	32.0%	32.0%	25.0%	47.0%	47.0%	19.0%	26.0%	25.0%	17.0%	24.0%	24.0%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	3.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
Total Lost Time (s)	4.5	5.5	5.5	4.5	5.5	5.5	4.5	5.5	4.5	4.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	Max	Max
Act Effct Green (s)	33.6	27.1	27.1	52.5	45.5	45.5	12.8	20.9	46.3	12.1	20.2	20.2
Actuated g/C Ratio	0.34	0.27	0.27	0.52	0.46	0.46	0.13	0.21	0.46	0.12	0.20	0.20
v/c Ratio	0.14	0.62	0.41	0.89	0.59	0.13	0.65	0.53	0.36	0.68	0.54	0.09

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 33.7
Intersection Capacity Utilization 71.7%
Analysis Period (min) 15

Splits and Phases: 10: Prairie Hawk Drive & Plum Creek Pkwy



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	35	599	248	439	950	101	146	392	277	283	390	41
v/c Ratio	0.14	0.62	0.41	0.89	0.59	0.13	0.65	0.53	0.36	0.68	0.54	0.09
Control Delay	14.9	35.6	6.0	46.3	32.2	7.4	55.0	38.3	12.9	51.2	39.6	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.9	35.6	6.0	46.3	32.2	7.4	55.0	38.3	12.9	51.2	39.6	0.4
Queue Length 50th (ft)	10	177	0	250	308	7	88	118	72	90	120	0
Queue Length 95th (ft)	25	237	58	#357	376	33	153	166	132	133	171	0
Internal Link Dist (ft)		710			922			624			1039	
Turn Bay Length (ft)	230		230	230		230	230		230	230		250
Base Capacity (vph)	255	960	610	500	1610	798	256	741	789	429	716	476
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.62	0.41	0.88	0.59	0.13	0.57	0.53	0.35	0.66	0.54	0.09

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	551	228	404	874	93	134	361	255	260	359	38
Future Volume (veh/h)	32	551	228	404	874	93	134	361	255	260	359	38
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	35	599	248	439	950	0	146	392	277	283	390	41
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	303	1166	520	522	1686		186	649	579	369	657	293
Arrive On Green	0.04	0.33	0.33	0.18	0.47	0.00	0.10	0.18	0.18	0.11	0.19	0.19
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	35	599	248	439	950	0	146	392	277	283	390	41
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1777	1585	1728	1777	1585
Q Serve(g_s), s	1.3	13.6	12.5	15.4	19.2	0.0	8.0	10.1	13.4	8.0	10.0	2.2
Cycle Q Clear(g_c), s	1.3	13.6	12.5	15.4	19.2	0.0	8.0	10.1	13.4	8.0	10.0	2.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	303	1166	520	522	1686		186	649	579	369	657	293
V/C Ratio(X)	0.12	0.51	0.48	0.84	0.56		0.78	0.60	0.48	0.77	0.59	0.14
Avail Cap(c_a), veh/h	337	1166	520	562	1686		258	729	614	432	657	293
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.7	27.2	26.8	18.0	18.8	0.0	43.7	37.5	24.4	43.5	37.3	34.1
Incr Delay (d2), s/veh	0.2	1.6	3.1	10.5	1.4	0.0	10.2	1.2	0.6	6.9	3.9	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	5.7	5.0	7.0	7.5	0.0	4.0	4.4	5.0	3.7	4.6	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.9	28.8	29.9	28.4	20.2	0.0	53.9	38.7	25.0	50.4	41.2	35.1
LnGrp LOS	C	C	C	C	C		D	D	C	D	D	D
Approach Vol, veh/h		882			1389	A		815			714	
Approach Delay, s/veh		28.8			22.8			36.8			44.5	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.8	38.3	14.9	24.0	8.1	52.9	15.2	23.8
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	20.0	26.0	14.0	18.0	5.0	41.0	12.0	20.0
Max Q Clear Time (g_c+I1), s	17.4	15.6	10.0	12.0	3.3	21.2	10.0	15.4
Green Ext Time (p_c), s	0.4	3.3	0.1	1.3	0.0	6.1	0.2	1.5

Intersection Summary	
HCM 6th Ctrl Delay	31.3
HCM 6th LOS	C

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

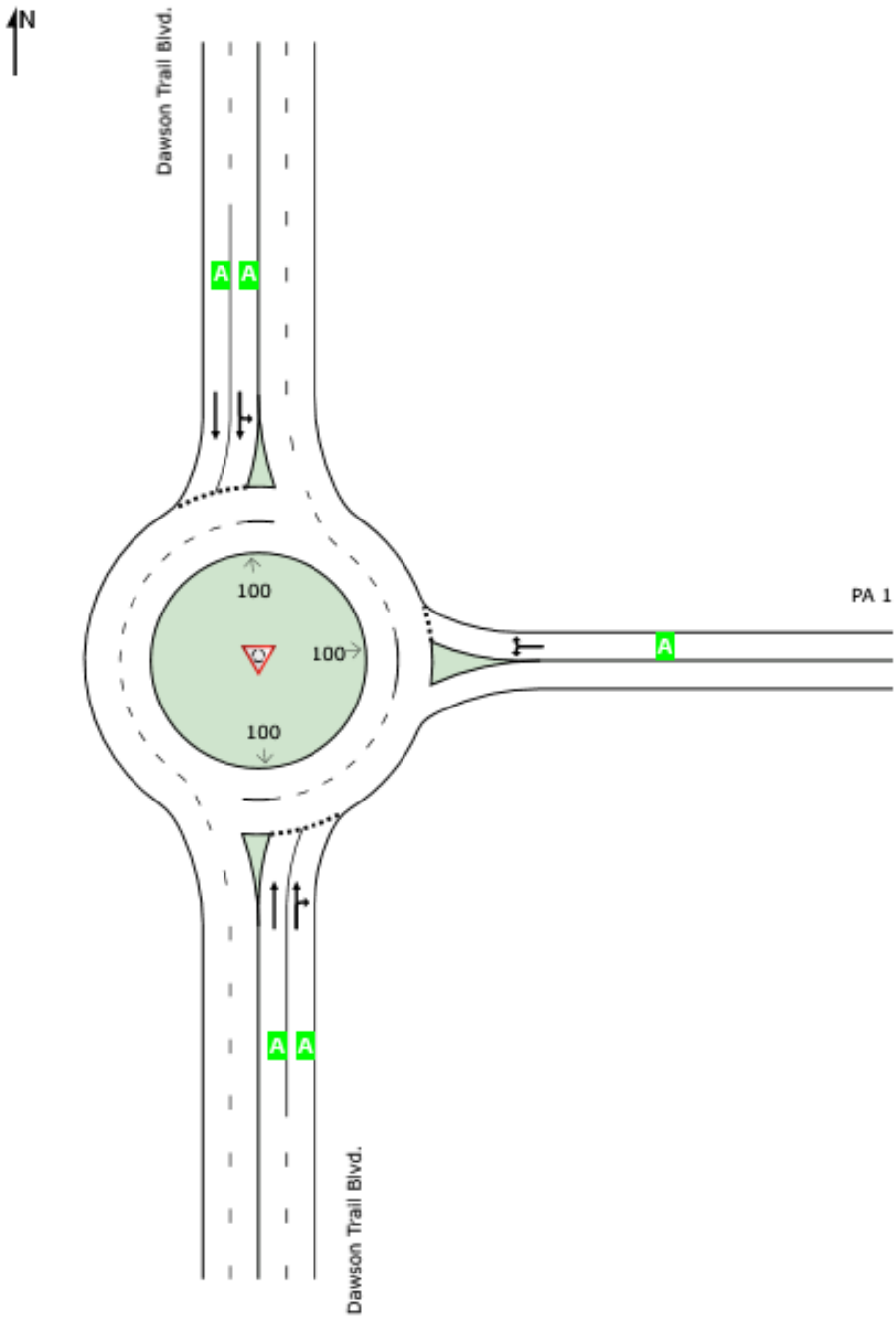
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 101 [Int#101_2030 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches			Intersection
	South	East	North	
LOS	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 8:58:31 AM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int#101.sip9

DELAY (CONTROL)

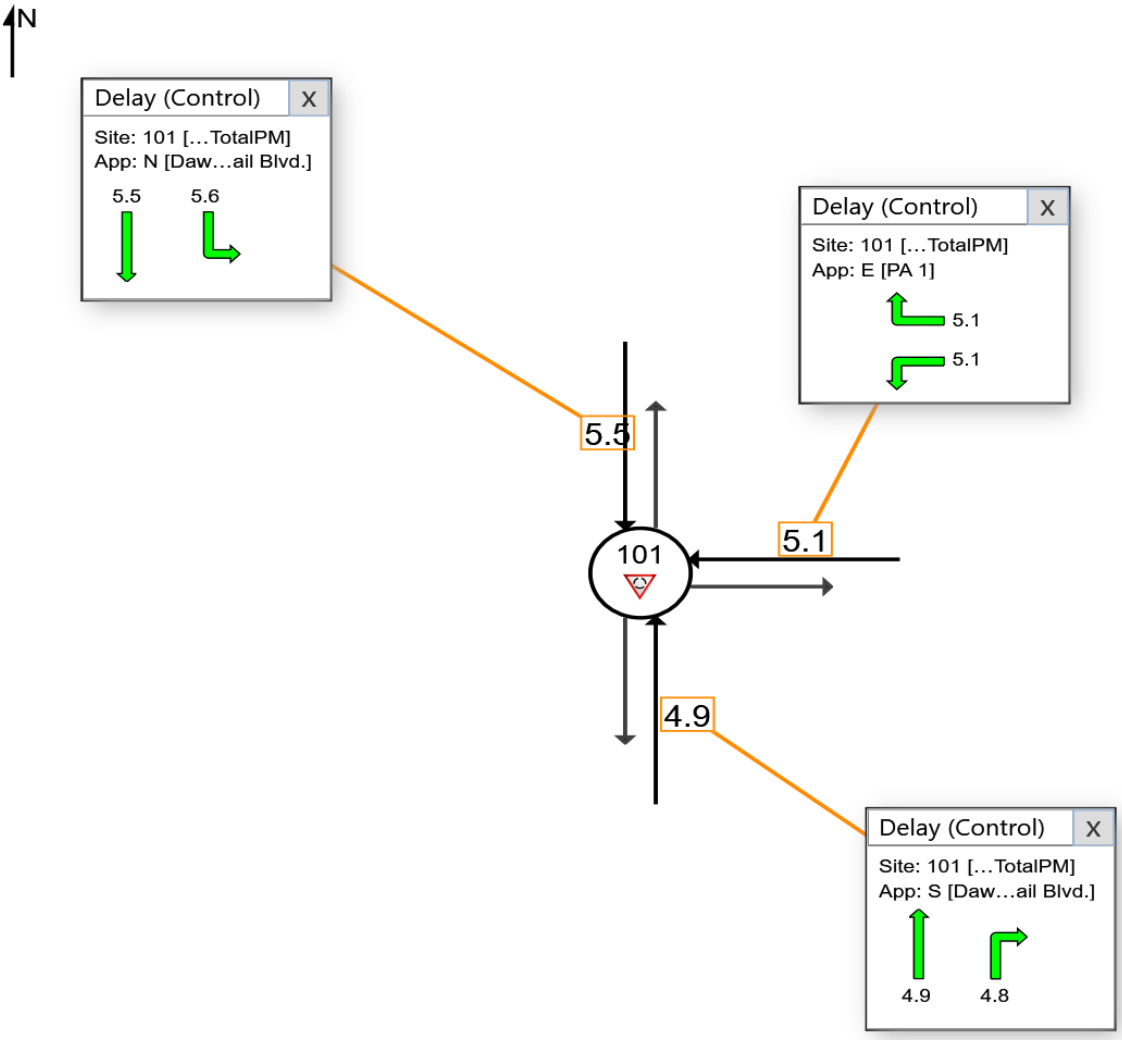
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 101 [Int#101_2030 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

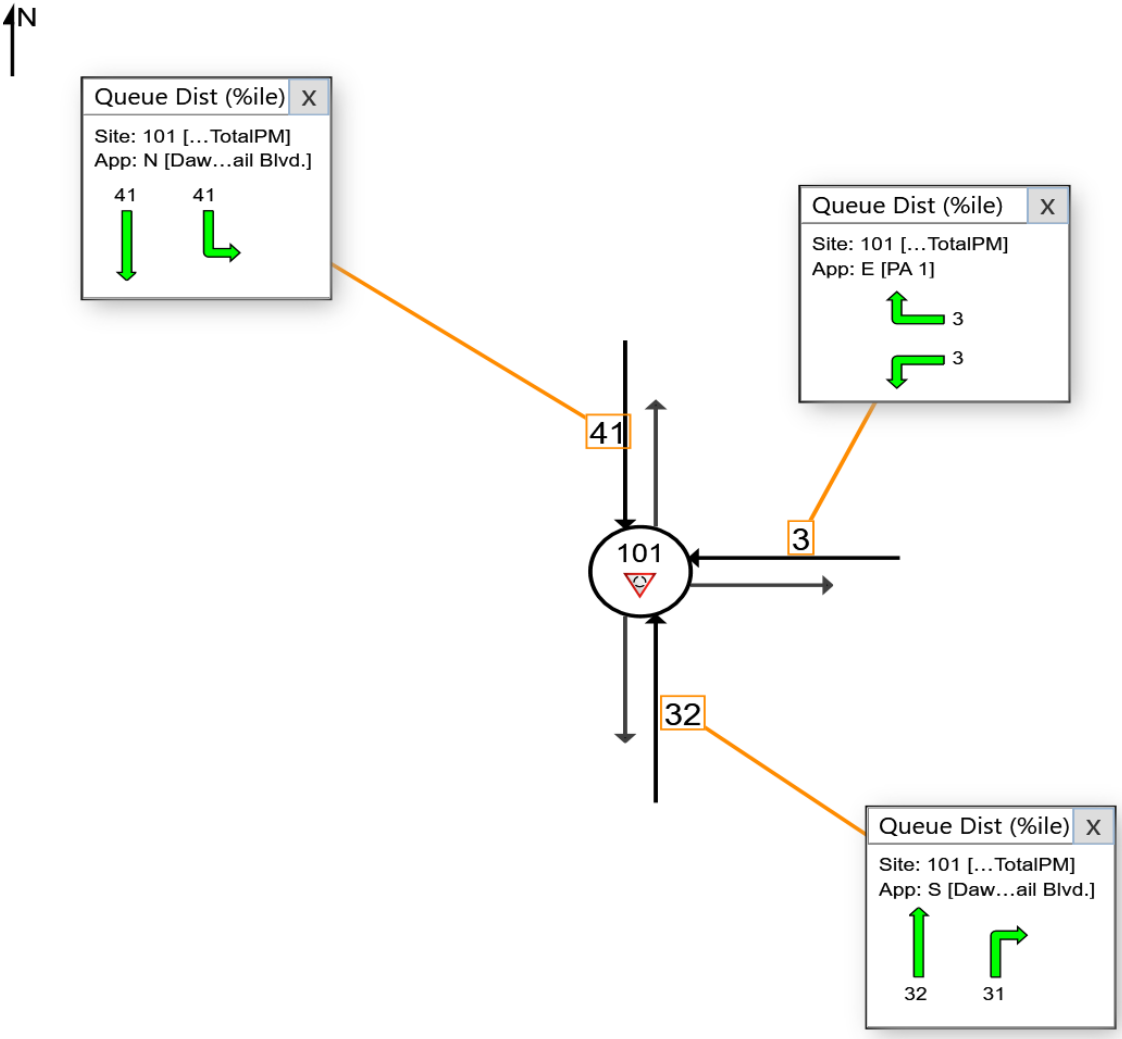
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 101 [Int#101_2030 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



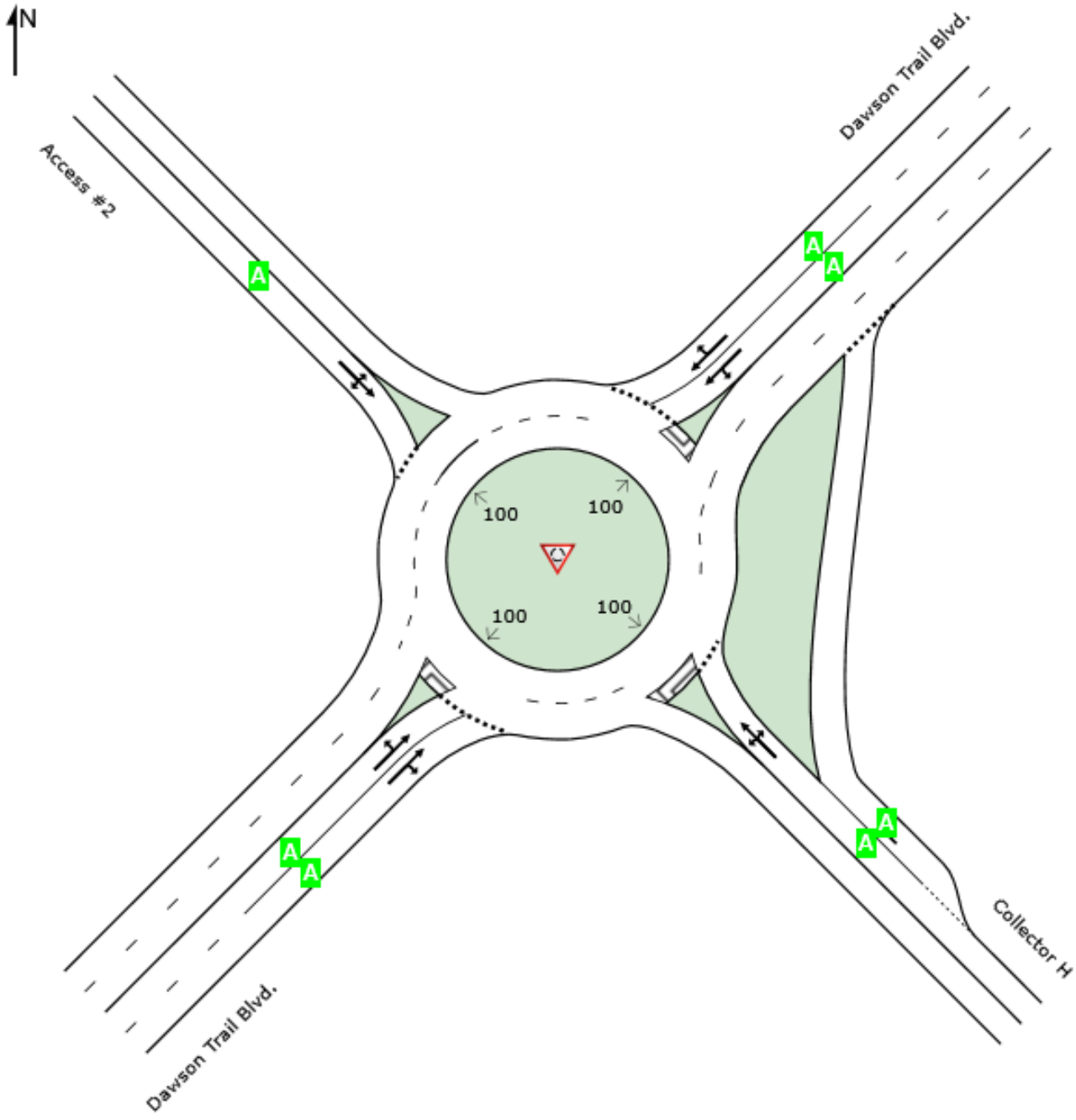
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 102 [Int #102_2030 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
LOS	A	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 9:08:08 AM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #102-mod.sip9

DELAY (CONTROL)

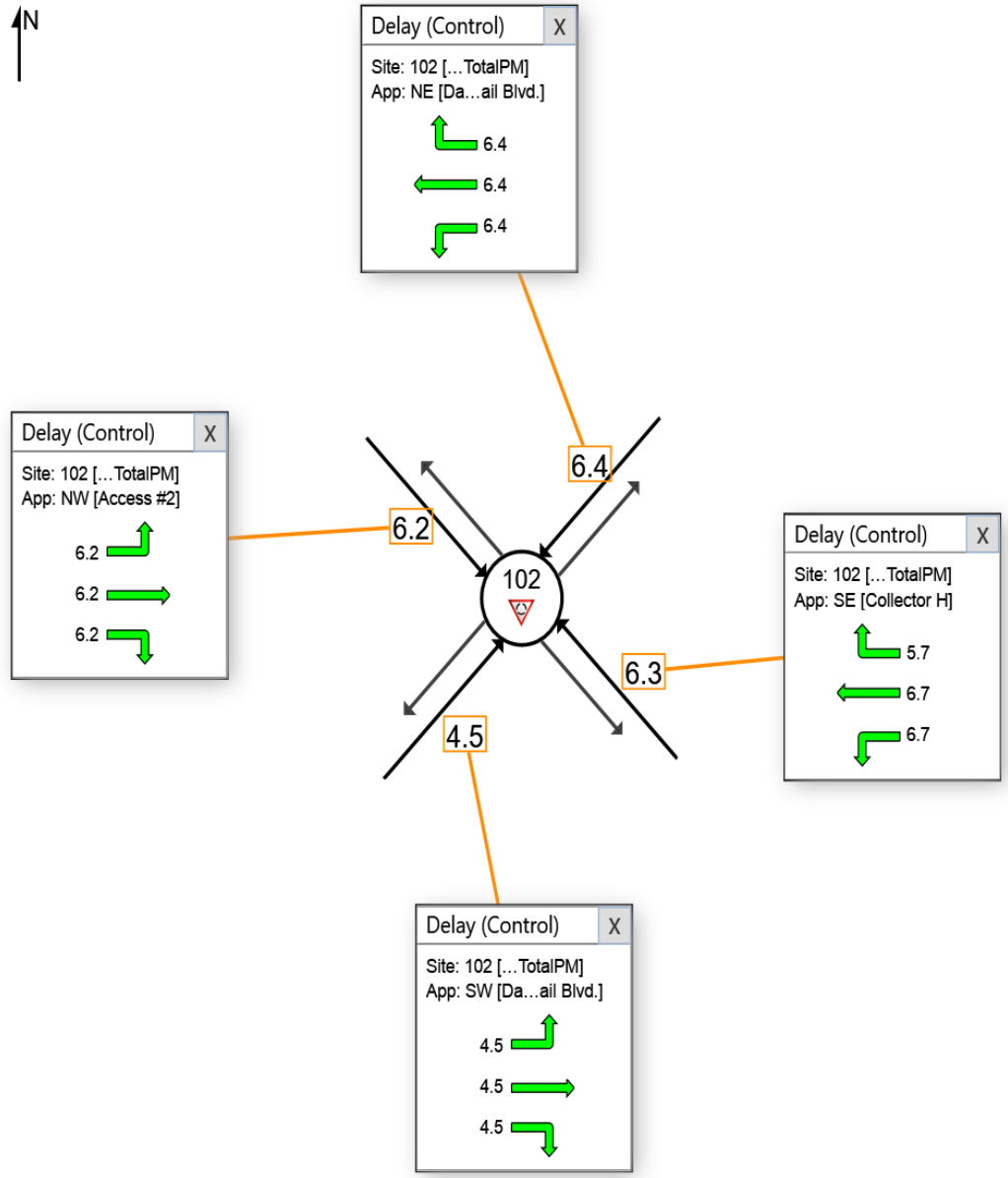
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 102 [Int #102_2030 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popups. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

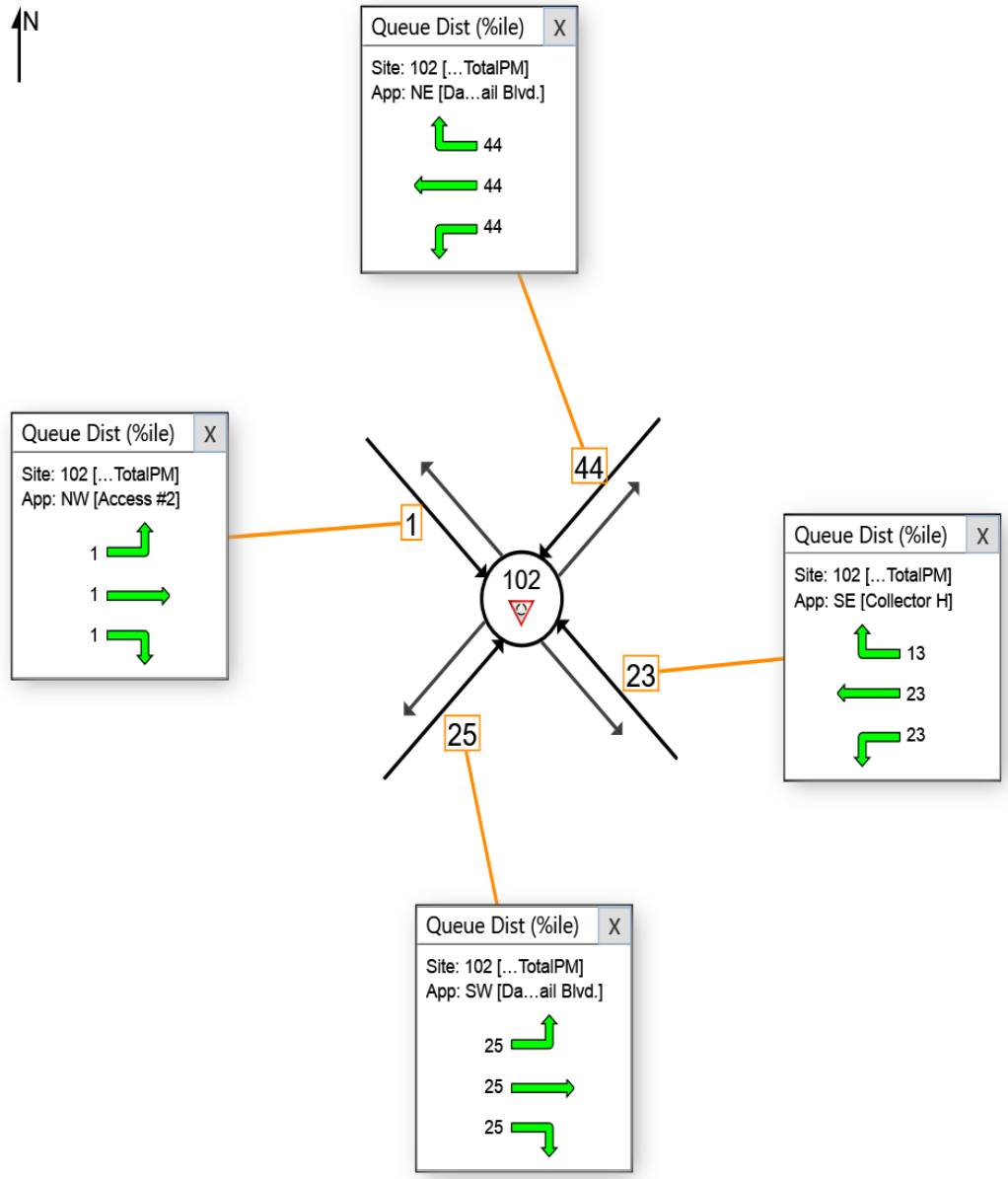
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 102 [Int #102_2030 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↱			↱	↰	↑↑	↱	↰	↑↑↱	
Traffic Vol, veh/h	0	0	41	0	0	59	32	480	169	58	842	9
Future Vol, veh/h	0	0	41	0	0	59	32	480	169	58	842	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	250	-	0	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	45	0	0	64	35	522	184	63	915	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	463	-	-	261	925	0	0	706	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	546	0	0	738	734	-	-	888	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	546	-	-	738	734	-	-	888	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.2	10.3	0.5	0.6
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	734	-	-	546	738	888	-	-
HCM Lane V/C Ratio	0.047	-	-	0.082	0.087	0.071	-	-
HCM Control Delay (s)	10.1	-	-	12.2	10.3	9.4	-	-
HCM Lane LOS	B	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.3	0.2	-	-

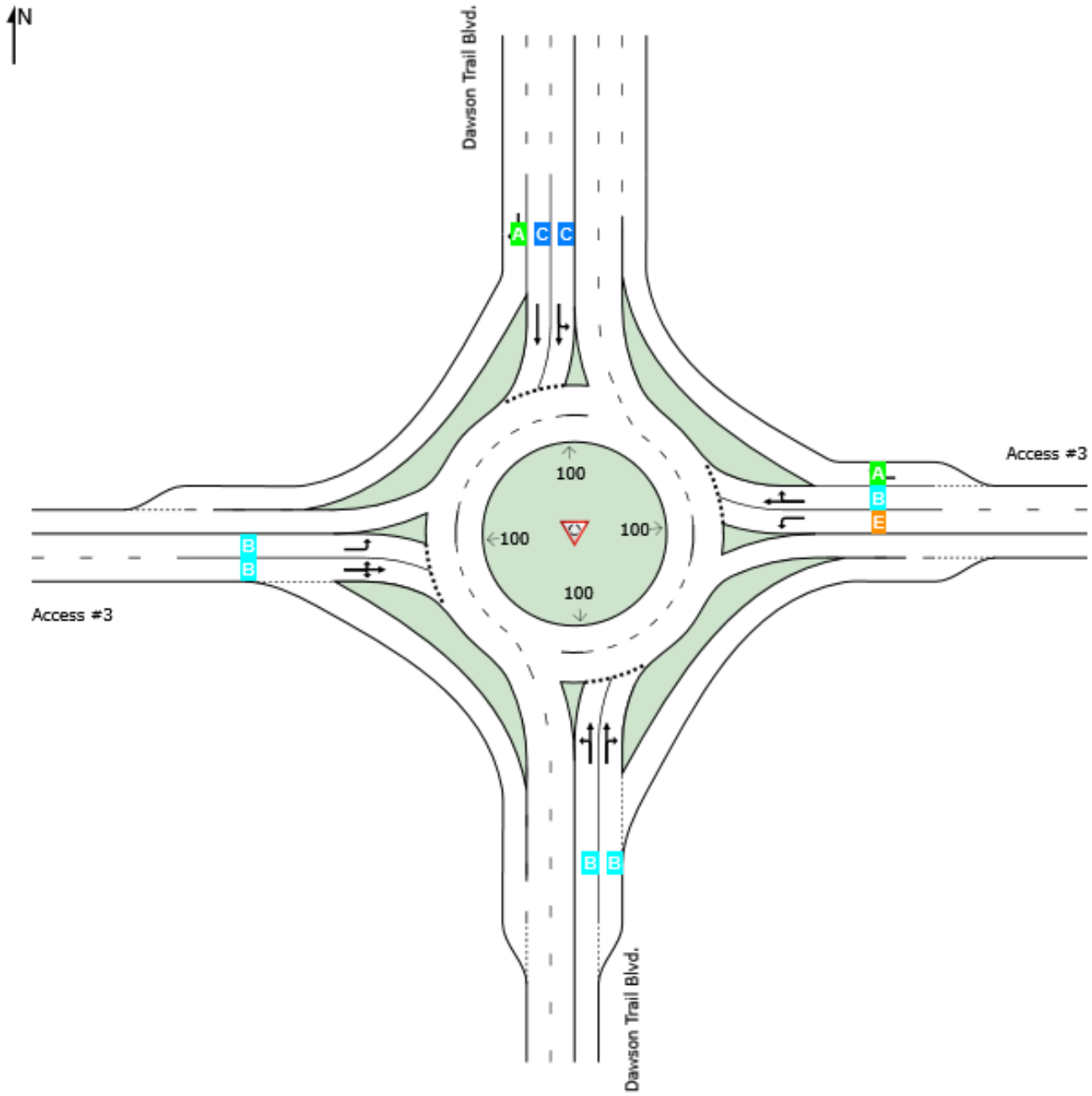
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 104 [Int#104_2030 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	B	C	C	B	C



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 9:28:37 AM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #104-mod.sip9

DELAY (CONTROL)

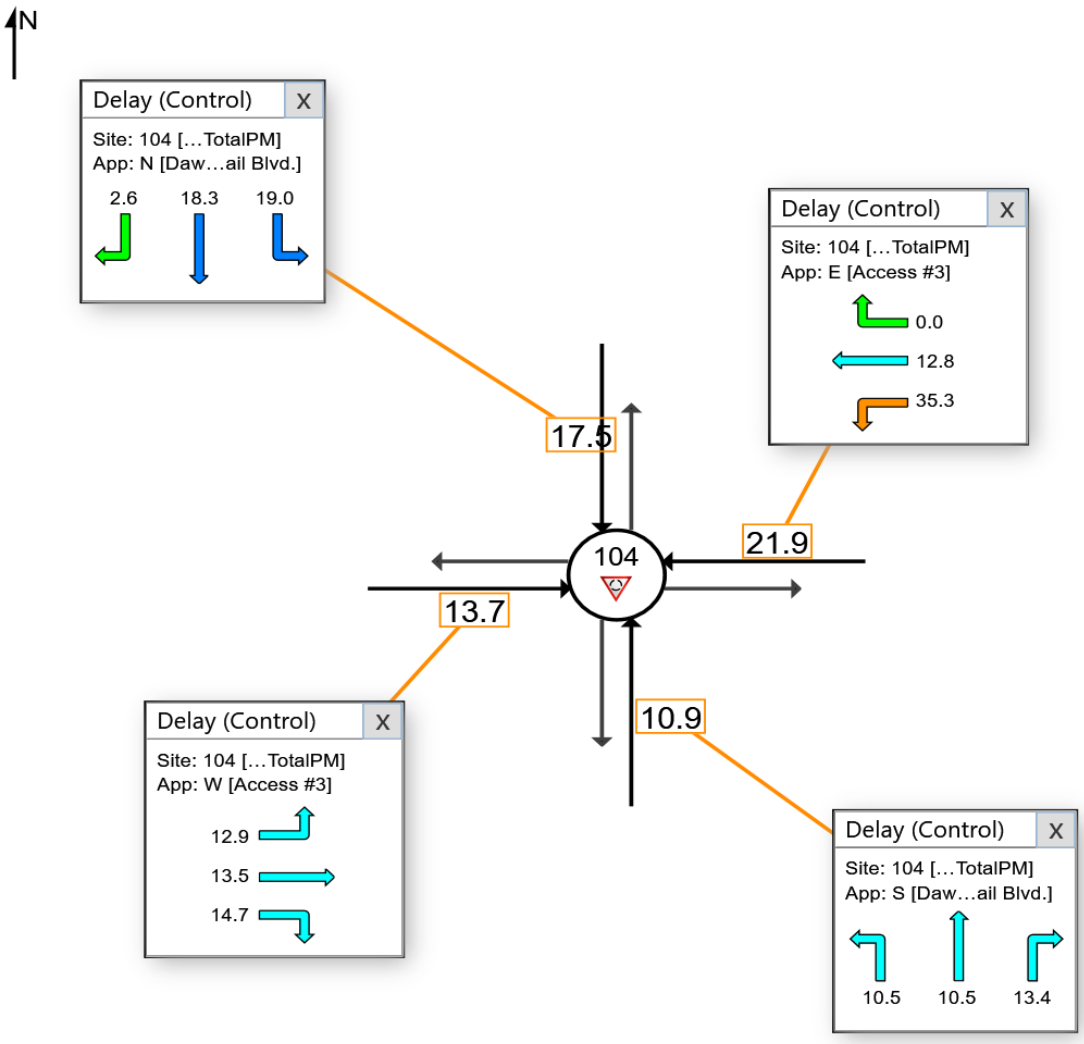
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 104 [Int#104_2030 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

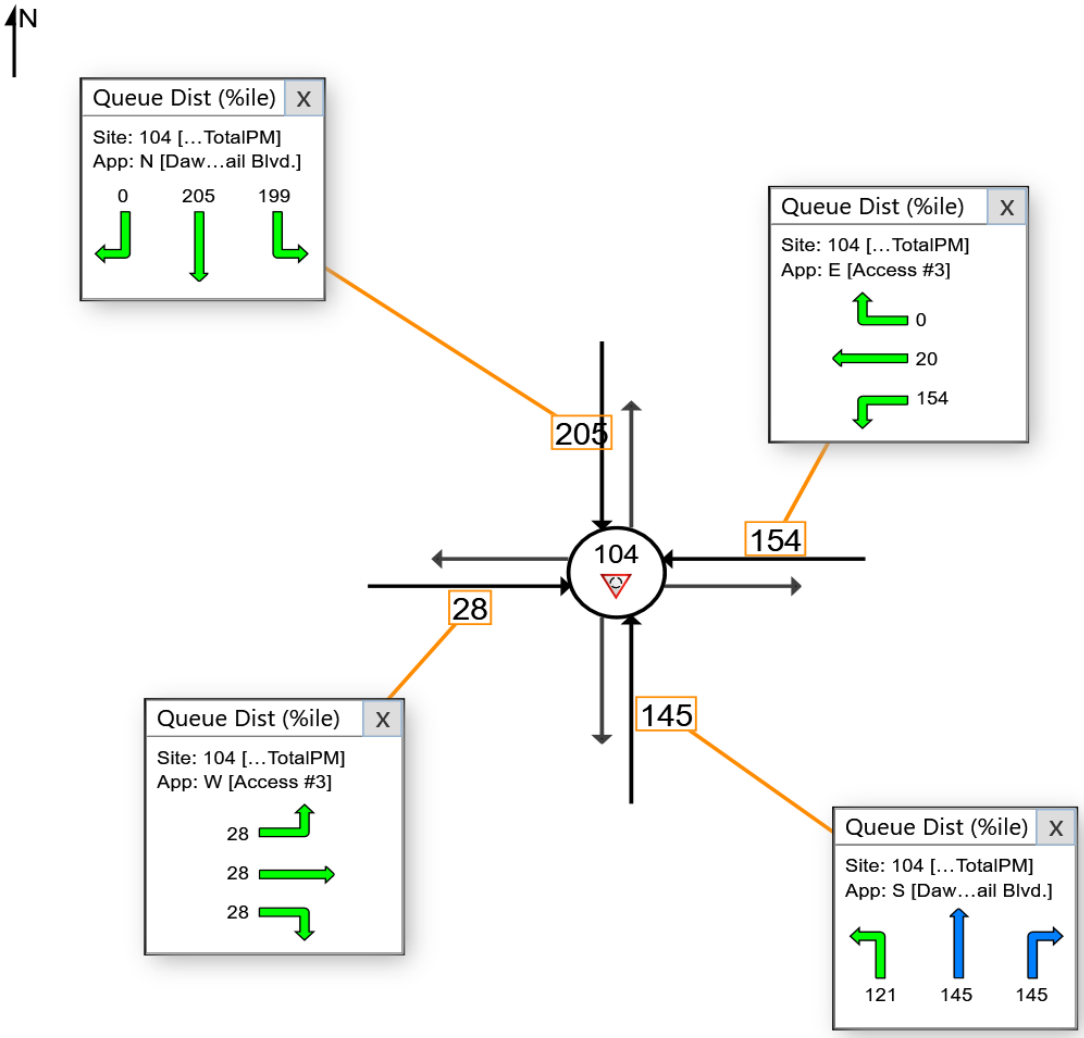
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 104 [Int#104_2030 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



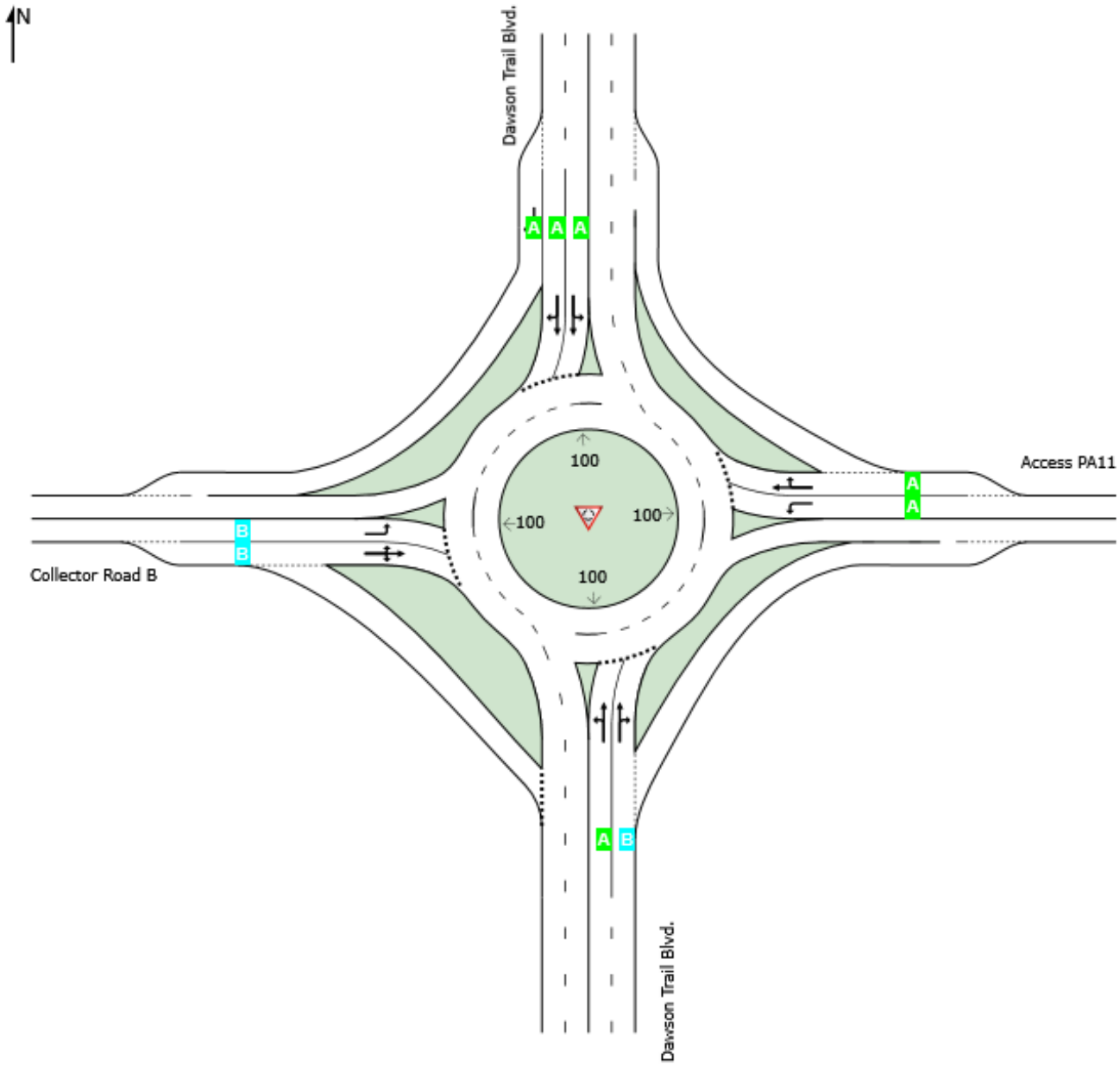
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 105 [Int#105_2030 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	B	A	A	B	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 9:36:24 AM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #105-mod.sip9

DELAY (CONTROL)

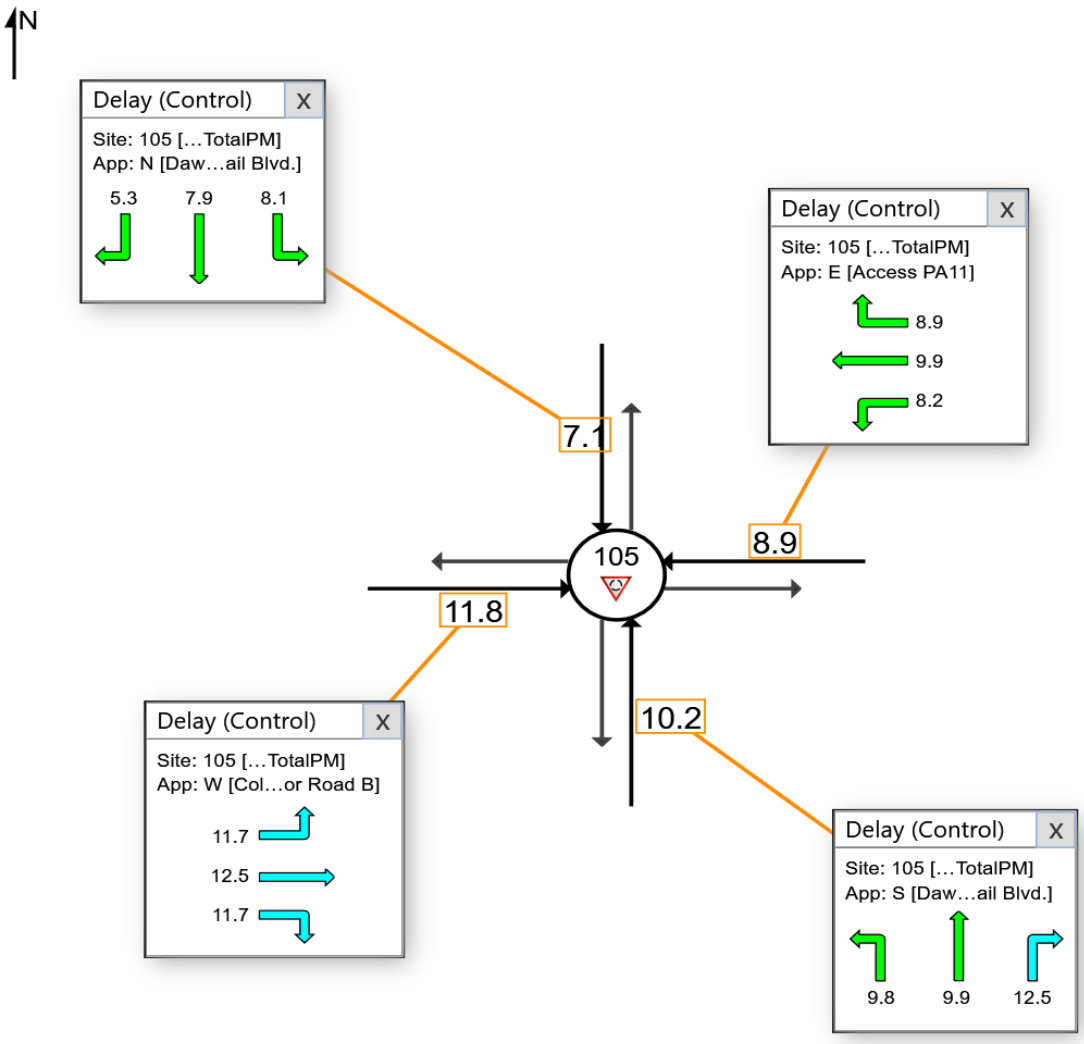
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 105 [Int#105_2030 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

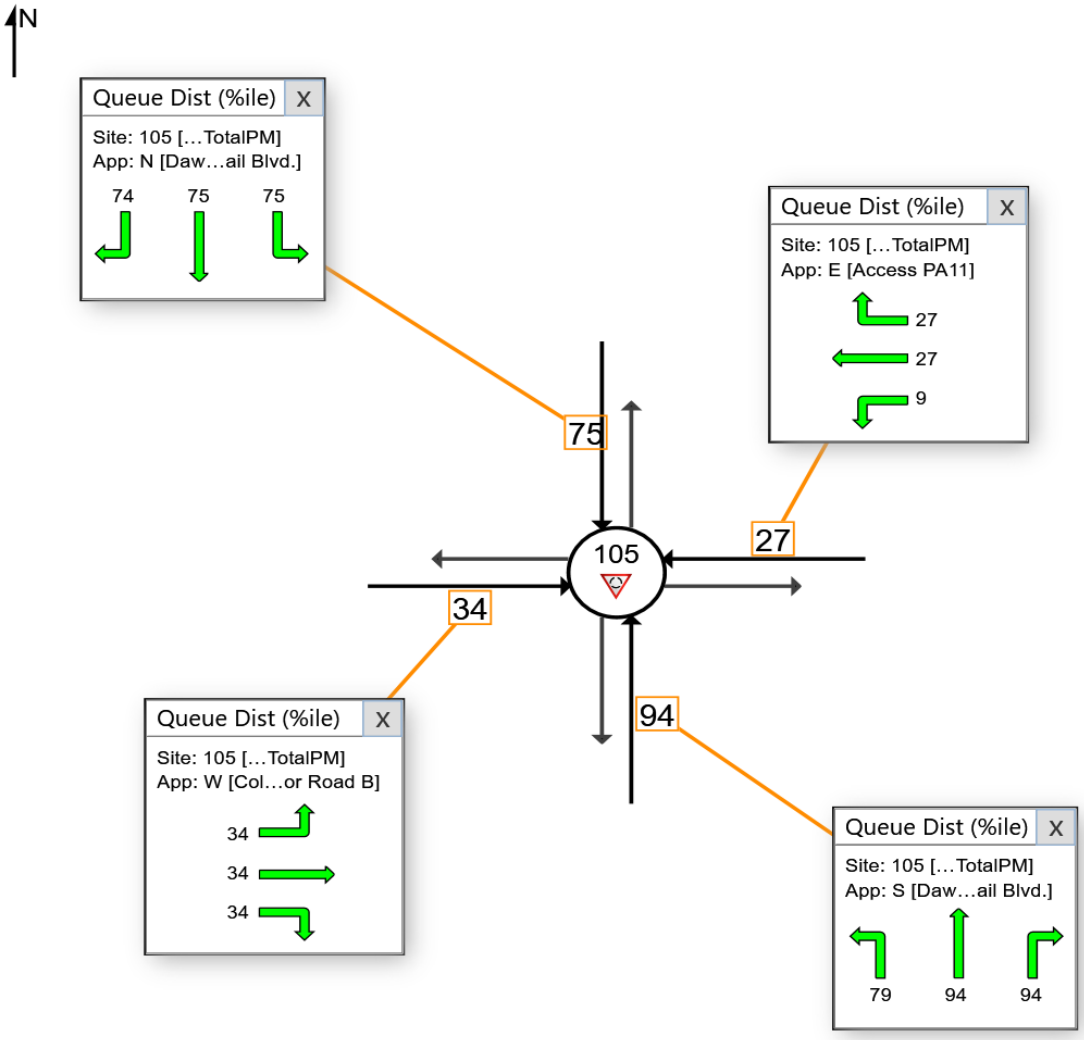
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 105 [Int#105_2030 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



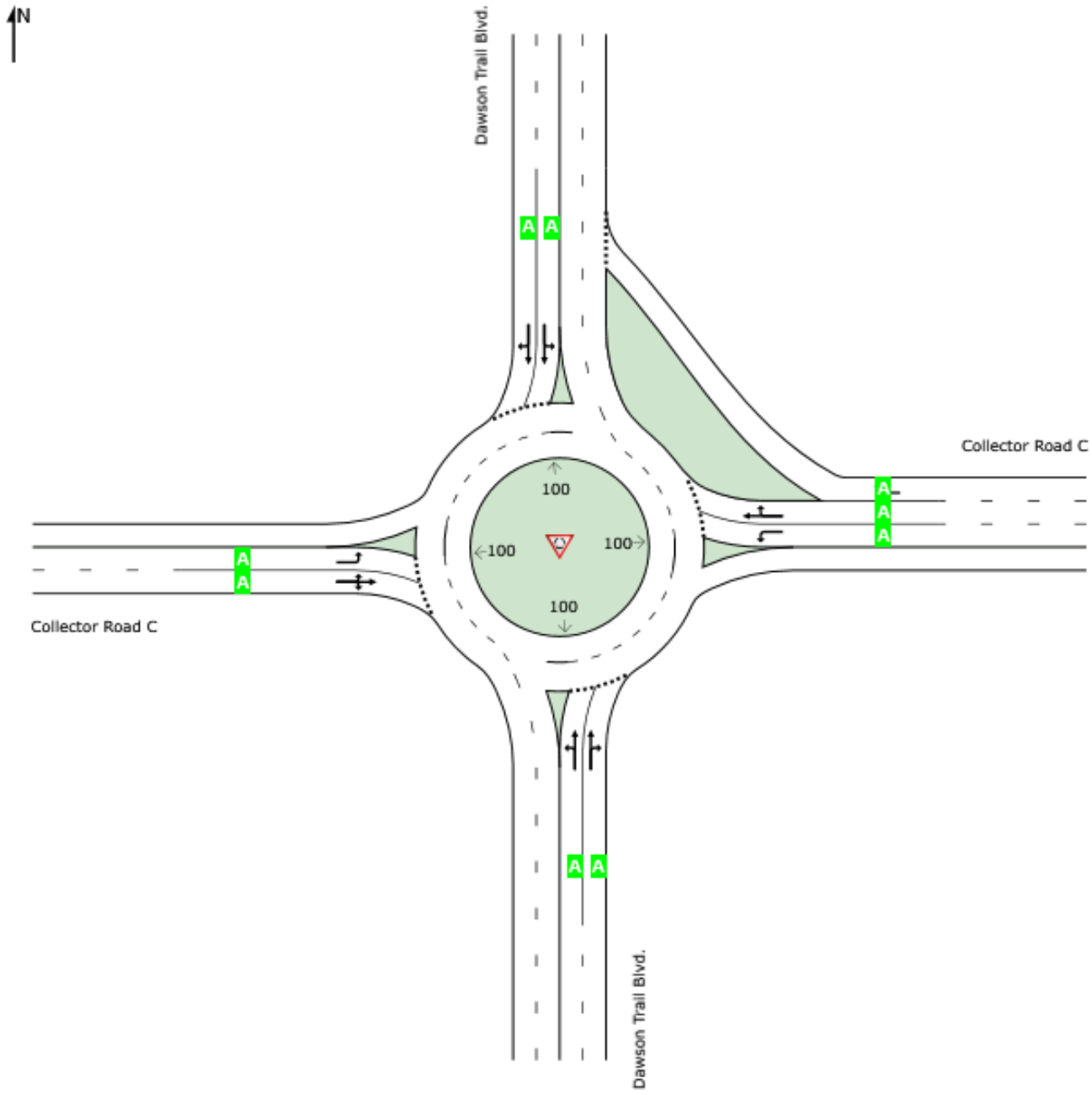
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 106 [Int#106_2030 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	A	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 9:50:33 AM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int#106-mod.sip9

DELAY (CONTROL)

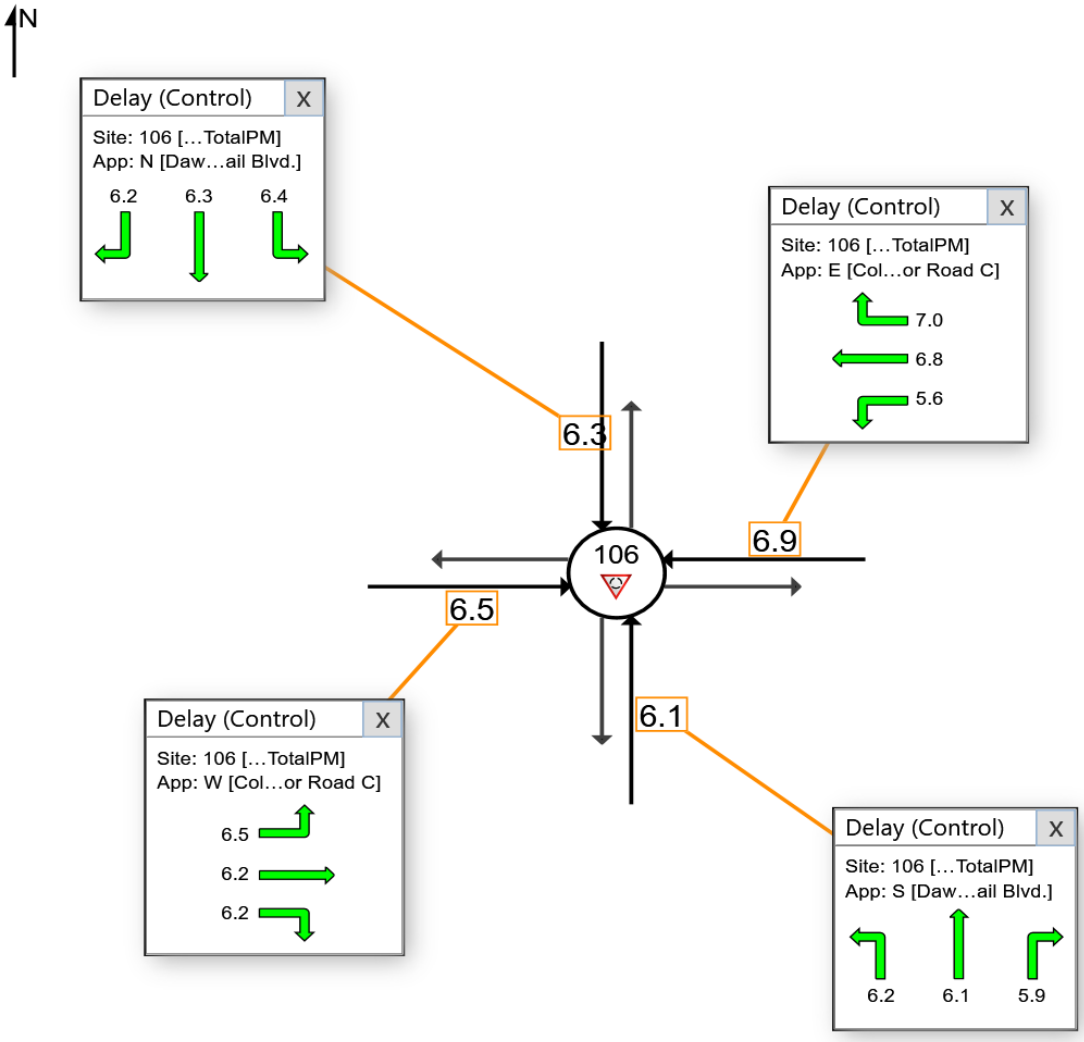
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 106 [Int#106_2030 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

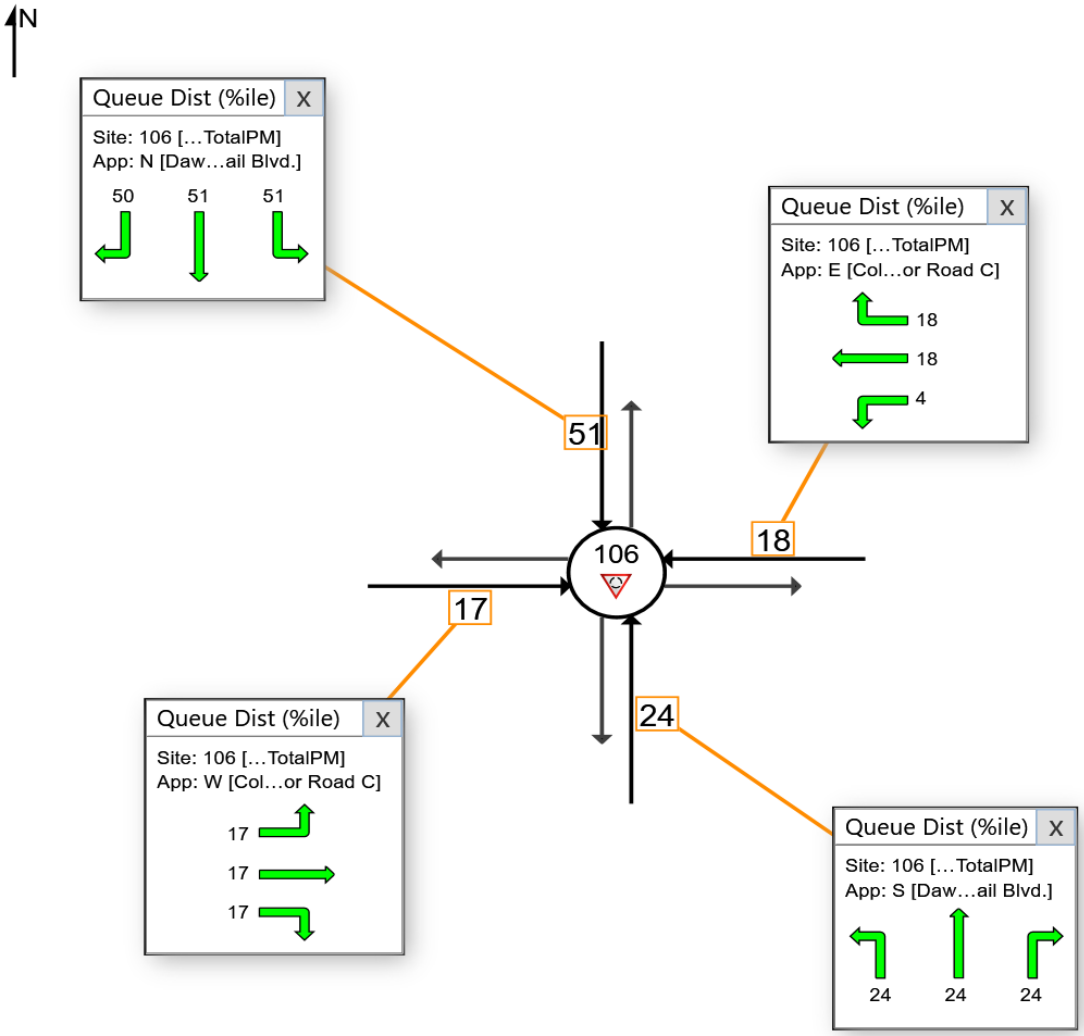
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 106 [Int#106_2030 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



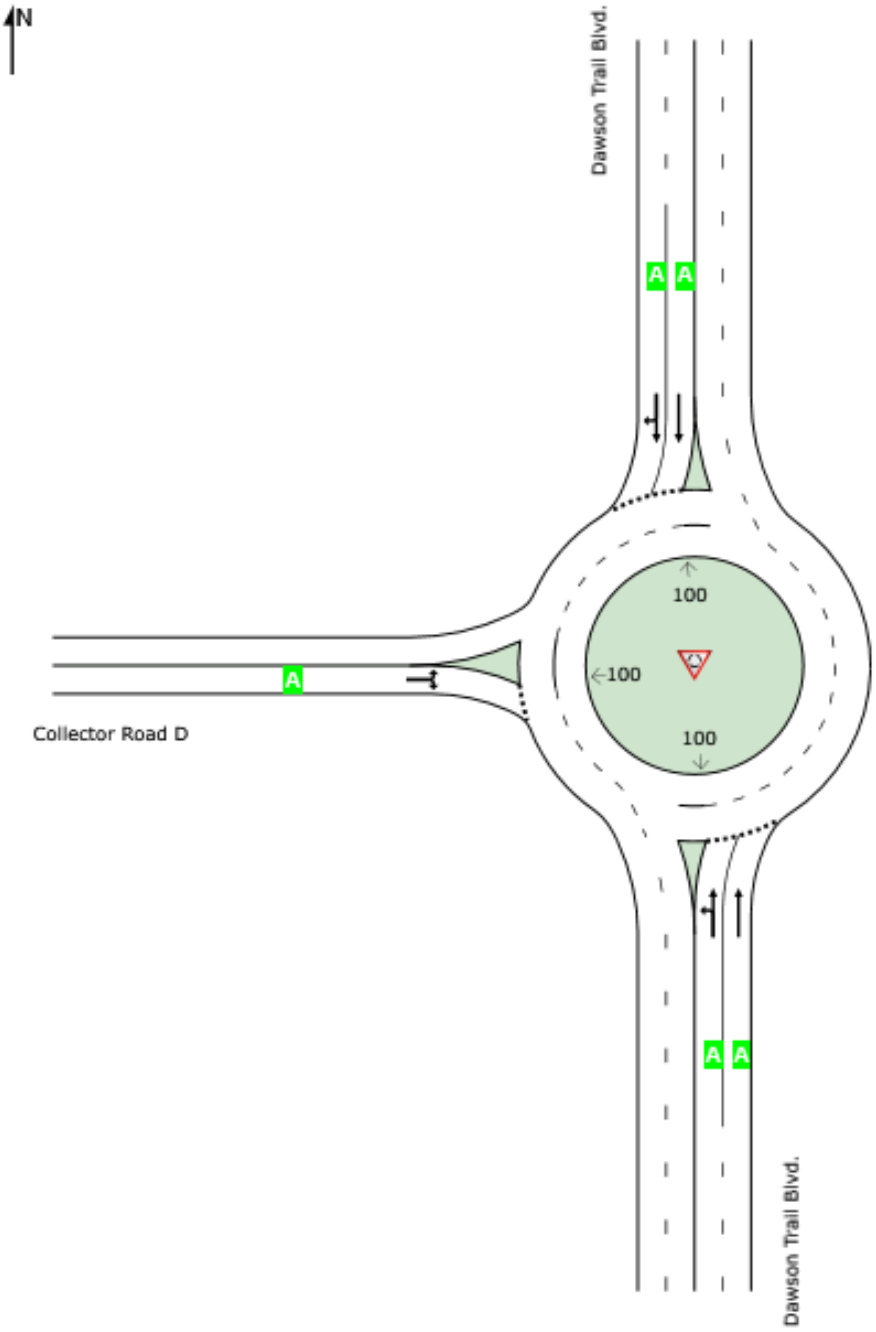
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 107 [Int#107_2030 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches			Intersection
	South	North	West	
LOS	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 10:01:01 AM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int#107.sip9

DELAY (CONTROL)

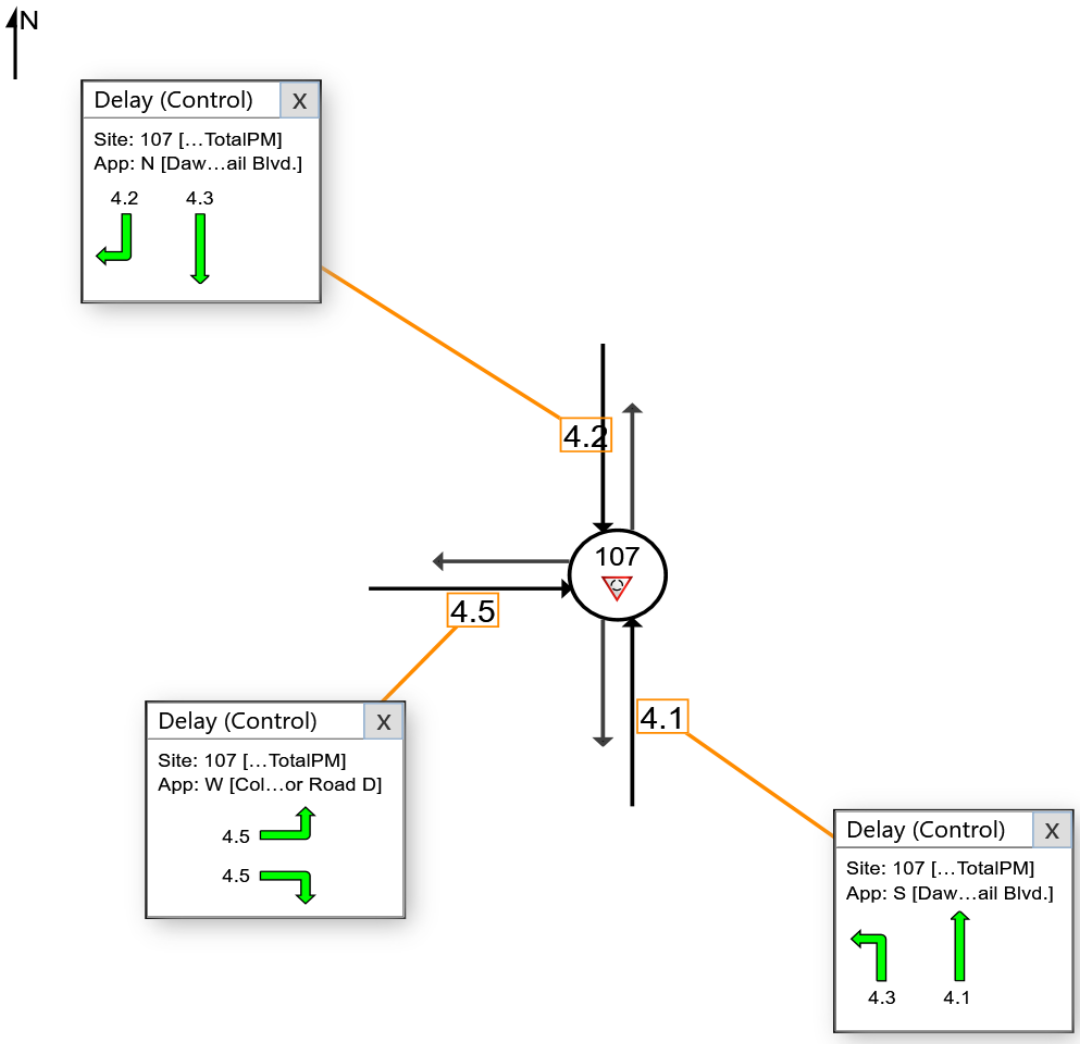
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 107 [Int#107_2030 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

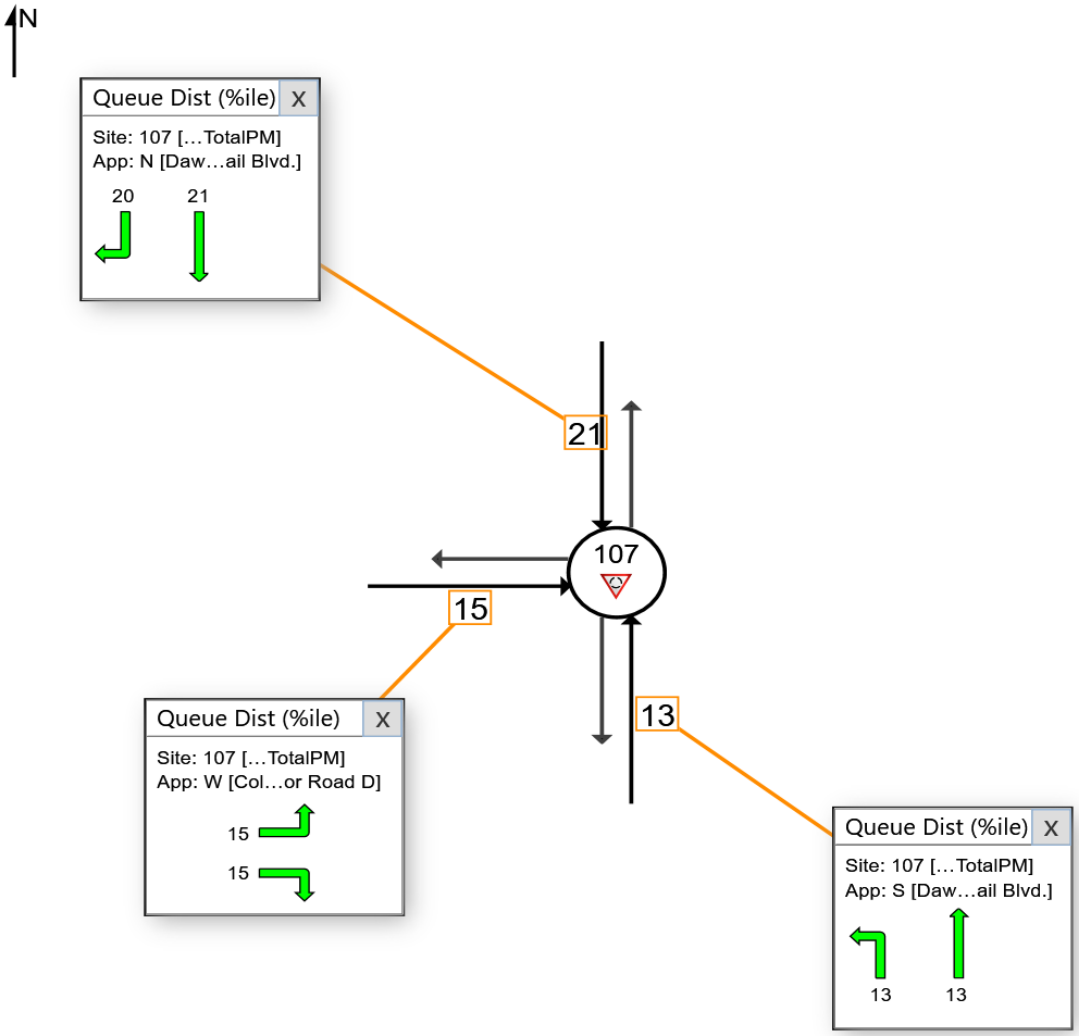
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 107 [Int#107_2030 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

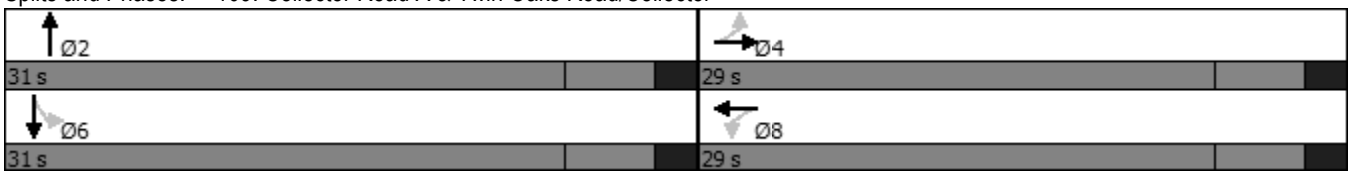
Close All Popups

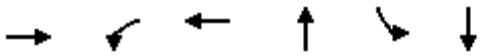


Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	10	5	116	5	457	105	604
Future Volume (vph)	10	5	116	5	457	105	604
Turn Type	Perm	NA	Perm	NA	NA	Perm	NA
Protected Phases		4		8	2		6
Permitted Phases	4		8			6	
Detector Phase	4	4	8	8	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	28.0	28.0	28.0	28.0	28.0	28.0	28.0
Total Split (s)	29.0	29.0	29.0	29.0	31.0	31.0	31.0
Total Split (%)	48.3%	48.3%	48.3%	48.3%	51.7%	51.7%	51.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	None	None	None	None	Max	Max	Max
Act Effct Green (s)		9.6	9.7	9.7	29.4	29.4	29.4
Actuated g/C Ratio		0.20	0.20	0.20	0.62	0.62	0.62
v/c Ratio		0.06	0.45	0.35	0.26	0.23	0.32

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 47.4
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.45
Intersection Signal Delay: 7.8
Intersection Capacity Utilization 45.0%
Analysis Period (min) 15

Splits and Phases: 109: Collector Road A & Twin Oaks Road/Collector





Lane Group	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	17	126	156	573	114	690
v/c Ratio	0.06	0.45	0.35	0.26	0.23	0.32
Control Delay	14.3	21.2	6.1	6.2	8.5	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.3	21.2	6.1	6.2	8.5	6.7
Queue Length 50th (ft)	4	30	1	35	14	47
Queue Length 95th (ft)	15	66	34	75	47	95
Internal Link Dist (ft)	280		145	1511		693
Turn Bay Length (ft)		150			250	
Base Capacity (vph)	655	676	852	2164	503	2183
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.19	0.18	0.26	0.23	0.32

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	5	1	116	5	139	0	457	70	105	604	30
Future Volume (veh/h)	10	5	1	116	5	139	0	457	70	105	604	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	0	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	11	5	1	126	5	151	0	497	76	114	657	33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	0	2	2	2	2	2
Cap, veh/h	196	70	8	419	8	245	0	1757	267	571	1957	98
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.00	0.57	0.57	0.57	0.57	0.57
Sat Flow, veh/h	382	438	51	1410	51	1542	0	3185	471	839	3443	173
Grp Volume(v), veh/h	17	0	0	126	0	156	0	285	288	114	339	351
Grp Sat Flow(s),veh/h/ln	872	0	0	1410	0	1593	0	1777	1786	839	1777	1839
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	4.0	0.0	3.6	3.7	3.6	4.5	4.5
Cycle Q Clear(g_c), s	4.1	0.0	0.0	2.9	0.0	4.0	0.0	3.6	3.7	7.2	4.5	4.5
Prop In Lane	0.65		0.06	1.00		0.97	0.00		0.26	1.00		0.09
Lane Grp Cap(c), veh/h	273	0	0	419	0	253	0	1010	1015	571	1010	1045
V/C Ratio(X)	0.06	0.00	0.00	0.30	0.00	0.62	0.00	0.28	0.28	0.20	0.34	0.34
Avail Cap(c_a), veh/h	779	0	0	932	0	833	0	1010	1015	571	1010	1045
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.8	0.0	0.0	16.8	0.0	17.2	0.0	4.9	4.9	6.7	5.1	5.1
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.4	0.0	2.4	0.0	0.7	0.7	0.8	0.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	1.0	0.0	1.4	0.0	1.0	1.0	0.6	1.2	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.9	0.0	0.0	17.2	0.0	19.7	0.0	5.6	5.6	7.5	6.0	5.9
LnGrp LOS	B	A	A	B	A	B	A	A	A	A	A	A
Approach Vol, veh/h		17			282			573			804	
Approach Delay, s/veh		15.9			18.6			5.6			6.2	
Approach LOS		B			B			A			A	

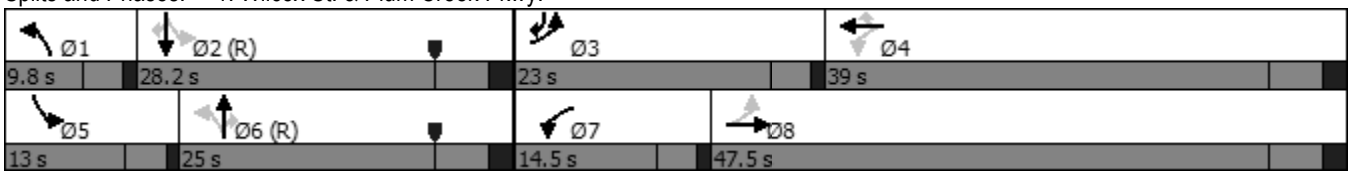
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		31.0		13.0		31.0		13.0				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		25.0		23.0		25.0		23.0				
Max Q Clear Time (g_c+I1), s		5.7		6.1		9.2		6.0				
Green Ext Time (p_c), s		3.4		0.0		4.6		1.2				

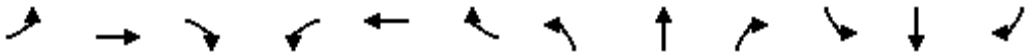
Intersection Summary	
HCM 6th Ctrl Delay	8.2
HCM 6th LOS	A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	310	1075	295	104	870	165	250	174	98	165	219	298
Future Volume (vph)	310	1075	295	104	870	165	250	174	98	165	219	298
Turn Type	pm+pt	NA	Free	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+ov
Protected Phases	3	8		7	4		1	6		5	2	3
Permitted Phases	8		Free	4		4	6		6	2		2
Detector Phase	3	8		7	4	4	1	6	6	5	2	3
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	5.0	10.0	10.0	5.0	4.0	5.0
Minimum Split (s)	9.5	31.0		14.5	31.0	31.0	9.5	16.0	16.0	9.5	10.0	9.5
Total Split (s)	23.0	47.5		14.5	39.0	39.0	9.8	25.0	25.0	13.0	28.2	23.0
Total Split (%)	23.0%	47.5%		14.5%	39.0%	39.0%	9.8%	25.0%	25.0%	13.0%	28.2%	23.0%
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	3.0
All-Red Time (s)	1.0	2.0		1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	None
Act Effct Green (s)	54.8	39.2	100.0	44.5	32.5	32.5	30.7	22.3	22.3	34.9	24.4	47.0
Actuated g/C Ratio	0.55	0.39	1.00	0.44	0.32	0.32	0.31	0.22	0.22	0.35	0.24	0.47
v/c Ratio	0.87	0.82	0.20	0.44	0.81	0.28	0.41	0.46	0.23	0.45	0.52	0.41

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 31.7
Intersection Capacity Utilization 92.0%
Analysis Period (min) 15

Splits and Phases: 1: Wilcox St. & Plum Creek Pkwy.





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	326	1132	311	113	946	179	272	189	107	179	238	324
v/c Ratio	0.87	0.82	0.20	0.44	0.81	0.28	0.41	0.46	0.23	0.45	0.52	0.41
Control Delay	47.6	32.5	0.3	21.6	48.2	14.5	25.8	39.5	2.6	27.6	38.7	14.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.6	32.5	0.3	21.6	48.2	14.5	25.8	39.5	2.6	27.6	38.7	14.9
Queue Length 50th (ft)	141	316	0	45	336	26	63	110	0	83	136	100
Queue Length 95th (ft)	#274	399	0	m81	404	m92	95	181	13	139	216	167
Internal Link Dist (ft)		553			473			812			658	
Turn Bay Length (ft)	280		250	185			190		195	130		130
Base Capacity (vph)	410	1479	1583	267	1187	639	667	411	471	406	454	820
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.77	0.20	0.42	0.80	0.28	0.41	0.46	0.23	0.44	0.52	0.40

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	310	1075	295	104	870	165	250	174	98	165	219	298
Future Volume (veh/h)	310	1075	295	104	870	165	250	174	98	165	219	298
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1885	1885	1885	1856	1856	1856	1870	1870	1870
Adj Flow Rate, veh/h	326	1132	0	113	946	179	272	189	107	179	238	324
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	1	1	1	3	3	3	2	2	2
Cap, veh/h	357	1310		281	1153	513	624	456	385	406	519	665
Arrive On Green	0.14	0.37	0.00	0.03	0.11	0.11	0.06	0.25	0.25	0.09	0.28	0.28
Sat Flow, veh/h	1781	3554	1585	1795	3582	1595	3428	1856	1569	1781	1870	1582
Grp Volume(v), veh/h	326	1132	0	113	946	179	272	189	107	179	238	324
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1795	1791	1595	1714	1856	1569	1781	1870	1582
Q Serve(g_s), s	12.1	29.5	0.0	4.0	25.9	10.4	5.8	8.6	5.5	7.3	10.5	14.9
Cycle Q Clear(g_c), s	12.1	29.5	0.0	4.0	25.9	10.4	5.8	8.6	5.5	7.3	10.5	14.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	357	1310		281	1153	513	624	456	385	406	519	665
V/C Ratio(X)	0.91	0.86		0.40	0.82	0.35	0.44	0.41	0.28	0.44	0.46	0.49
Avail Cap(c_a), veh/h	442	1475		297	1182	526	624	456	385	406	519	665
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.79	0.79	0.79	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.3	29.2	0.0	23.8	41.9	35.0	26.9	31.7	30.5	24.2	29.9	21.1
Incr Delay (d2), s/veh	18.4	5.1	0.0	0.3	3.7	0.3	0.2	2.8	1.8	0.3	2.9	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	12.9	0.0	1.7	12.9	4.4	2.5	4.2	2.2	3.1	5.2	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.8	34.4	0.0	24.0	45.6	35.3	27.0	34.4	32.3	24.5	32.8	23.7
LnGrp LOS	D	C		C	D	D	C	C	C	C	C	C
Approach Vol, veh/h		1458	A		1238			568			741	
Approach Delay, s/veh		36.0			42.1			30.5			26.8	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.8	33.8	18.2	38.2	13.0	30.6	13.6	42.9
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	5.8	22.2	19.0	33.0	9.0	19.0	10.5	41.5
Max Q Clear Time (g_c+I1), s	7.8	16.9	14.1	27.9	9.3	10.6	6.0	31.5
Green Ext Time (p_c), s	0.0	1.7	0.2	3.0	0.0	1.3	0.0	5.4

Intersection Summary	
HCM 6th Ctrl Delay	35.4
HCM 6th LOS	D

Notes

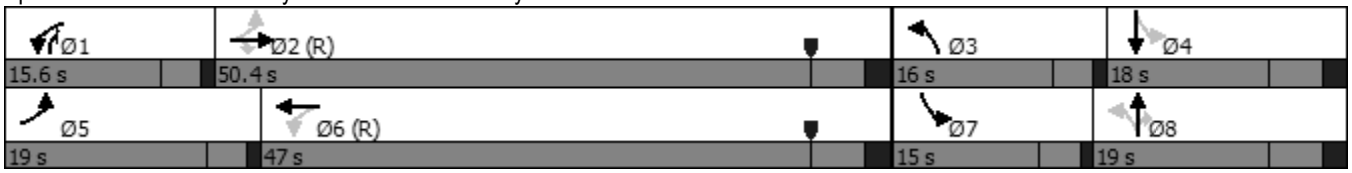
User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	251	952	155	155	787	205	120	150	195	125	222
Future Volume (vph)	251	952	155	155	787	205	120	150	195	125	222
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	pm+ov	pm+pt	NA	Free
Protected Phases	5	2		1	6	3	8	1	7	4	
Permitted Phases	2		2	6		8		8	4		Free
Detector Phase	5	2	2	1	6	3	8	1	7	4	
Switch Phase											
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0	3.0	5.0	3.0	3.0	5.0	
Minimum Split (s)	9.5	32.0	32.0	9.5	32.0	9.5	11.0	9.5	9.5	11.0	
Total Split (s)	19.0	50.4	50.4	15.6	47.0	16.0	19.0	15.6	15.0	18.0	
Total Split (%)	19.0%	50.4%	50.4%	15.6%	47.0%	16.0%	19.0%	15.6%	15.0%	18.0%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.0	3.0	3.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	1.0	2.0	1.0	1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	4.0	4.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None	None	
Act Effct Green (s)	63.1	50.2	50.2	56.6	46.7	24.9	11.5	21.4	23.0	10.6	100.0
Actuated g/C Ratio	0.63	0.50	0.50	0.57	0.47	0.25	0.12	0.21	0.23	0.11	1.00
v/c Ratio	0.74	0.54	0.19	0.48	0.66	0.65	0.60	0.38	0.59	0.66	0.15

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 20.9
Intersection Capacity Utilization 77.6%
Analysis Period (min) 15

Splits and Phases: 2: Perry St. & Plum Creek Pkwy.





Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	256	971	158	168	1072	223	130	163	207	133	236
v/c Ratio	0.74	0.54	0.19	0.48	0.66	0.65	0.60	0.38	0.59	0.66	0.15
Control Delay	17.4	15.3	5.4	15.7	20.1	39.1	53.8	13.3	36.9	58.9	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.4	15.3	5.4	15.7	20.1	39.1	53.8	13.3	36.9	58.9	0.2
Queue Length 50th (ft)	32	294	36	36	191	114	79	26	104	82	0
Queue Length 95th (ft)	m68	364	m53	93	278	182	139	75	169	143	0
Internal Link Dist (ft)		473			1330		455			497	
Turn Bay Length (ft)	170		70	100		185		65	120		120
Base Capacity (vph)	407	1792	842	415	1633	354	244	479	359	228	1615
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.54	0.19	0.40	0.66	0.63	0.53	0.34	0.58	0.58	0.15

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	251	952	155	155	787	200	205	120	150	195	125	222
Future Volume (veh/h)	251	952	155	155	787	200	205	120	150	195	125	222
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	256	971	158	168	855	217	223	130	163	207	133	0
Peak Hour Factor	0.98	0.98	0.98	0.92	0.92	0.92	0.92	0.92	0.92	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	0	0	0
Cap, veh/h	478	1811	806	378	1360	345	337	219	293	327	202	
Arrive On Green	0.12	0.67	0.67	0.14	0.96	0.96	0.12	0.12	0.12	0.11	0.11	0.00
Sat Flow, veh/h	1795	3582	1594	1795	2828	717	1795	1885	1585	1810	1900	1610
Grp Volume(v), veh/h	256	971	158	168	541	531	223	130	163	207	133	0
Grp Sat Flow(s),veh/h/ln	1795	1791	1594	1795	1791	1754	1795	1885	1585	1810	1900	1610
Q Serve(g_s), s	7.2	13.9	3.7	4.8	2.9	2.9	11.0	6.5	9.3	10.1	6.7	0.0
Cycle Q Clear(g_c), s	7.2	13.9	3.7	4.8	2.9	2.9	11.0	6.5	9.3	10.1	6.7	0.0
Prop In Lane	1.00		1.00	1.00		0.41	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	478	1811	806	378	861	843	337	219	293	327	202	
V/C Ratio(X)	0.54	0.54	0.20	0.44	0.63	0.63	0.66	0.59	0.56	0.63	0.66	
Avail Cap(c_a), veh/h	581	1811	806	465	861	843	337	245	315	327	228	
HCM Platoon Ratio	1.33	1.33	1.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.61	0.61	0.61	0.81	0.81	0.81	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	10.2	10.4	8.7	11.3	1.1	1.1	34.4	41.9	37.1	34.9	42.9	0.0
Incr Delay (d2), s/veh	0.2	0.7	0.3	0.2	2.8	2.9	3.9	2.5	1.4	3.0	5.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	4.3	1.3	1.6	1.1	1.1	5.0	3.1	3.7	4.6	3.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.4	11.1	9.0	11.6	3.9	3.9	38.3	44.4	38.5	37.9	47.9	0.0
LnGrp LOS	B	B	A	B	A	A	D	D	D	D	D	
Approach Vol, veh/h		1385			1240			516			340	A
Approach Delay, s/veh		10.7			4.9			39.9			41.8	
Approach LOS		B			A			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.8	56.6	16.0	16.6	13.3	54.1	15.0	17.6
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	11.6	44.4	12.0	12.0	15.0	41.0	11.0	13.0
Max Q Clear Time (g_c+I1), s	6.8	15.9	13.0	8.7	9.2	4.9	12.1	11.3
Green Ext Time (p_c), s	0.1	8.4	0.0	0.1	0.1	8.5	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	16.0
HCM 6th LOS	B

Notes

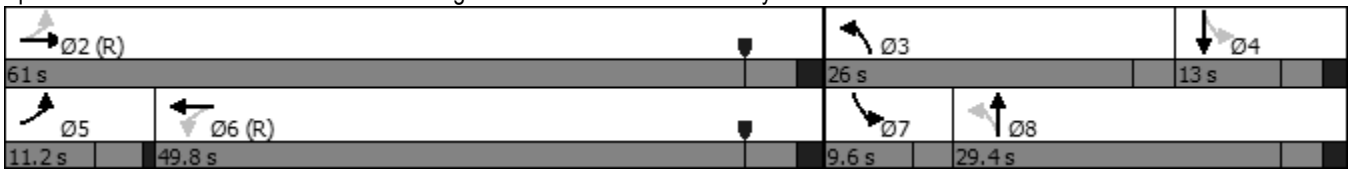
User approved pedestrian interval to be less than phase max green.

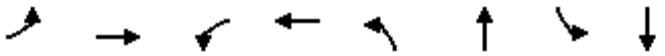
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	95	897	58	807	290	0	5	5
Future Volume (vph)	95	897	58	807	290	0	5	5
Turn Type	pm+pt	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases	5	2		6	3	8	7	4
Permitted Phases	2		6		8		4	
Detector Phase	5	2	6	6	3	8	7	4
Switch Phase								
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0	3.0	2.0
Minimum Split (s)	9.5	33.0	28.0	28.0	14.5	10.0	9.5	7.0
Total Split (s)	11.2	61.0	49.8	49.8	26.0	29.4	9.6	13.0
Total Split (%)	11.2%	61.0%	49.8%	49.8%	26.0%	29.4%	9.6%	13.0%
Yellow Time (s)	3.5	4.0	4.0	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	6.0	6.0	3.0	5.0	3.0	5.0
Lead/Lag	Lead		Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	C-Max	None	Max	None	Max
Act Effct Green (s)	56.5	55.0	46.0	46.0	36.0	32.4	19.9	13.2
Actuated g/C Ratio	0.56	0.55	0.46	0.46	0.36	0.32	0.20	0.13
v/c Ratio	0.35	0.69	0.52	0.54	0.60	0.10	0.02	0.19

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 18.5
Intersection Capacity Utilization 79.9%
Analysis Period (min) 15

Splits and Phases: 3: Plum Creek Blvd./Fairgrounds Rd. & Plum Creek Pkwy.





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	104	1321	63	882	315	63	5	48
v/c Ratio	0.35	0.69	0.52	0.54	0.60	0.10	0.02	0.19
Control Delay	12.6	13.9	40.2	21.5	30.4	0.3	22.8	17.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.6	13.9	40.2	21.5	30.4	0.3	22.8	17.4
Queue Length 50th (ft)	19	184	29	214	154	0	2	3
Queue Length 95th (ft)	m57	316	#93	275	236	0	10	38
Internal Link Dist (ft)		1330		637		613		434
Turn Bay Length (ft)	70		55				110	
Base Capacity (vph)	303	1912	121	1644	559	652	325	254
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.69	0.52	0.54	0.56	0.10	0.02	0.19

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	897	305	58	807	5	290	0	58	5	5	40
Future Volume (veh/h)	95	897	305	58	807	5	290	0	58	5	5	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	104	986	335	63	877	5	315	0	63	5	5	43
Peak Hour Factor	0.91	0.91	0.91	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	0	0	0
Cap, veh/h	383	1586	535	286	1867	11	460	0	403	187	14	117
Arrive On Green	0.09	1.00	1.00	0.51	0.51	0.51	0.18	0.00	0.25	0.00	0.08	0.08
Sat Flow, veh/h	1795	2627	886	418	3651	21	1795	0	1596	1810	170	1461
Grp Volume(v), veh/h	104	670	651	63	430	452	315	0	63	5	0	48
Grp Sat Flow(s),veh/h/ln	1795	1791	1722	418	1791	1881	1795	0	1596	1810	0	1631
Q Serve(g_s), s	2.6	0.0	0.0	8.7	15.4	15.4	15.4	0.0	3.1	0.3	0.0	2.8
Cycle Q Clear(g_c), s	2.6	0.0	0.0	8.7	15.4	15.4	15.4	0.0	3.1	0.3	0.0	2.8
Prop In Lane	1.00		0.51	1.00		0.01	1.00		1.00	1.00		0.90
Lane Grp Cap(c), veh/h	383	1081	1039	286	916	962	460	0	403	187	0	130
V/C Ratio(X)	0.27	0.62	0.63	0.22	0.47	0.47	0.68	0.00	0.16	0.03	0.00	0.37
Avail Cap(c_a), veh/h	419	1081	1039	286	916	962	556	0	403	300	0	130
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.83	0.83	0.83	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.7	0.0	0.0	14.1	15.7	15.7	31.9	0.0	29.1	42.1	0.0	43.6
Incr Delay (d2), s/veh	0.3	2.2	2.4	1.8	1.7	1.6	1.7	0.0	0.8	0.0	0.0	7.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.7	0.7	0.9	6.4	6.7	6.8	0.0	1.3	0.1	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.0	2.2	2.4	15.8	17.4	17.4	33.6	0.0	29.9	42.1	0.0	51.4
LnGrp LOS	B	A	A	B	B	B	C	A	C	D	A	D
Approach Vol, veh/h		1425			945			378			53	
Approach Delay, s/veh		2.9			17.3			33.0			50.5	
Approach LOS		A			B			C			D	

Timer - Assigned Phs	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	66.3	20.7	13.0	9.2	57.1	3.4	30.3
Change Period (Y+Rc), s	6.0	3.0	5.0	4.5	6.0	3.0	5.0
Max Green Setting (Gmax), s	55.0	23.0	8.0	6.7	43.8	6.6	24.4
Max Q Clear Time (g_c+I1), s	2.0	17.4	4.8	4.6	17.4	2.3	5.1
Green Ext Time (p_c), s	12.9	0.3	0.0	0.0	7.1	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	12.7
HCM 6th LOS	B

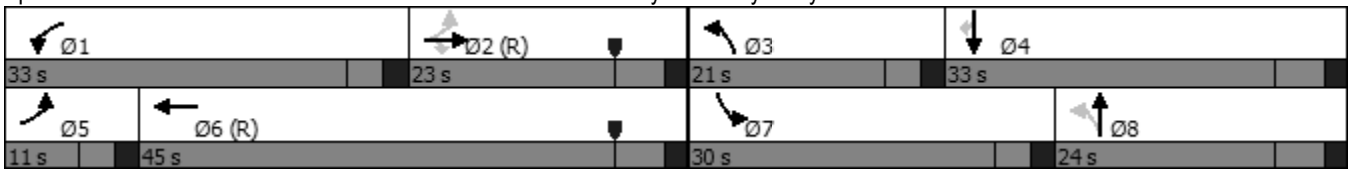
Notes

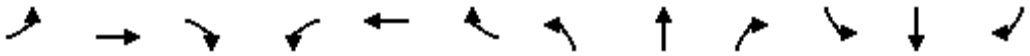
User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	84	323	3	691	393	332	16	335	746	485	628	177
Future Volume (vph)	84	323	3	691	393	332	16	335	746	485	628	177
Turn Type	pm+pt	NA	Perm	Prot	NA	Free	pm+pt	NA	Free	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2			Free	8		Free			4
Detector Phase	5	2	2	1	6		3	8		7	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	11.0	33.0	33.0	11.0	33.0		11.0	33.0		11.0	33.0	33.0
Total Split (s)	11.0	23.0	23.0	33.0	45.0		21.0	24.0		30.0	33.0	33.0
Total Split (%)	10.0%	20.9%	20.9%	30.0%	40.9%		19.1%	21.8%		27.3%	30.0%	30.0%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0		5.0	6.0		5.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max		None	Max		None	Max	Max
Act Effct Green (s)	25.1	18.1	18.1	26.9	41.2	110.0	28.6	21.4	110.0	21.6	43.3	43.3
Actuated g/C Ratio	0.23	0.16	0.16	0.24	0.37	1.00	0.26	0.19	1.00	0.20	0.39	0.39
v/c Ratio	0.34	0.60	0.01	0.90	0.61	0.23	0.07	0.53	0.51	0.78	0.51	0.27

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 30.2
Intersection Capacity Utilization 70.1%
Analysis Period (min) 15

Splits and Phases: 7: Dawson Trail Blvd. & Collector Road A/Crystal Valley Pkwy.





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	91	351	3	751	427	361	17	364	811	527	683	192
v/c Ratio	0.34	0.60	0.01	0.90	0.61	0.23	0.07	0.53	0.51	0.78	0.51	0.27
Control Delay	24.0	47.9	0.0	54.6	33.4	0.3	20.1	43.8	1.2	50.6	28.0	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.0	47.9	0.0	54.6	33.4	0.3	20.1	43.8	1.2	50.6	28.0	4.9
Queue Length 50th (ft)	35	124	0	261	250	0	7	123	0	182	174	0
Queue Length 95th (ft)	66	174	0	#357	361	0	20	178	0	235	275	50
Internal Link Dist (ft)		1283			1733			1960			1008	
Turn Bay Length (ft)	200		200	500			500		1000	500		500
Base Capacity (vph)	268	582	456	873	697	1583	406	689	1583	780	1352	721
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.60	0.01	0.86	0.61	0.23	0.04	0.53	0.51	0.68	0.51	0.27

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	84	323	3	691	393	332	16	335	746	485	628	177
Future Volume (veh/h)	84	323	3	691	393	332	16	335	746	485	628	177
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900	1870	1870	1870	1870	1870	1870	1870	1826	1826
Adj Flow Rate, veh/h	91	351	3	751	427	0	17	364	0	527	683	192
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	0	2	2	2	2	2	2	2	5	5
Cap, veh/h	378	787	356	823	760		197	582		612	1118	499
Arrive On Green	0.05	0.22	0.22	0.24	0.41	0.00	0.02	0.16	0.00	0.18	0.32	0.32
Sat Flow, veh/h	1810	3554	1610	3456	1870	1585	1781	3554	1585	3456	3469	1547
Grp Volume(v), veh/h	91	351	3	751	427	0	17	364	0	527	683	192
Grp Sat Flow(s),veh/h/ln	1810	1777	1610	1728	1870	1585	1781	1777	1585	1728	1735	1547
Q Serve(g_s), s	4.2	9.4	0.2	23.3	19.3	0.0	0.9	10.5	0.0	16.3	18.3	10.6
Cycle Q Clear(g_c), s	4.2	9.4	0.2	23.3	19.3	0.0	0.9	10.5	0.0	16.3	18.3	10.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	378	787	356	823	760		197	582		612	1118	499
V/C Ratio(X)	0.24	0.45	0.01	0.91	0.56		0.09	0.63		0.86	0.61	0.39
Avail Cap(c_a), veh/h	380	787	356	880	760		423	582		785	1118	499
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.64	0.64	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.5	37.0	33.4	40.8	25.1	0.0	37.2	42.9	0.0	44.0	31.5	28.8
Incr Delay (d2), s/veh	0.3	1.8	0.0	9.2	1.9	0.0	0.2	5.0	0.0	7.9	2.5	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	4.3	0.1	10.8	8.9	0.0	0.4	5.0	0.0	7.6	8.0	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.8	38.8	33.4	50.0	27.0	0.0	37.3	47.9	0.0	51.8	34.0	31.1
LnGrp LOS	C	D	C	D	C		D	D		D	C	C
Approach Vol, veh/h		445			1178	A		381	A		1402	
Approach Delay, s/veh		37.2			41.7			47.4			40.3	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	31.2	30.4	7.0	41.4	10.8	50.7	24.5	24.0
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	28.0	17.0	16.0	27.0	6.0	39.0	25.0	18.0
Max Q Clear Time (g_c+I1), s	25.3	11.4	2.9	20.3	6.2	21.3	18.3	12.5
Green Ext Time (p_c), s	0.9	1.0	0.0	2.9	0.0	2.5	1.2	1.1

Intersection Summary	
HCM 6th Ctrl Delay	41.2
HCM 6th LOS	D

Notes

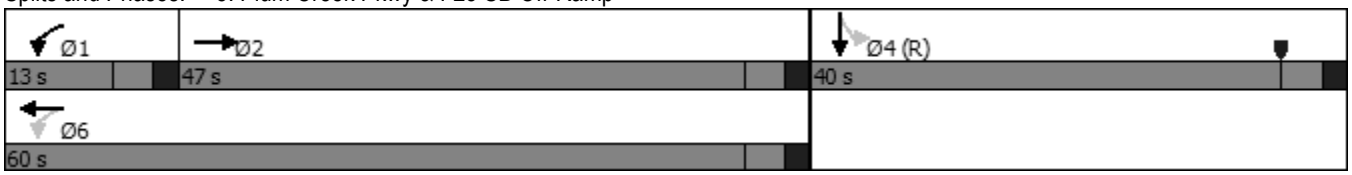
User approved pedestrian interval to be less than phase max green.

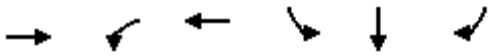
Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	834	125	598	525	5	411
Future Volume (vph)	834	125	598	525	5	411
Turn Type	NA	pm+pt	NA	Perm	NA	Free
Protected Phases	2	1	6		4	
Permitted Phases		6		4		Free
Detector Phase	2	1	6	4	4	
Switch Phase						
Minimum Initial (s)	10.0	5.0	10.0	5.0	5.0	
Minimum Split (s)	30.0	10.0	30.0	10.0	10.0	
Total Split (s)	47.0	13.0	60.0	40.0	40.0	
Total Split (%)	47.0%	13.0%	60.0%	40.0%	40.0%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes				
Recall Mode	Max	None	Max	C-Max	C-Max	
Act Effct Green (s)	43.3	56.0	56.0	36.0	36.0	100.0
Actuated g/C Ratio	0.43	0.56	0.56	0.36	0.36	1.00
v/c Ratio	0.47	0.41	0.31	0.32	0.32	0.27

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 4:SBTL, Start of Yellow
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.47
Intersection Signal Delay: 14.6
Intersection Capacity Utilization 70.9%
Analysis Period (min) 15

Splits and Phases: 8: Plum Creek Pkwy & I-25 SB Off-Ramp





Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1020	130	623	366	186	428
v/c Ratio	0.47	0.41	0.31	0.32	0.32	0.27
Control Delay	14.9	18.2	12.2	24.1	25.1	0.4
Queue Delay	0.0	1.3	1.7	0.0	0.0	0.0
Total Delay	14.9	19.6	13.9	24.1	25.1	0.4
Queue Length 50th (ft)	81	39	99	91	93	0
Queue Length 95th (ft)	108	100	156	130	156	0
Internal Link Dist (ft)	437		181		388	
Turn Bay Length (ft)						160
Base Capacity (vph)	2178	320	1981	1159	582	1583
Starvation Cap Reductn	0	76	1142	0	0	0
Spillback Cap Reductn	27	0	0	45	22	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.53	0.74	0.33	0.33	0.27

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	834	145	125	598	0	0	0	0	525	5	411
Future Volume (veh/h)	0	834	145	125	598	0	0	0	0	525	5	411
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	869	151	130	623	0				551	0	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1990	344	365	1990	0				1924	0	
Arrive On Green	0.00	0.45	0.44	0.13	1.00	0.00				0.36	0.00	0.00
Sat Flow, veh/h	0	4549	757	1781	3647	0				5344	0	1585
Grp Volume(v), veh/h	0	674	346	130	623	0				551	0	0
Grp Sat Flow(s),veh/h/ln	0	1702	1734	1781	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	13.5	13.7	3.7	0.0	0.0				7.4	0.0	0.0
Cycle Q Clear(g_c), s	0.0	13.5	13.7	3.7	0.0	0.0				7.4	0.0	0.0
Prop In Lane	0.00		0.44	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1547	788	365	1990	0				1924	0	
V/C Ratio(X)	0.00	0.44	0.44	0.36	0.31	0.00				0.29	0.00	
Avail Cap(c_a), veh/h	0	1547	788	408	1990	0				1924	0	
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.84	0.84	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	18.6	18.8	12.1	0.0	0.0				22.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.9	1.8	0.5	0.3	0.0				0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.4	5.7	1.3	0.1	0.0				3.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	19.5	20.5	12.6	0.3	0.0				23.2	0.0	0.0
LnGrp LOS	A	B	C	B	A	A				C	A	
Approach Vol, veh/h		1020			753						551	A
Approach Delay, s/veh		19.8			2.5						23.2	
Approach LOS		B			A						C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.6	49.4		40.0		60.0
Change Period (Y+Rc), s	5.0	5.0		5.0		5.0
Max Green Setting (Gmax), s	8.0	42.0		35.0		55.0
Max Q Clear Time (g_c+I1), s	5.7	15.7		9.4		2.0
Green Ext Time (p_c), s	0.1	7.8		2.1		5.0

Intersection Summary		
HCM 6th Ctrl Delay		15.0
HCM 6th LOS		B

Notes

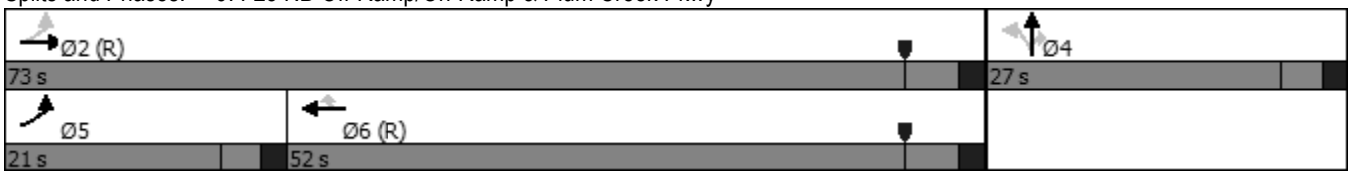
User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	449	910	563	770	160	5	110
Future Volume (vph)	449	910	563	770	160	5	110
Turn Type	pm+pt	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6			4	
Permitted Phases	2			6	4		4
Detector Phase	5	2	6	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0	5.0
Minimum Split (s)	10.0	31.0	24.0	24.0	40.0	40.0	40.0
Total Split (s)	21.0	73.0	52.0	52.0	27.0	27.0	27.0
Total Split (%)	21.0%	73.0%	52.0%	52.0%	27.0%	27.0%	27.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-2.0	-2.0	-2.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max
Act Effct Green (s)	69.0	69.0	48.0	48.0	23.0	23.0	23.0
Actuated g/C Ratio	0.69	0.69	0.48	0.48	0.23	0.23	0.23
v/c Ratio	0.95	0.26	0.56	0.50	0.30	0.24	0.17

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 83 (83%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 17.4
Intersection Capacity Utilization 70.9%
Analysis Period (min) 15

Splits and Phases: 9: I-25 NB Off-Ramp/On-Ramp & Plum Creek Pkwy





Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	458	929	896	464	116	92	72
v/c Ratio	0.95	0.26	0.56	0.50	0.30	0.24	0.17
Control Delay	49.3	2.1	17.0	3.5	34.4	22.0	6.2
Queue Delay	10.2	0.2	0.0	0.0	0.0	0.0	0.0
Total Delay	59.5	2.3	17.0	3.5	34.4	22.0	6.2
Queue Length 50th (ft)	105	21	182	0	65	31	0
Queue Length 95th (ft)	#335	25	243	57	117	78	28
Internal Link Dist (ft)		181	431			480	
Turn Bay Length (ft)					350		150
Base Capacity (vph)	482	3508	1607	932	386	383	412
Starvation Cap Reductn	25	1531	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.00	0.47	0.56	0.50	0.30	0.24	0.17

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	449	910	0	0	563	770	160	5	110	0	0	0
Future Volume (veh/h)	449	910	0	0	563	770	160	5	110	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	458	929	0	0	574	786	200	0	76			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	471	3523	0	0	898	1522	819	0	365			
Arrive On Green	0.34	1.00	0.00	0.00	0.48	0.48	0.23	0.00	0.23			
Sat Flow, veh/h	1781	5274	0	0	1870	3170	3563	0	1585			
Grp Volume(v), veh/h	458	929	0	0	574	786	200	0	76			
Grp Sat Flow(s),veh/h/ln	1781	1702	0	0	1870	1585	1781	0	1585			
Q Serve(g_s), s	15.5	0.0	0.0	0.0	23.0	17.1	4.6	0.0	3.9			
Cycle Q Clear(g_c), s	15.5	0.0	0.0	0.0	23.0	17.1	4.6	0.0	3.9			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	471	3523	0	0	898	1522	819	0	365			
V/C Ratio(X)	0.97	0.26	0.00	0.00	0.64	0.52	0.24	0.00	0.21			
Avail Cap(c_a), veh/h	471	3523	0	0	898	1522	819	0	365			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.91	0.91	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	14.7	0.0	0.0	0.0	19.5	18.0	31.4	0.0	31.1			
Incr Delay (d2), s/veh	32.6	0.2	0.0	0.0	3.5	1.3	0.7	0.0	1.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	8.2	0.1	0.0	0.0	10.4	6.3	2.0	0.0	3.9			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.3	0.2	0.0	0.0	23.0	19.2	32.1	0.0	32.4			
LnGrp LOS	D	A	A	A	C	B	C	A	C			
Approach Vol, veh/h		1387			1360			276				
Approach Delay, s/veh		15.7			20.8			32.2				
Approach LOS		B			C			C				

Timer - Assigned Phs		2		4	5	6			
Phs Duration (G+Y+Rc), s		73.0		27.0	21.0	52.0			
Change Period (Y+Rc), s		6.0		5.0	5.0	6.0			
Max Green Setting (Gmax), s		67.0		22.0	16.0	46.0			
Max Q Clear Time (g_c+I1), s		2.0		6.6	17.5	25.0			
Green Ext Time (p_c), s		8.4		0.8	0.0	7.7			

Intersection Summary		
HCM 6th Ctrl Delay	19.5	
HCM 6th LOS	B	

Notes

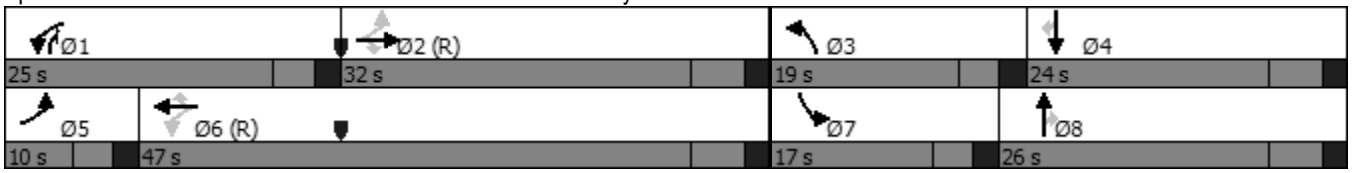
User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	550	176	204	700	105	118	341	259	170	342	60
Future Volume (vph)	40	550	176	204	700	105	118	341	259	170	342	60
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases	2		2	6		6			8			4
Detector Phase	5	2	2	1	6	6	3	8	1	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.0	24.0	10.0	24.0	24.0	10.0	24.0	10.0	10.0	24.0	24.0
Total Split (s)	10.0	32.0	32.0	25.0	47.0	47.0	19.0	26.0	25.0	17.0	24.0	24.0
Total Split (%)	10.0%	32.0%	32.0%	25.0%	47.0%	47.0%	19.0%	26.0%	25.0%	17.0%	24.0%	24.0%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	3.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
Total Lost Time (s)	4.5	5.5	5.5	4.5	5.5	5.5	4.5	5.5	4.5	4.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	Max	Max
Act Effct Green (s)	40.4	33.9	33.9	52.5	45.5	45.5	12.2	22.1	40.8	10.9	20.8	20.8
Actuated g/C Ratio	0.40	0.34	0.34	0.52	0.46	0.46	0.12	0.22	0.41	0.11	0.21	0.21
v/c Ratio	0.13	0.50	0.29	0.51	0.47	0.14	0.59	0.47	0.41	0.50	0.51	0.13

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.59
Intersection Signal Delay: 28.7
Intersection Capacity Utilization 59.2%
Analysis Period (min) 15

Splits and Phases: 10: Prairie Hawk Drive & Plum Creek Pkwy



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	43	598	191	222	761	114	128	371	282	185	372	65
v/c Ratio	0.13	0.50	0.29	0.51	0.47	0.14	0.59	0.47	0.41	0.50	0.51	0.13
Control Delay	13.8	28.8	4.9	24.0	30.1	8.7	52.6	36.6	15.8	46.4	38.5	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.8	28.8	4.9	24.0	30.1	8.7	52.6	36.6	15.8	46.4	38.5	0.6
Queue Length 50th (ft)	13	157	0	95	243	6	78	109	84	58	112	0
Queue Length 95th (ft)	30	228	47	172	304	45	136	158	142	91	162	0
Internal Link Dist (ft)		710			922			624			1039	
Turn Bay Length (ft)	230		230	230		230	230		230	230		250
Base Capacity (vph)	326	1198	665	530	1610	798	256	783	807	429	734	483
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.50	0.29	0.42	0.47	0.14	0.50	0.47	0.35	0.43	0.51	0.13

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	550	176	204	700	105	118	341	259	170	342	60
Future Volume (veh/h)	40	550	176	204	700	105	118	341	259	170	342	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	43	598	191	222	761	0	128	371	282	185	372	65
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	383	1516	676	454	1711		167	710	467	273	657	293
Arrive On Green	0.04	0.43	0.43	0.09	0.48	0.00	0.09	0.20	0.20	0.08	0.19	0.19
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	43	598	191	222	761	0	128	371	282	185	372	65
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1777	1585	1728	1777	1585
Q Serve(g_s), s	1.3	11.6	7.9	6.5	14.1	0.0	7.0	9.3	15.3	5.2	9.5	3.5
Cycle Q Clear(g_c), s	1.3	11.6	7.9	6.5	14.1	0.0	7.0	9.3	15.3	5.2	9.5	3.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	383	1516	676	454	1711		167	710	467	273	657	293
V/C Ratio(X)	0.11	0.39	0.28	0.49	0.44		0.77	0.52	0.60	0.68	0.57	0.22
Avail Cap(c_a), veh/h	410	1516	676	651	1711		258	729	475	432	657	293
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.0	19.8	18.7	13.4	17.1	0.0	44.2	35.8	30.3	44.8	37.1	34.6
Incr Delay (d2), s/veh	0.1	0.8	1.0	0.8	0.8	0.0	7.2	0.6	2.1	2.9	3.5	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	4.6	3.0	2.4	5.5	0.0	3.4	4.0	5.9	2.3	4.4	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.1	20.5	19.7	14.2	18.0	0.0	51.4	36.4	32.4	47.7	40.6	36.4
LnGrp LOS	B	C	B	B	B		D	D	C	D	D	D
Approach Vol, veh/h		832			983	A		781			622	
Approach Delay, s/veh		20.1			17.1			37.4			42.3	
Approach LOS		C			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	48.2	13.9	24.0	8.5	53.6	12.4	25.5
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	20.0	26.0	14.0	18.0	5.0	41.0	12.0	20.0
Max Q Clear Time (g_c+I1), s	8.5	13.6	9.0	11.5	3.3	16.1	7.2	17.3
Green Ext Time (p_c), s	0.4	3.5	0.1	1.3	0.0	5.0	0.2	0.9

Intersection Summary	
HCM 6th Ctrl Delay	27.7
HCM 6th LOS	C

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

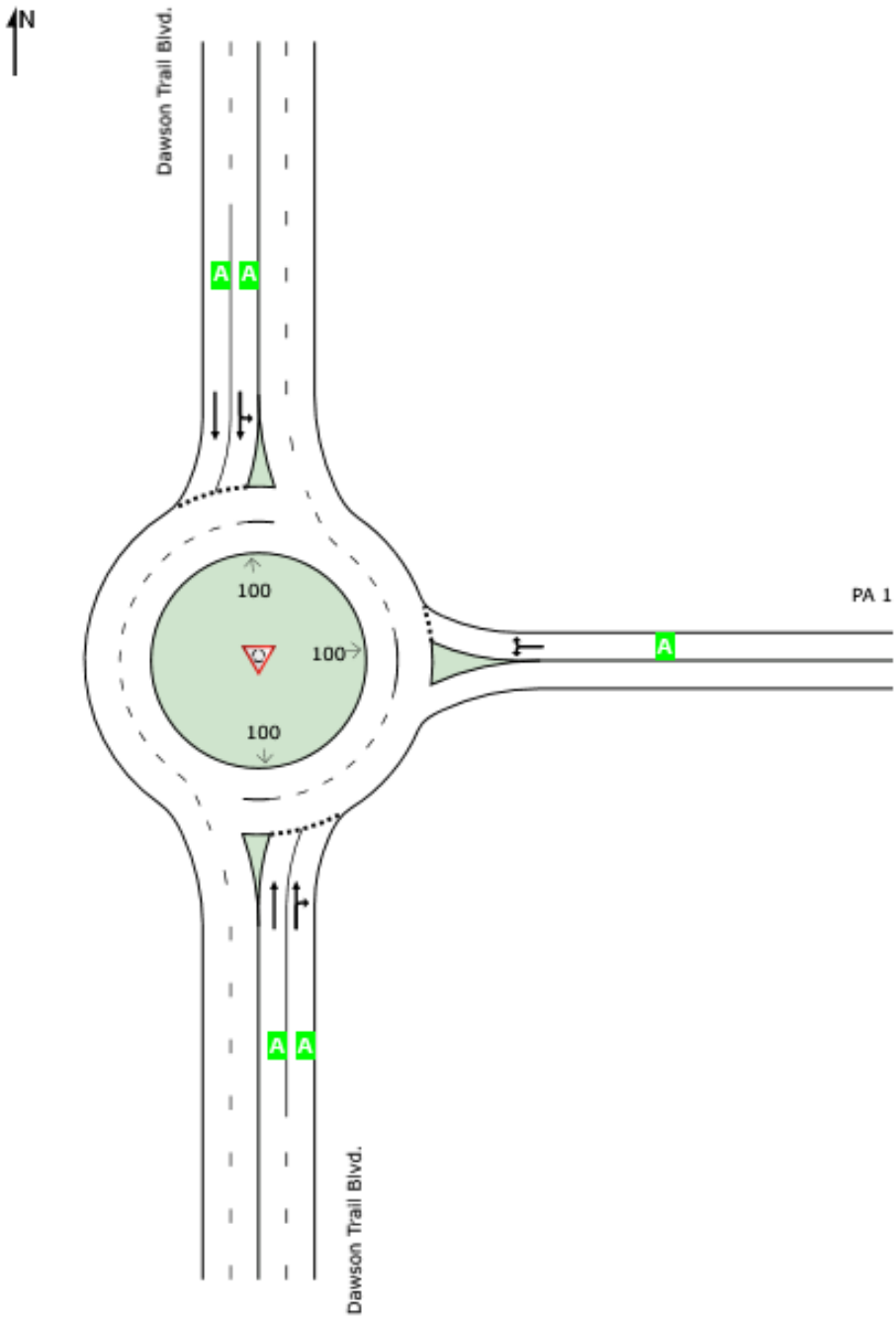
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 101 [Int#101_2030 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches			Intersection
	South	East	North	
LOS	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 8:58:31 AM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int#101.sip9

DELAY (CONTROL)

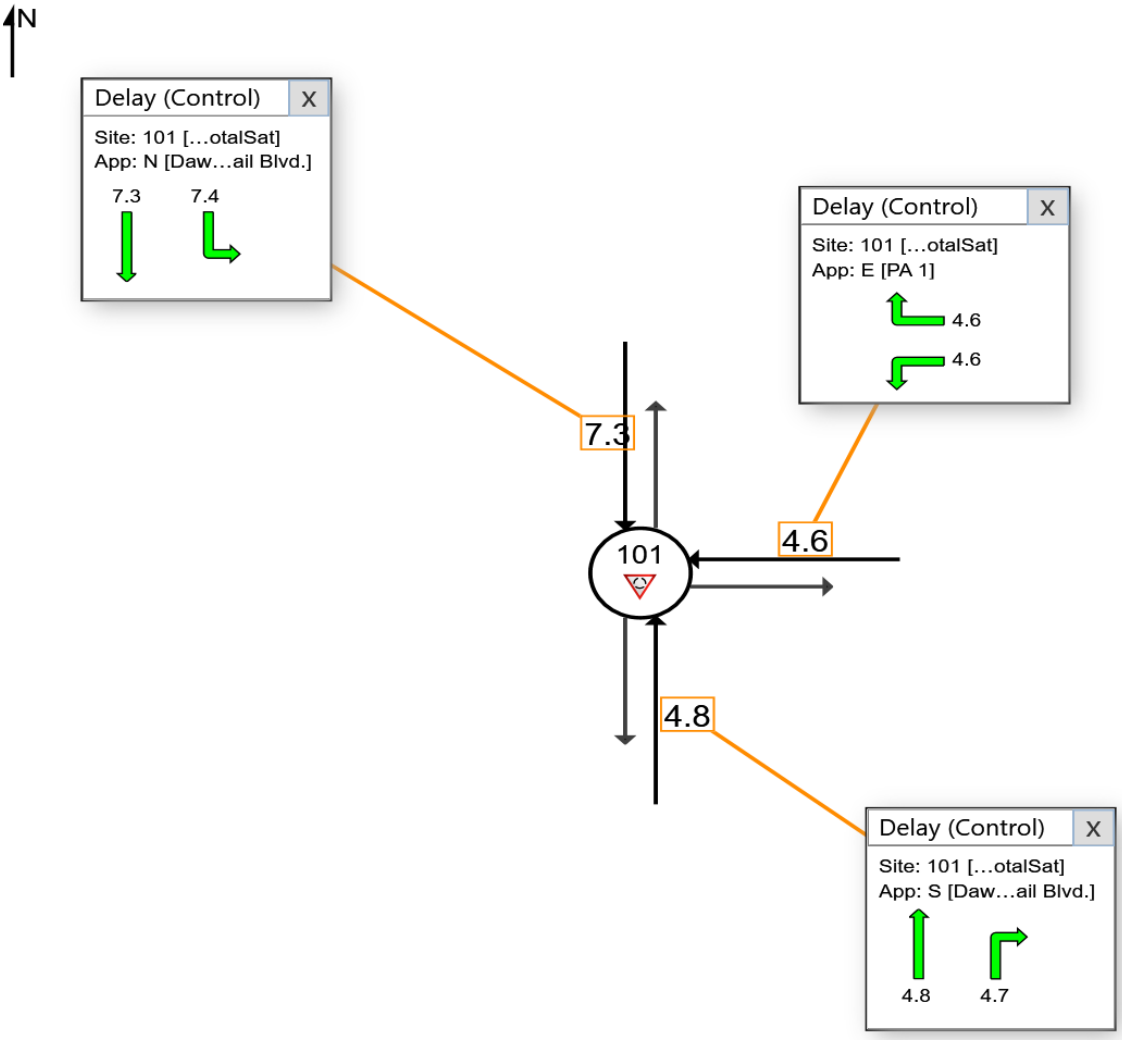
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 101 [Int#101_2030 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

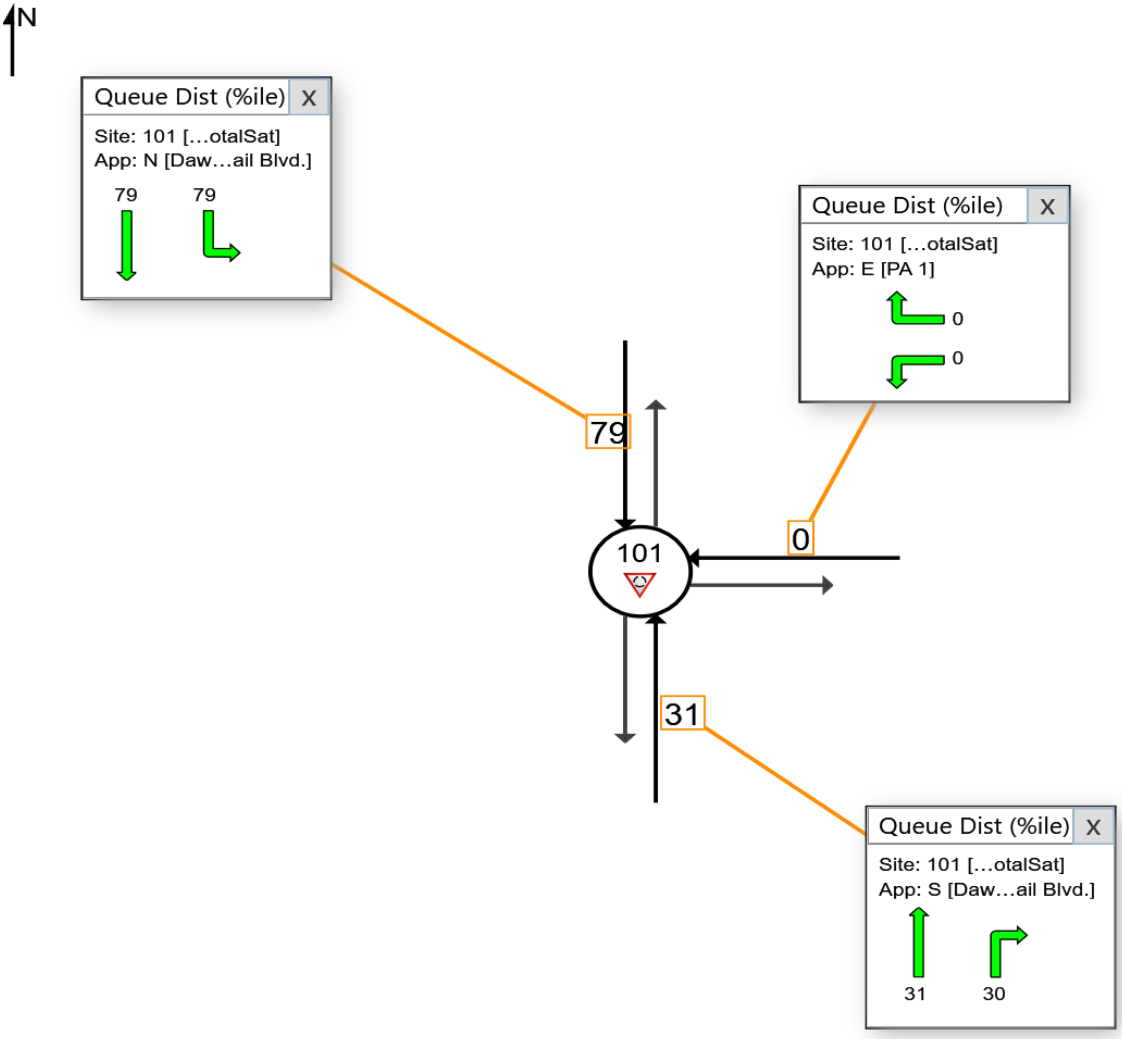
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 101 [Int#101_2030 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



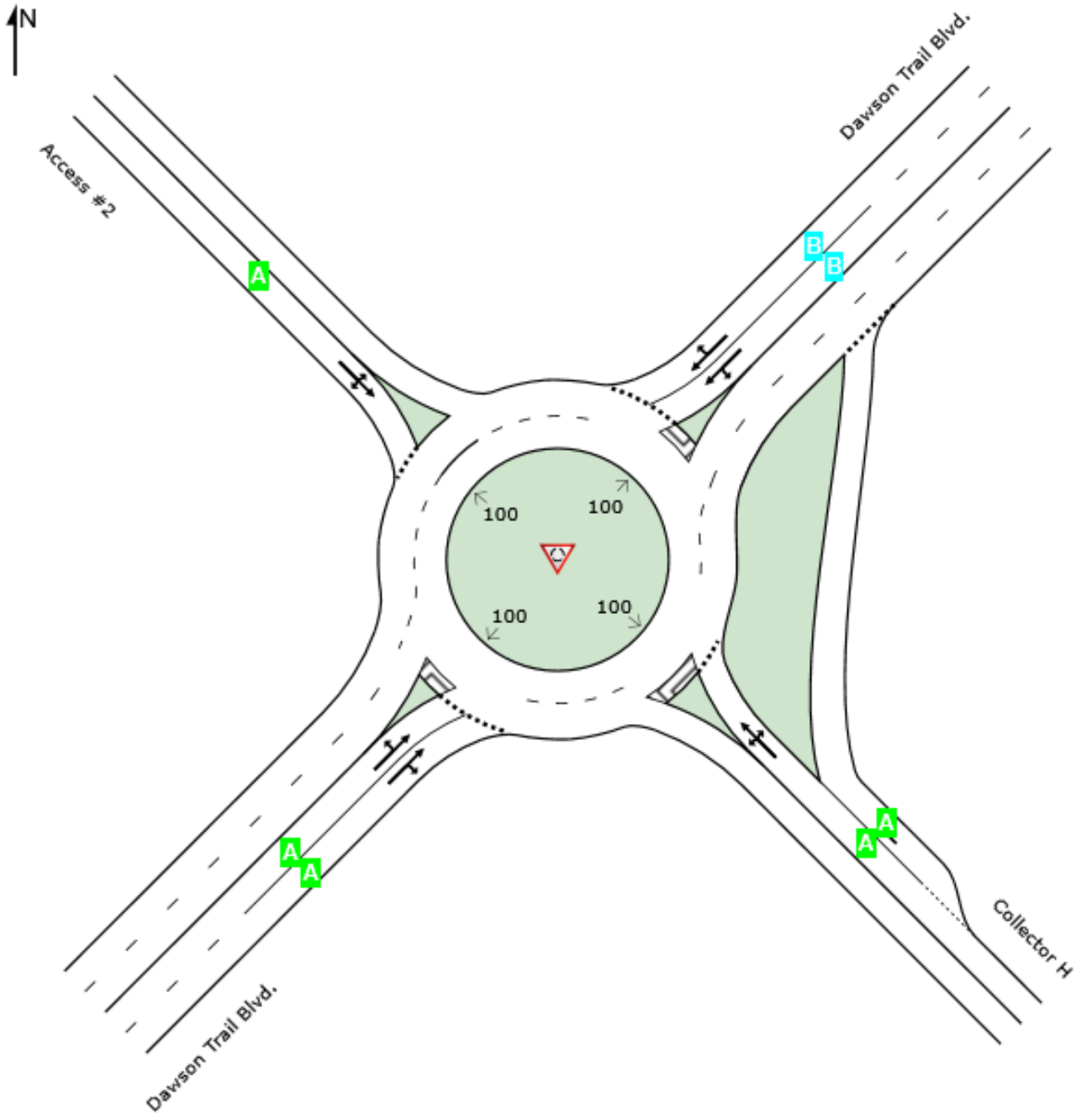
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 102 [Int #102_2030 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
LOS	A	B	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 9:08:08 AM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #102-mod.sip9

DELAY (CONTROL)

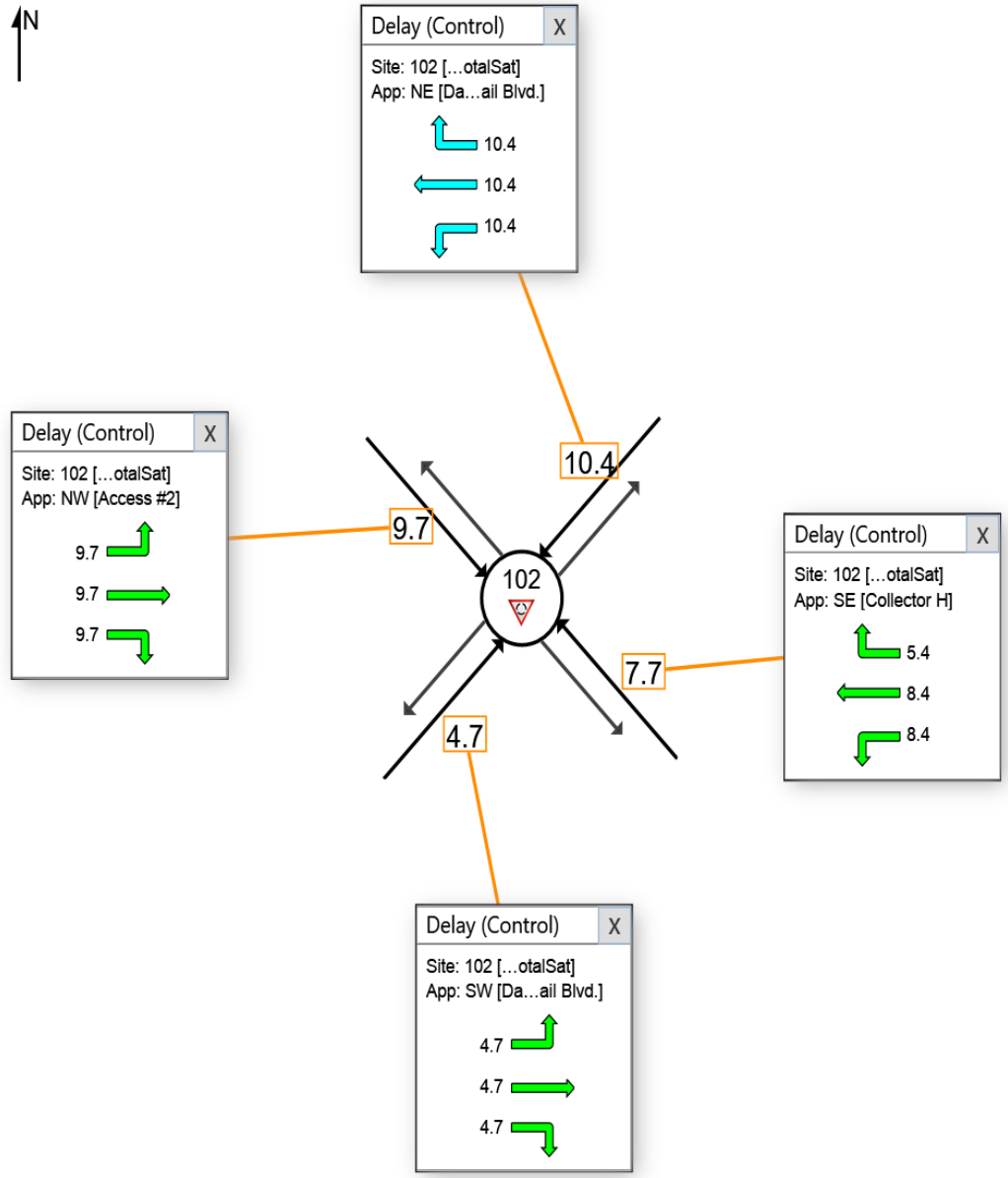
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 102 [Int #102_2030 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

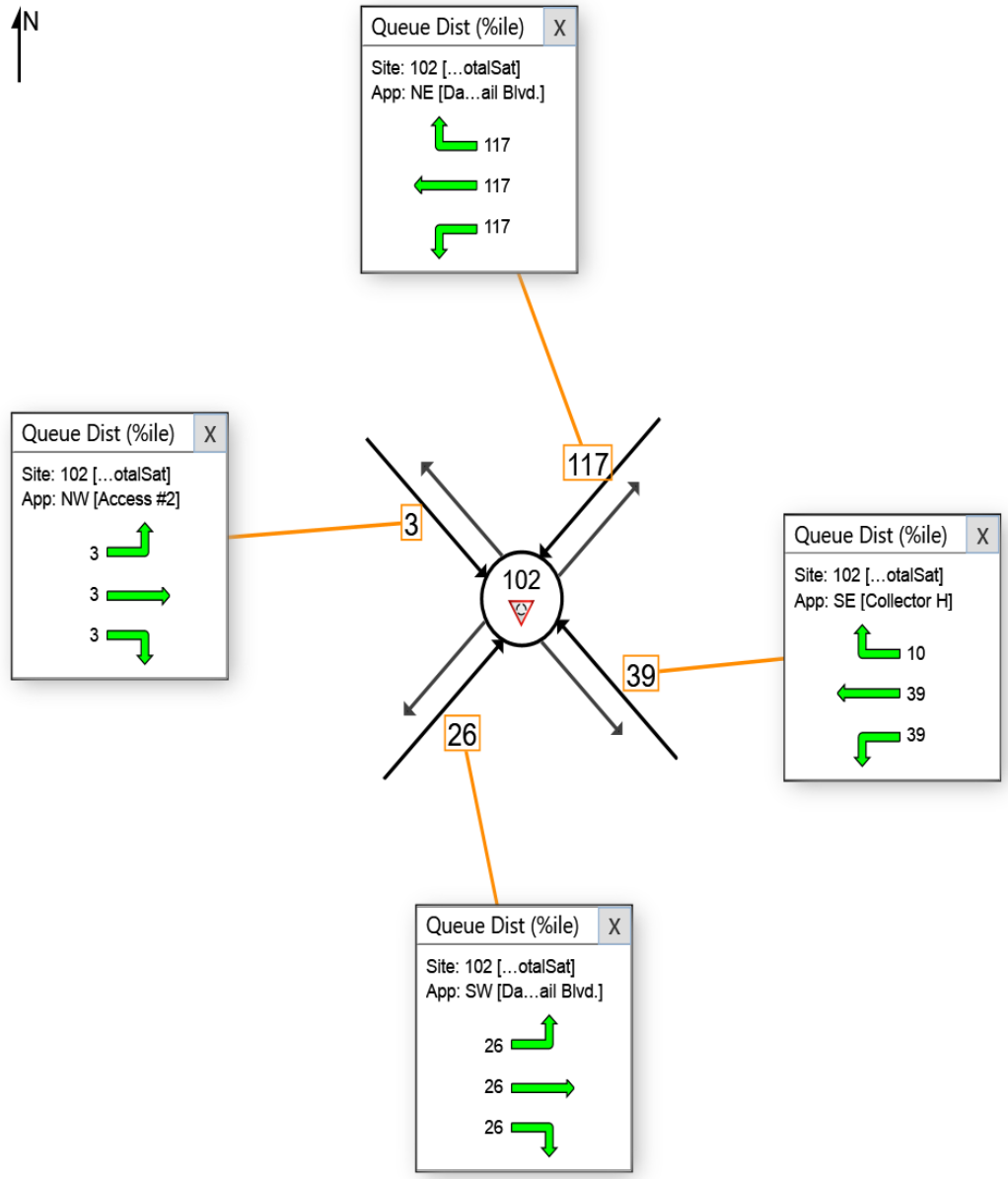
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 102 [Int #102_2030 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	44	0	0	90	40	460	251	87	1246	12
Future Vol, veh/h	0	0	44	0	0	90	40	460	251	87	1246	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	250	-	0	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	48	0	0	98	43	500	273	95	1354	13

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	684	-	-	250	1367	0	0	773	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	391	0	0	750	498	-	-	838	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	391	-	-	750	498	-	-	838	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.5	10.5	0.7	0.6
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	498	-	-	391	750	838	-	-
HCM Lane V/C Ratio	0.087	-	-	0.122	0.13	0.113	-	-
HCM Control Delay (s)	12.9	-	-	15.5	10.5	9.8	-	-
HCM Lane LOS	B	-	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.4	0.4	0.4	-	-

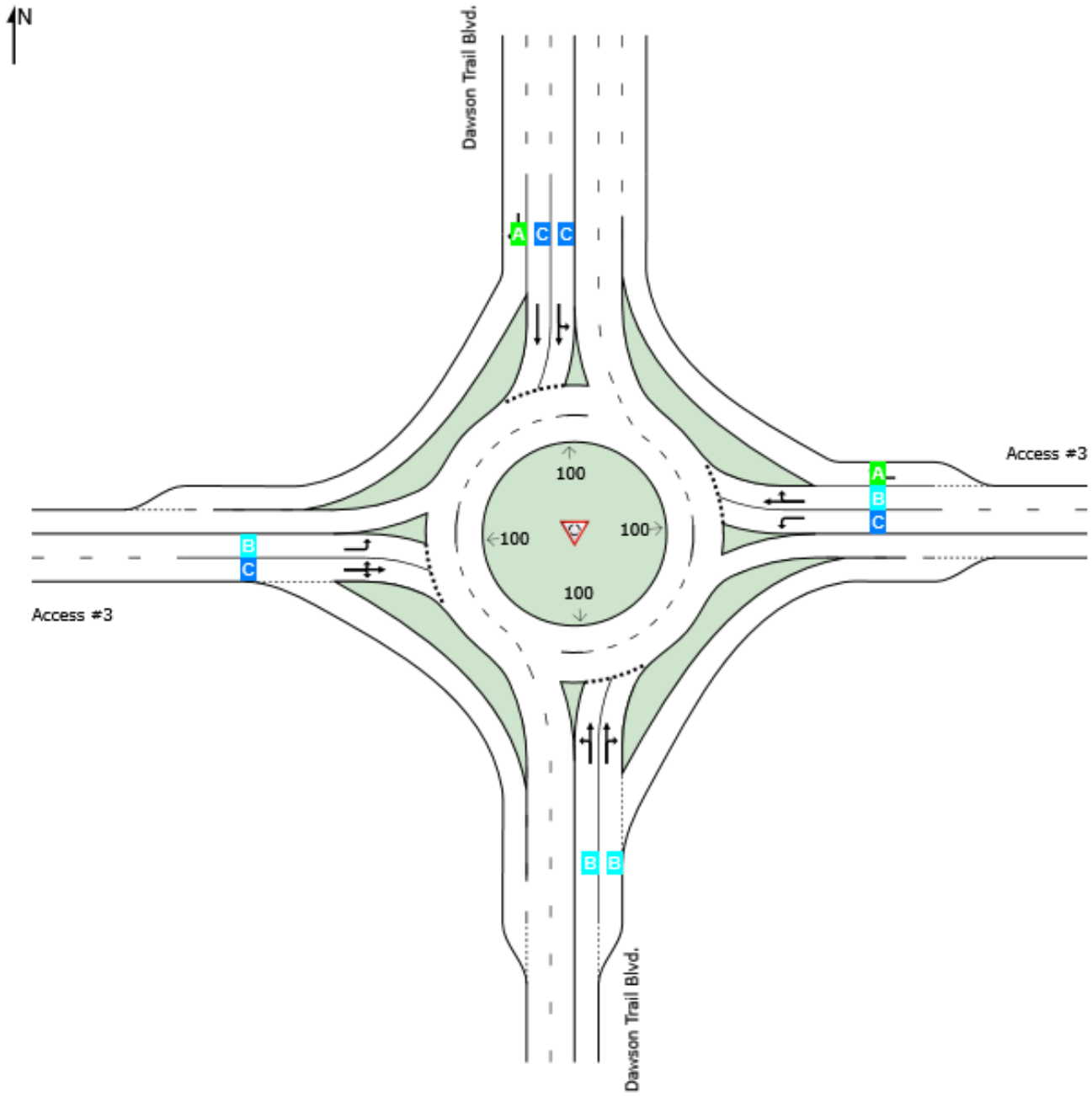
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 104 [Int#104_2030 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	B	B	C	C	B



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 9:28:38 AM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #104-mod.sip9

DELAY (CONTROL)

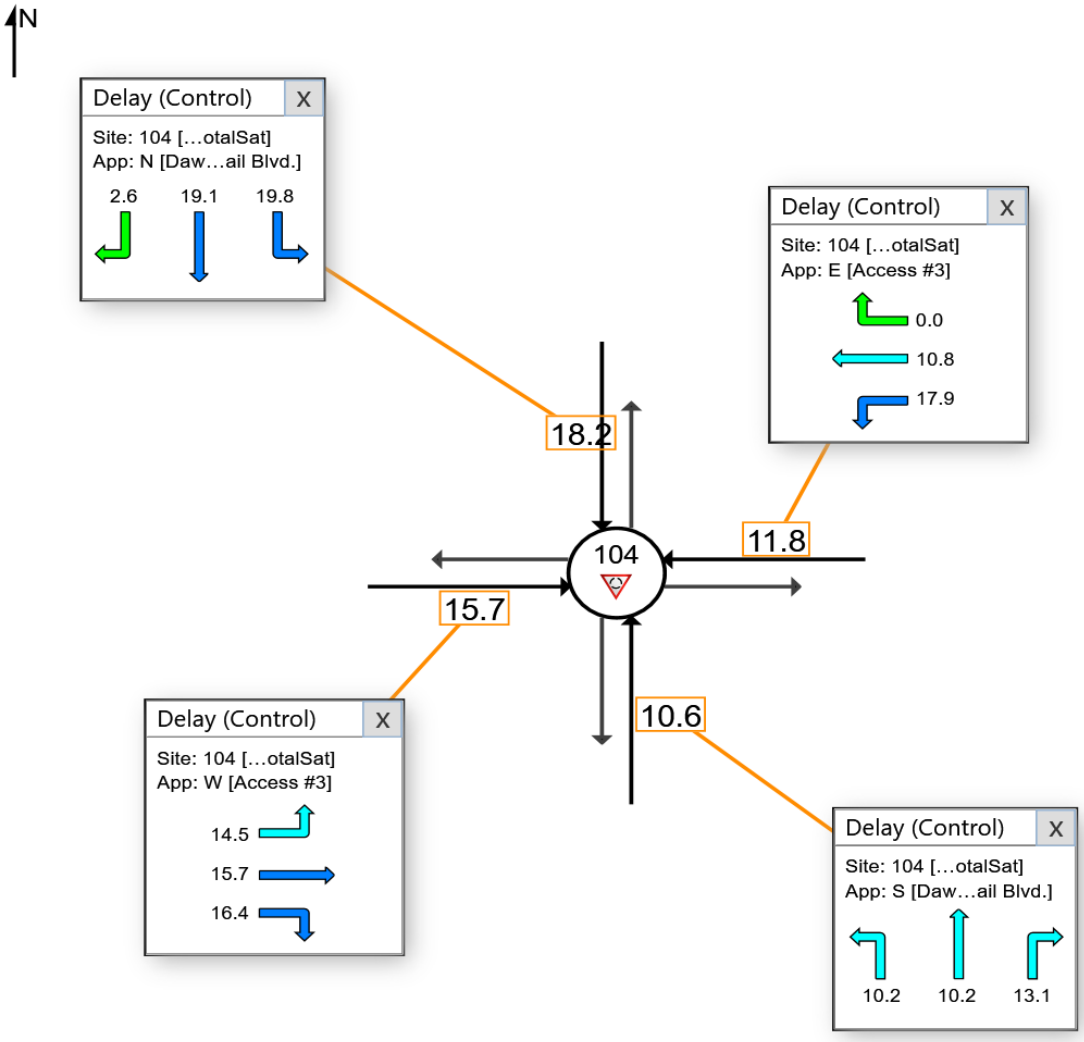
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 104 [Int#104_2030 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

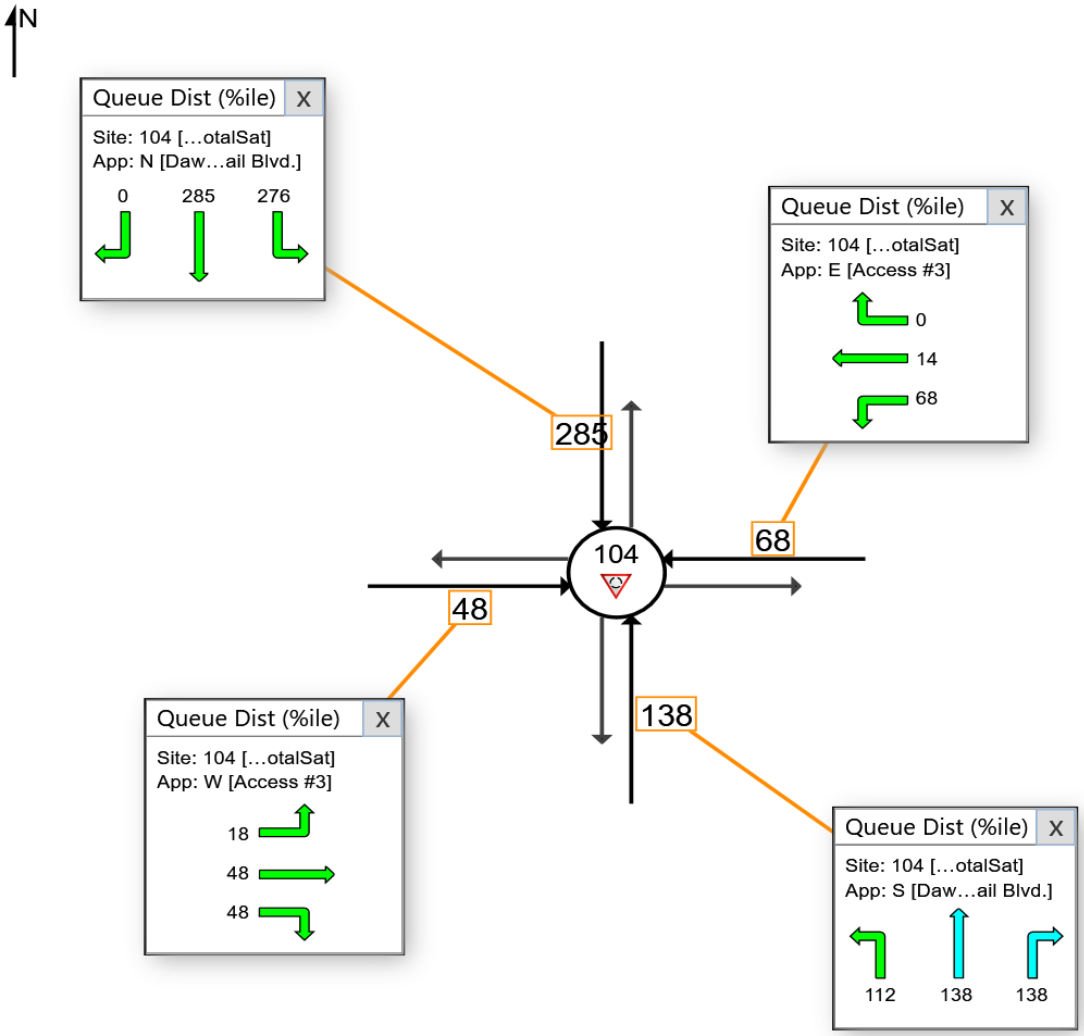
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 104 [Int#104_2030 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



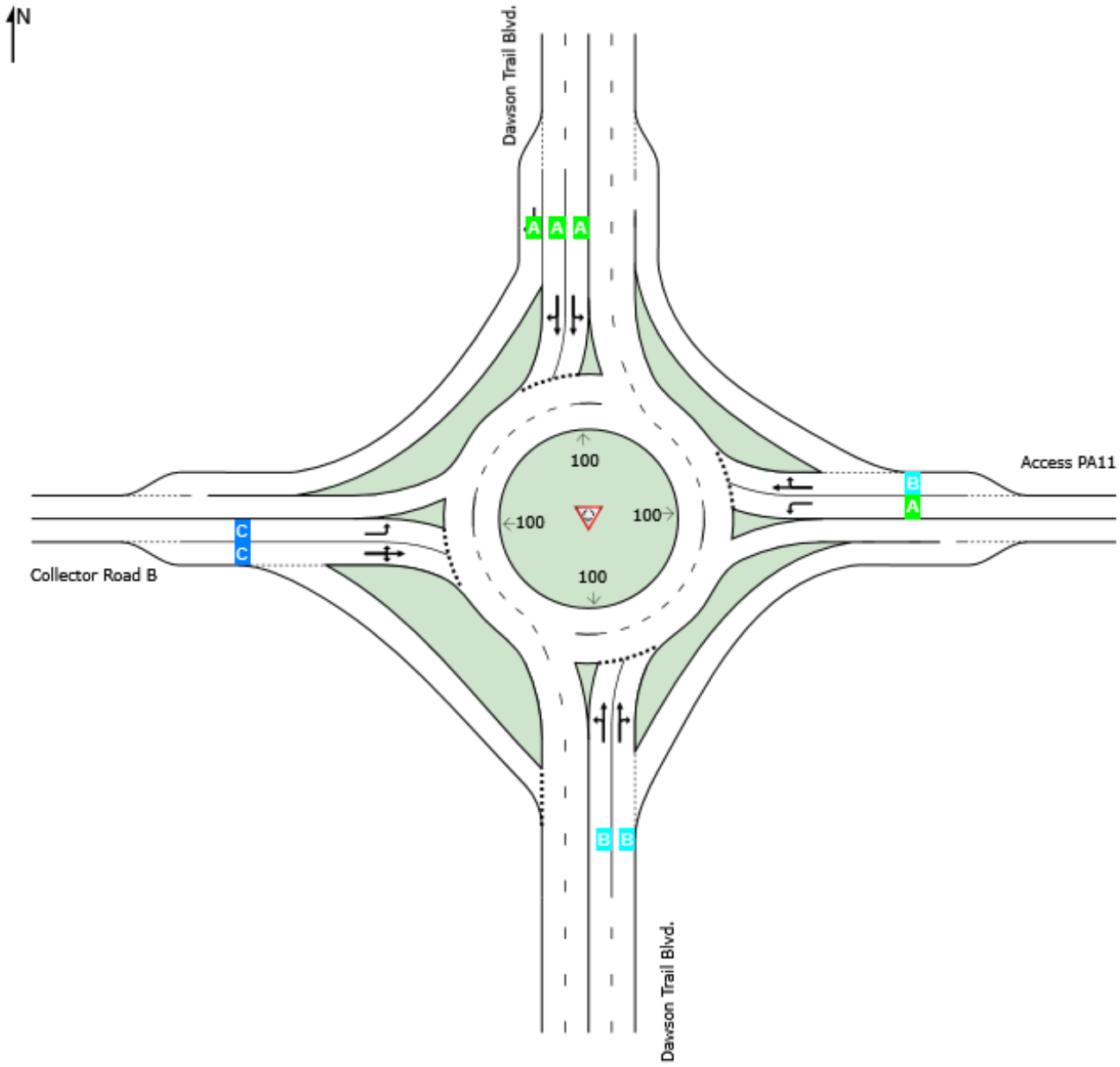
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 105 [Int#105_2030 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	B	B	A	C	B



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 9:36:25 AM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #105-mod.sip9

DELAY (CONTROL)

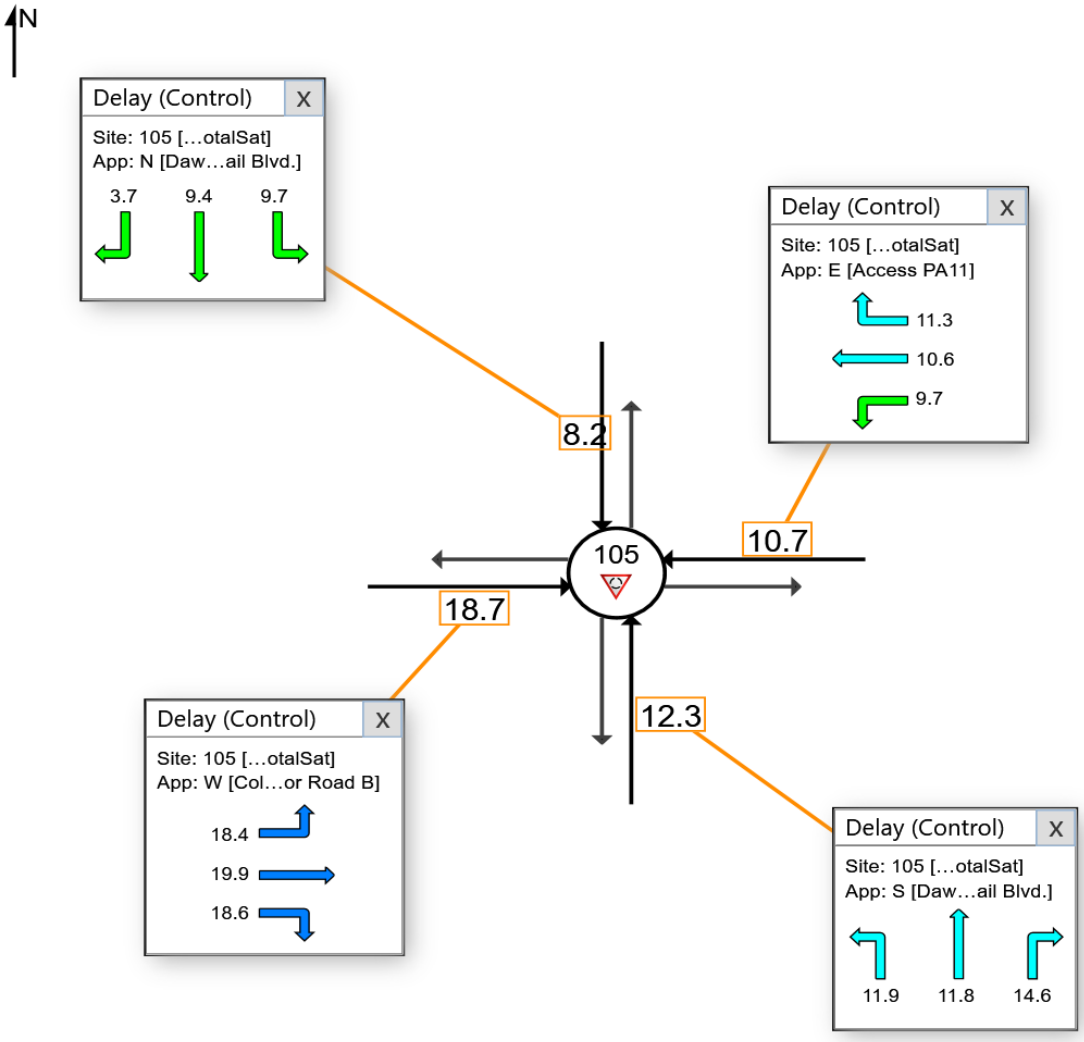
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 105 [Int#105_2030 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

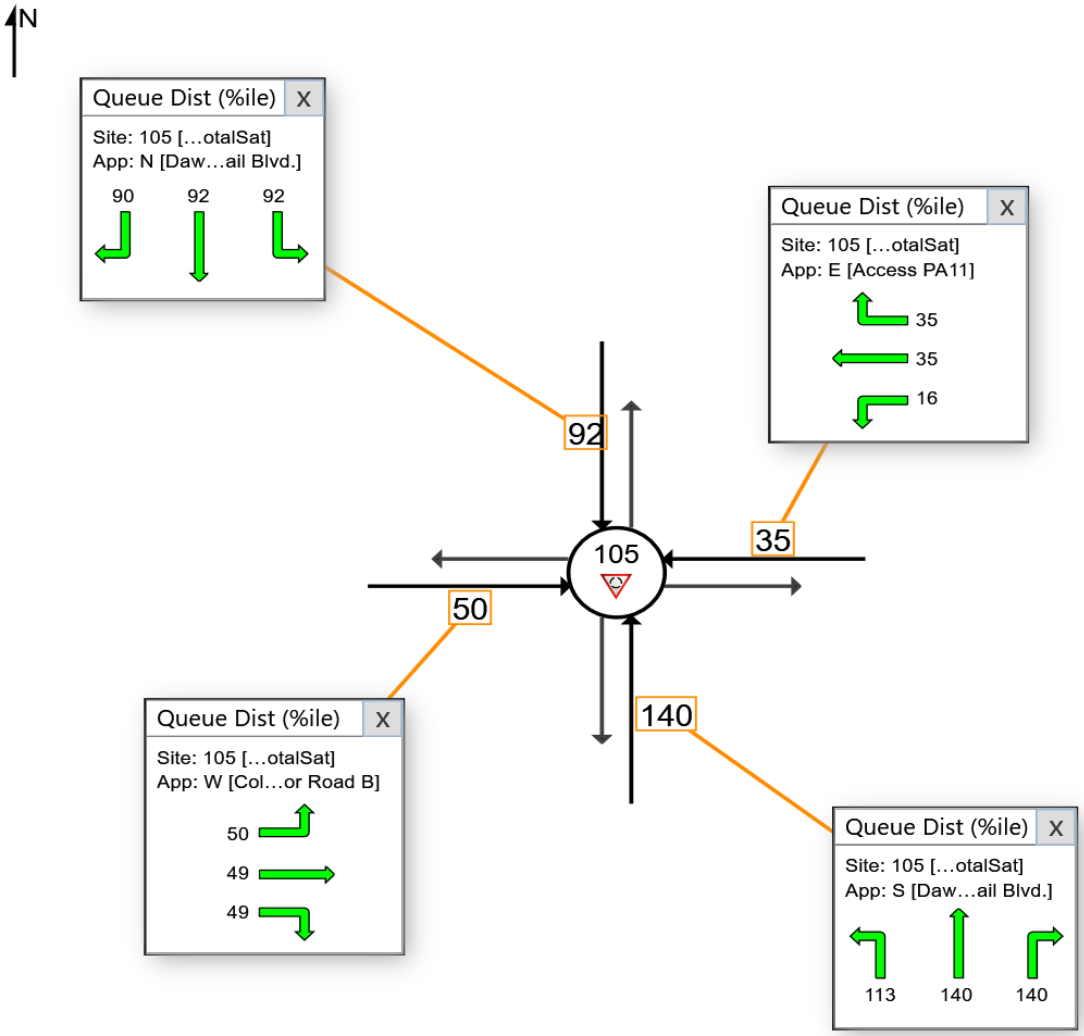
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 105 [Int#105_2030 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



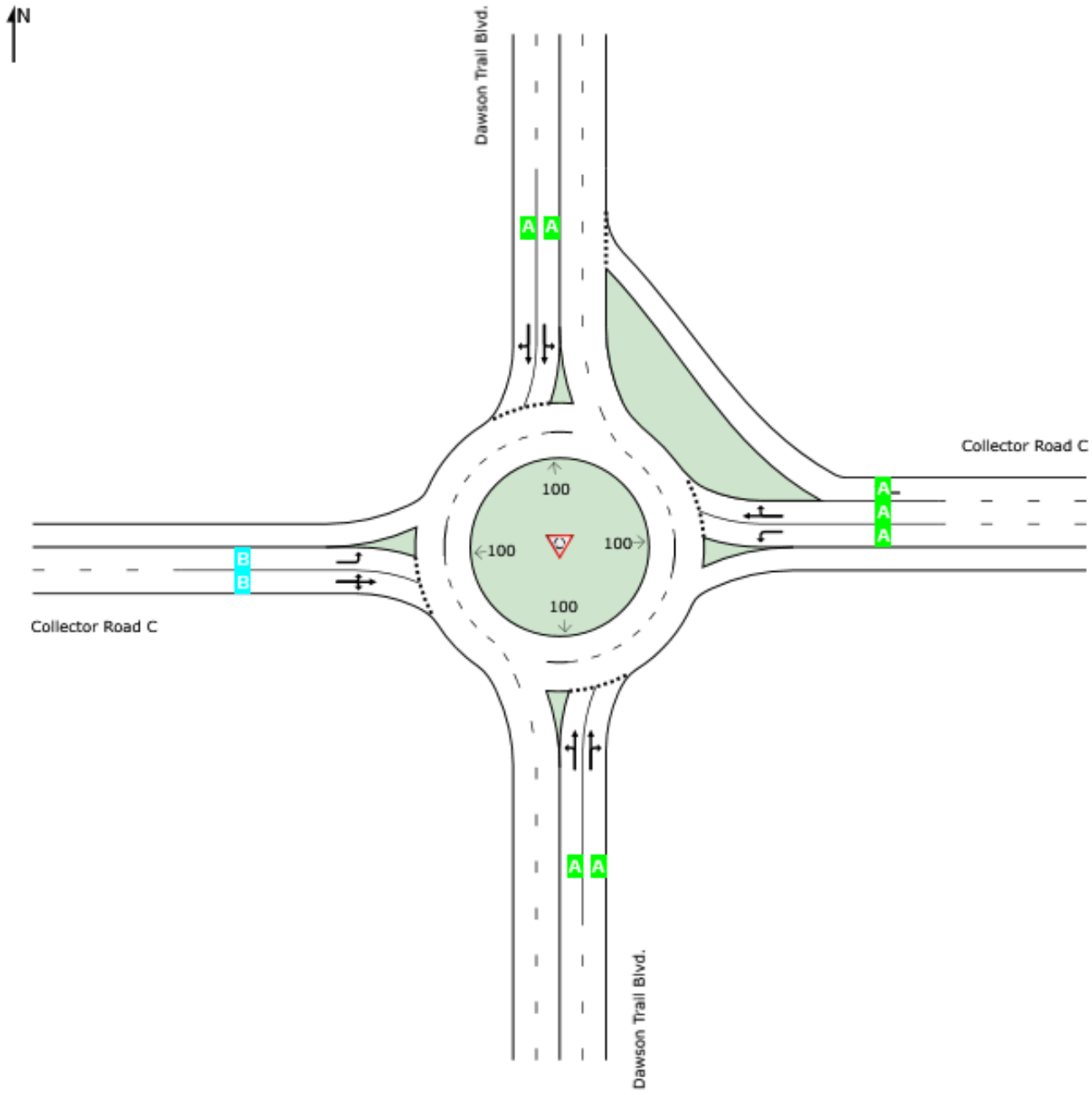
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 106 [Int#106_2030 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	A	A	A	B	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 9:50:33 AM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int#106-mod.sip9

DELAY (CONTROL)

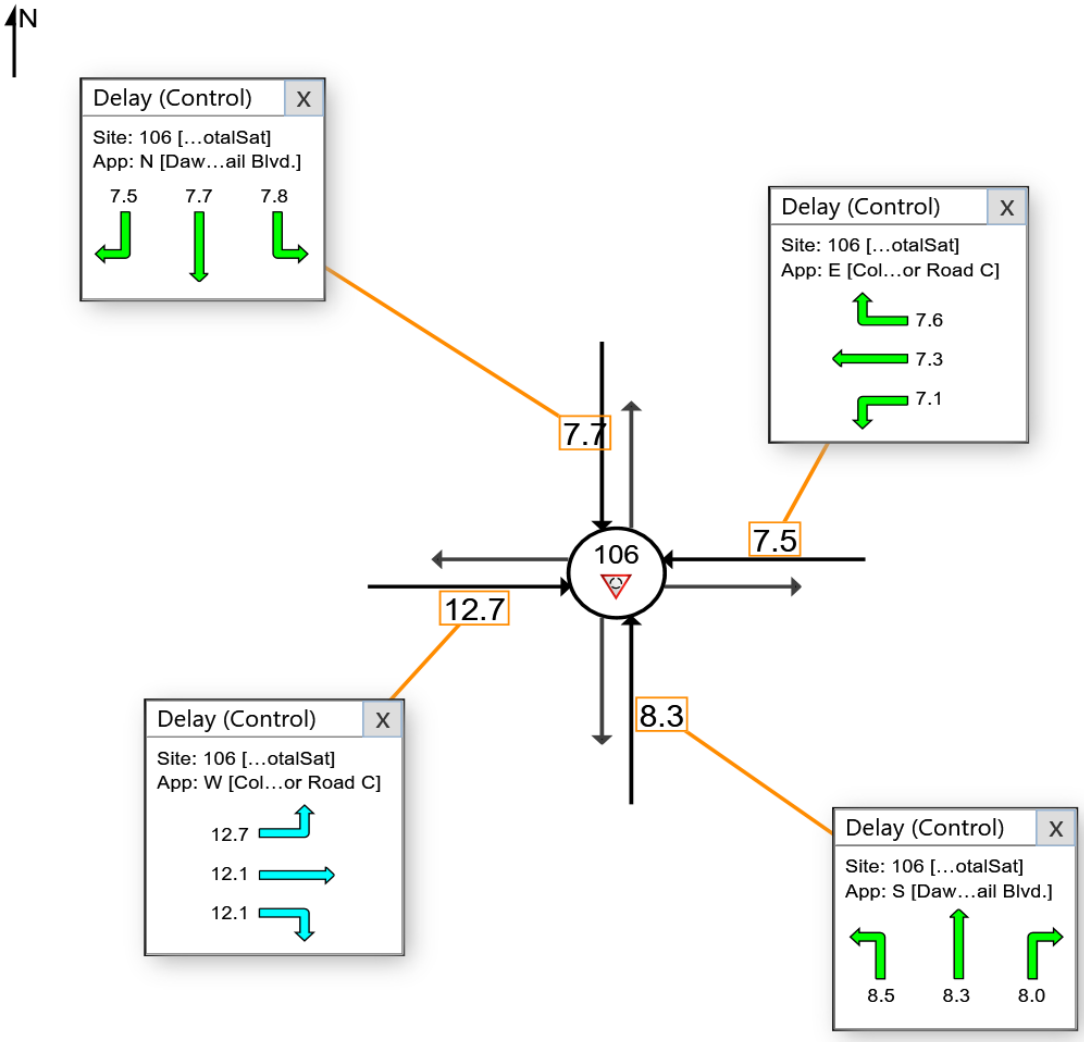
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 106 [Int#106_2030 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

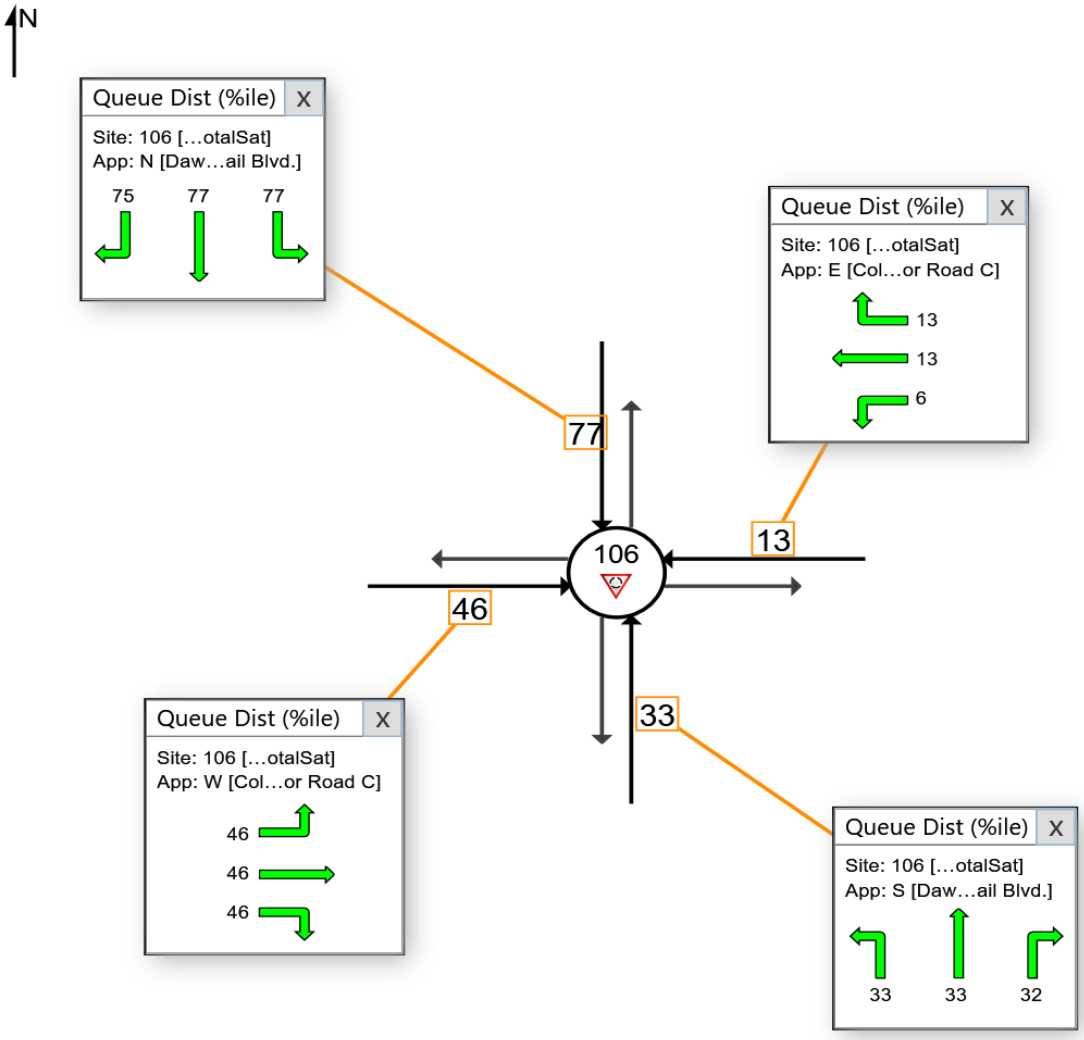
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 106 [Int#106_2030 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popups. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



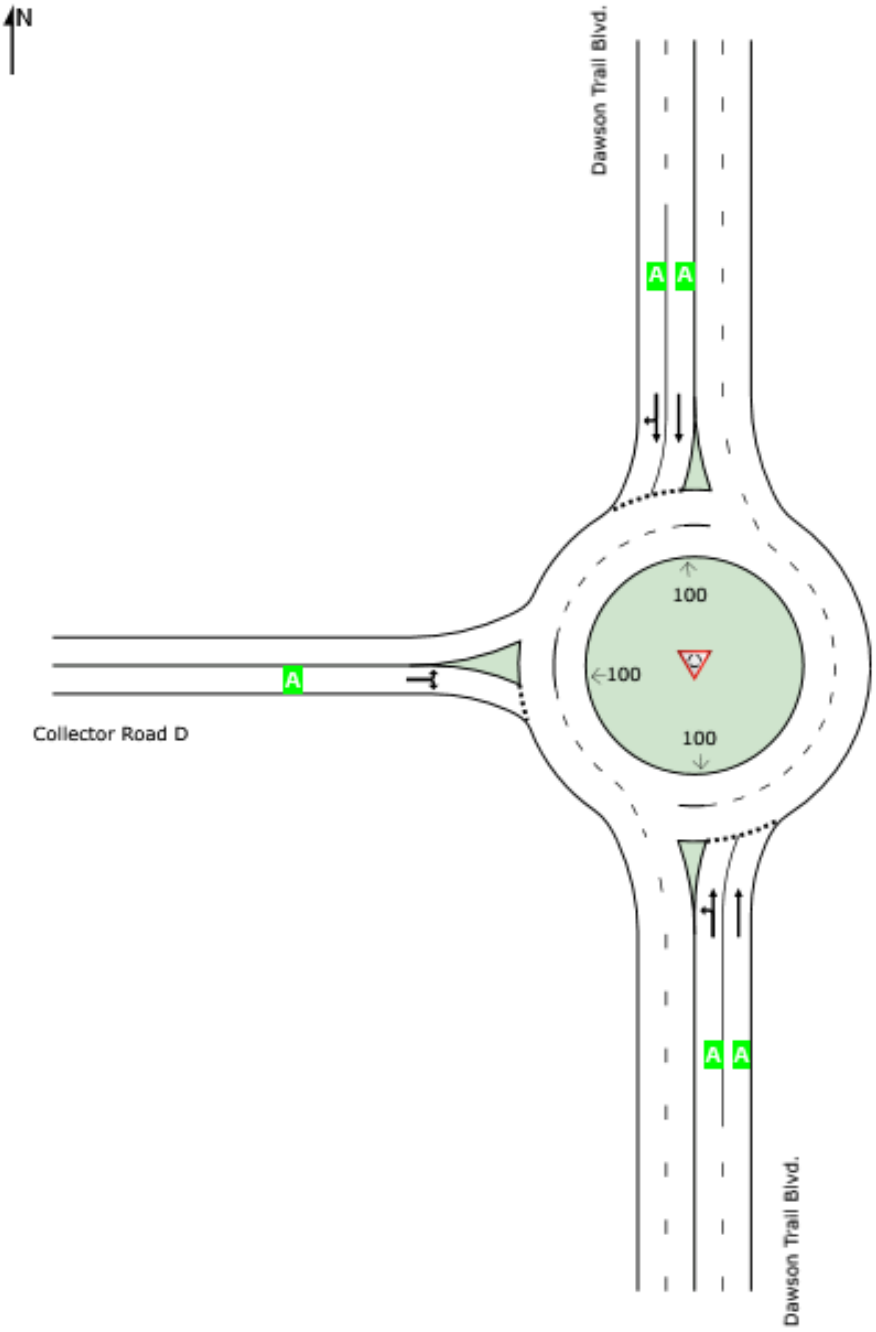
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 107 [Int#107_2030 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches			Intersection
	South	North	West	
LOS	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 10:01:01 AM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int#107.sip9

DELAY (CONTROL)

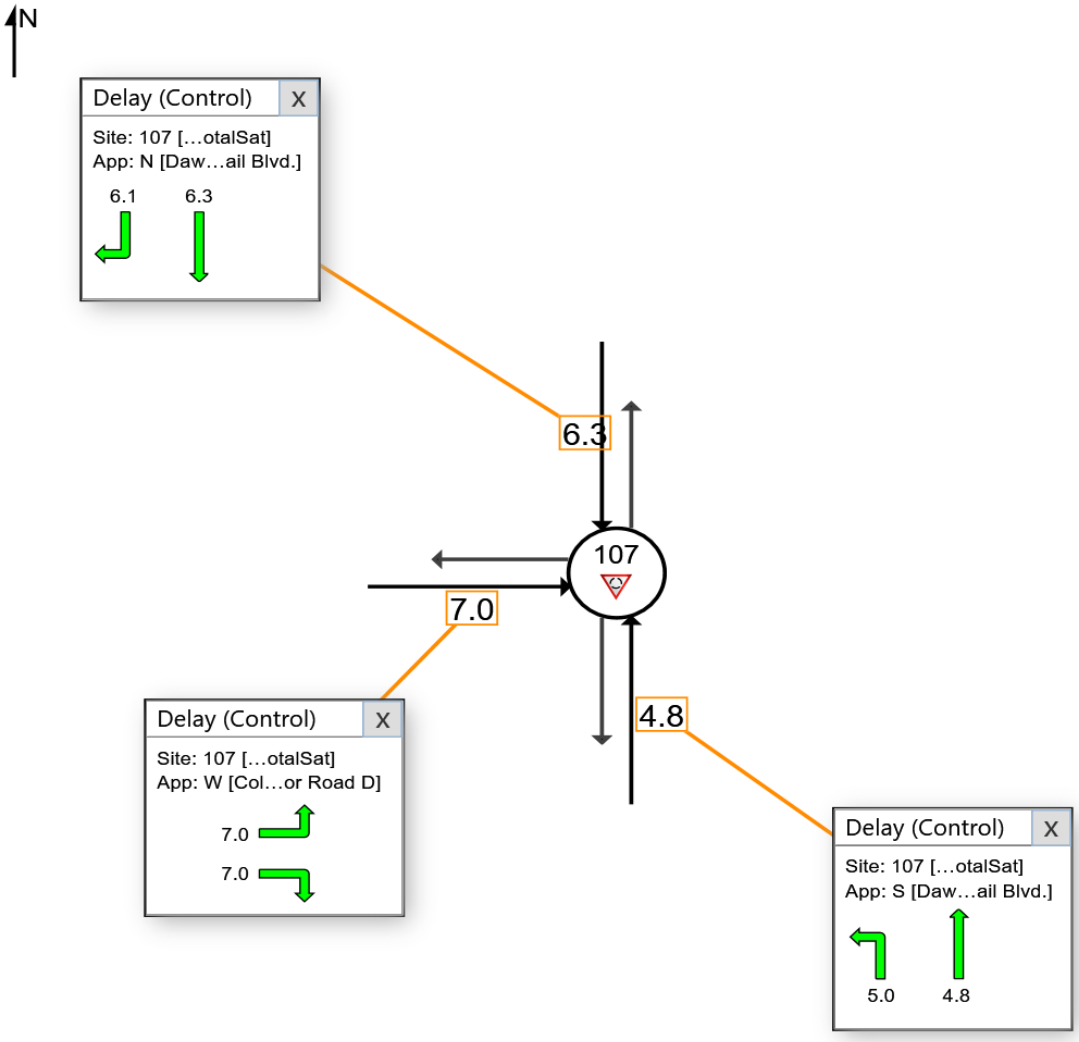
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 107 [Int#107_2030 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

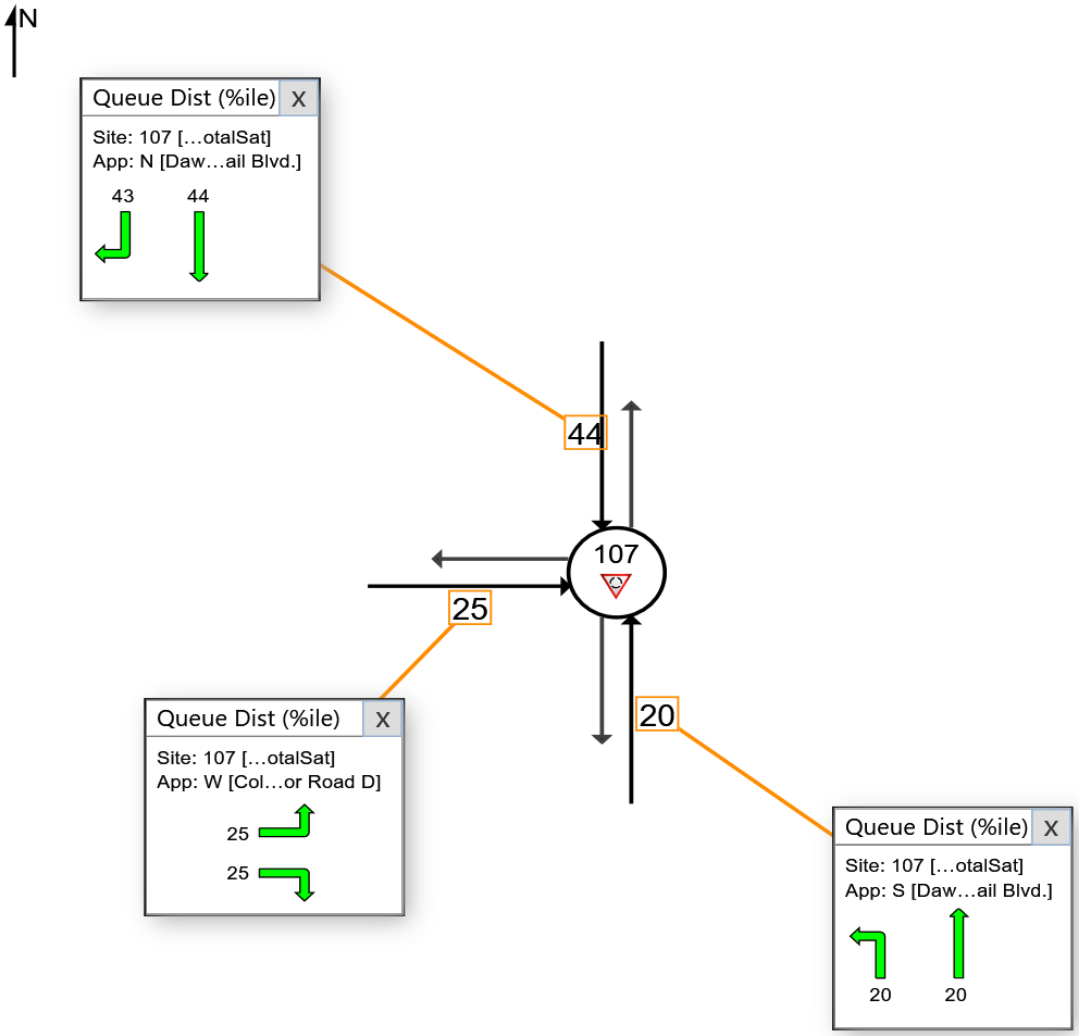
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 107 [Int#107_2030 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

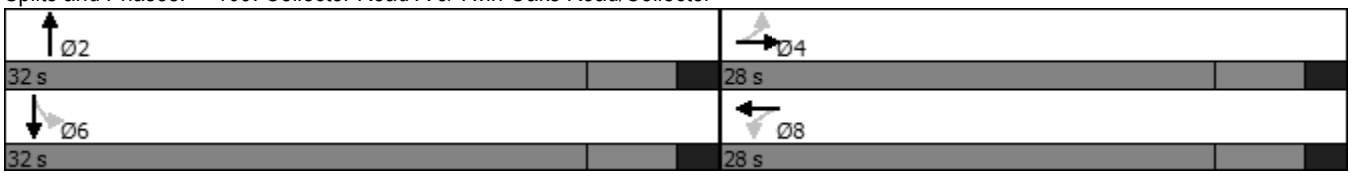
Close All Popups

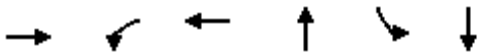


Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	12	5	167	5	451	157	595
Future Volume (vph)	12	5	167	5	451	157	595
Turn Type	Perm	NA	Perm	NA	NA	Perm	NA
Protected Phases		4		8	2		6
Permitted Phases	4		8			6	
Detector Phase	4	4	8	8	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	10.0	10.0	10.0
Minimum Split (s)	28.0	28.0	28.0	28.0	28.0	28.0	28.0
Total Split (s)	28.0	28.0	28.0	28.0	32.0	32.0	32.0
Total Split (%)	46.7%	46.7%	46.7%	46.7%	53.3%	53.3%	53.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	None	None	None	None	Min	Min	Min
Act Effct Green (s)		10.9	11.1	11.1	22.2	22.2	22.2
Actuated g/C Ratio		0.27	0.27	0.27	0.54	0.54	0.54
v/c Ratio		0.05	0.49	0.22	0.31	0.39	0.35

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 41.1
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.49
Intersection Signal Delay: 9.6
Intersection Capacity Utilization 51.4%
Analysis Period (min) 15

Splits and Phases: 109: Collector Road A & Twin Oaks Road/Collector





Lane Group	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	19	182	110	578	171	675
v/c Ratio	0.05	0.49	0.22	0.31	0.39	0.35
Control Delay	12.5	18.4	5.1	7.8	12.9	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.5	18.4	5.1	7.8	12.9	8.6
Queue Length 50th (ft)	3	32	1	38	25	49
Queue Length 95th (ft)	16	94	28	87	85	108
Internal Link Dist (ft)	286		161	1511		693
Turn Bay Length (ft)		200			250	
Base Capacity (vph)	795	781	944	2316	537	2344
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.23	0.12	0.25	0.32	0.29

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	5	1	167	5	97	0	451	81	157	595	26
Future Volume (veh/h)	12	5	1	167	5	97	0	451	81	157	595	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	0	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	13	5	1	182	5	105	0	490	88	171	647	28
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	0	2	2	2	2	2
Cap, veh/h	296	91	12	491	13	277	0	1402	250	513	1615	70
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.00	0.47	0.47	0.47	0.47	0.47
Sat Flow, veh/h	646	503	64	1410	73	1524	0	3106	538	836	3470	150
Grp Volume(v), veh/h	19	0	0	182	0	110	0	288	290	171	331	344
Grp Sat Flow(s),veh/h/ln	1212	0	0	1410	0	1596	0	1777	1773	836	1777	1843
Q Serve(g_s), s	0.0	0.0	0.0	1.4	0.0	2.1	0.0	3.5	3.6	5.6	4.2	4.2
Cycle Q Clear(g_c), s	2.1	0.0	0.0	3.5	0.0	2.1	0.0	3.5	3.6	9.2	4.2	4.2
Prop In Lane	0.68		0.05	1.00		0.95	0.00		0.30	1.00		0.08
Lane Grp Cap(c), veh/h	399	0	0	491	0	290	0	827	825	513	827	858
V/C Ratio(X)	0.05	0.00	0.00	0.37	0.00	0.38	0.00	0.35	0.35	0.33	0.40	0.40
Avail Cap(c_a), veh/h	1056	0	0	1146	0	1032	0	1358	1355	763	1358	1409
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.5	0.0	0.0	12.7	0.0	12.2	0.0	5.8	5.8	8.7	6.0	6.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.5	0.0	0.8	0.0	0.3	0.3	0.4	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	1.0	0.0	0.6	0.0	0.8	0.8	0.7	0.9	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.6	0.0	0.0	13.2	0.0	13.0	0.0	6.1	6.1	9.1	6.3	6.3
LnGrp LOS	B	A	A	B	A	B	A	A	A	A	A	A
Approach Vol, veh/h		19			292			578			846	
Approach Delay, s/veh		11.6			13.1			6.1			6.9	
Approach LOS		B			B			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		21.8		12.2		21.8		12.2				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		26.0		22.0		26.0		22.0				
Max Q Clear Time (g_c+I1), s		5.6		4.1		11.2		5.5				
Green Ext Time (p_c), s		3.5		0.0		4.7		1.0				

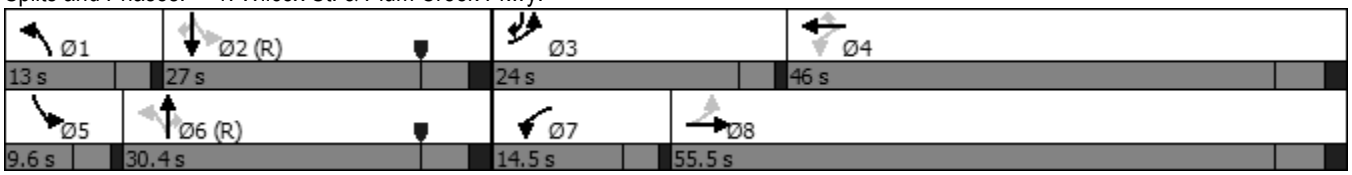
Intersection Summary												
HCM 6th Ctrl Delay			7.7									
HCM 6th LOS			A									

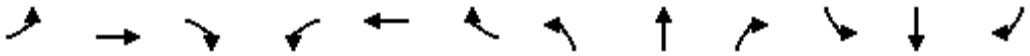
Intersection Capacity Worksheets: 2040 Background + Full Buildout Project

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	274	755	285	152	1095	125	370	233	157	70	181	187
Future Volume (vph)	274	755	285	152	1095	125	370	233	157	70	181	187
Turn Type	pm+pt	NA	Free	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+ov
Protected Phases	3	8		7	4		1	6		5	2	3
Permitted Phases	8		Free	4		4	6		6	2		2
Detector Phase	3	8		7	4	4	1	6	6	5	2	3
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	5.0	10.0	10.0	5.0	4.0	5.0
Minimum Split (s)	9.5	31.0		14.5	31.0	31.0	9.5	16.0	16.0	9.5	10.0	9.5
Total Split (s)	24.0	55.5		14.5	46.0	46.0	13.0	30.4	30.4	9.6	27.0	24.0
Total Split (%)	21.8%	50.5%		13.2%	41.8%	41.8%	11.8%	27.6%	27.6%	8.7%	24.5%	21.8%
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	3.0
All-Red Time (s)	1.0	2.0		1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	None
Act Effct Green (s)	63.4	47.8	110.0	52.8	40.7	40.7	37.7	28.3	28.3	30.5	22.9	46.0
Actuated g/C Ratio	0.58	0.43	1.00	0.48	0.37	0.37	0.34	0.26	0.26	0.28	0.21	0.42
v/c Ratio	0.89	0.55	0.20	0.45	0.91	0.20	0.59	0.53	0.32	0.25	0.52	0.30

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 35 (32%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 27.5
Intersection Capacity Utilization 82.2%
Analysis Period (min) 15

Splits and Phases: 1: Wilcox St. & Plum Creek Pkwy.





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	298	821	310	165	1190	136	402	253	171	76	197	203
v/c Ratio	0.89	0.55	0.20	0.45	0.91	0.20	0.59	0.53	0.32	0.25	0.52	0.30
Control Delay	55.6	24.5	0.3	12.0	30.8	3.5	31.8	41.9	7.2	28.8	45.5	15.0
Queue Delay	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.6	24.5	0.3	12.0	32.0	3.5	31.8	41.9	7.2	28.8	45.5	15.0
Queue Length 50th (ft)	150	213	0	22	234	1	110	162	0	38	127	59
Queue Length 95th (ft)	#280	273	0	m59	#538	m20	153	250	55	73	204	112
Internal Link Dist (ft)		553			473			812			658	
Turn Bay Length (ft)	280		250	185			190		195	130		130
Base Capacity (vph)	376	1553	1538	376	1318	683	683	475	530	304	376	721
Starvation Cap Reductn	0	0	0	0	35	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.53	0.20	0.44	0.93	0.20	0.59	0.53	0.32	0.25	0.52	0.28

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Twin Mesa Metropolitan District New Service Plan
SV2023-003
Planning Commission Supplemental Memo Page 790 of 1222

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	274	755	285	152	1095	125	370	233	157	70	181	187
Future Volume (veh/h)	274	755	285	152	1095	125	370	233	157	70	181	187
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1870	1870	1870	1856	1856	1856	1826	1826	1826
Adj Flow Rate, veh/h	298	821	0	165	1190	136	402	253	171	76	197	203
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	5	5	5	2	2	2	3	3	3	5	5	5
Cap, veh/h	326	1384		368	1245	555	707	526	446	305	451	597
Arrive On Green	0.14	0.40	0.00	0.18	0.70	0.70	0.08	0.28	0.28	0.05	0.25	0.25
Sat Flow, veh/h	1739	3469	1547	1781	3554	1585	3428	1856	1572	1739	1826	1547
Grp Volume(v), veh/h	298	821	0	165	1190	136	402	253	171	76	197	203
Grp Sat Flow(s),veh/h/ln	1739	1735	1547	1781	1777	1585	1714	1856	1572	1739	1826	1547
Q Serve(g_s), s	13.1	20.5	0.0	6.3	33.4	3.4	9.0	12.4	9.6	3.6	10.0	10.2
Cycle Q Clear(g_c), s	13.1	20.5	0.0	6.3	33.4	3.4	9.0	12.4	9.6	3.6	10.0	10.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	326	1384		368	1245	555	707	526	446	305	451	597
V/C Ratio(X)	0.91	0.59		0.45	0.96	0.24	0.57	0.48	0.38	0.25	0.44	0.34
Avail Cap(c_a), veh/h	401	1561		377	1292	576	707	526	446	314	451	597
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.68	0.68	0.68	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.1	26.0	0.0	18.3	15.7	11.2	28.0	32.7	31.7	29.1	34.9	23.9
Incr Delay (d2), s/veh	20.4	0.5	0.0	0.2	11.7	0.2	0.7	3.1	2.5	0.2	3.1	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	8.3	0.0	2.3	7.4	1.1	4.0	6.1	3.9	1.5	4.9	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.4	26.5	0.0	18.5	27.4	11.4	28.7	35.8	34.2	29.3	38.0	25.4
LnGrp LOS	D	C		B	C	B	C	D	C	C	D	C
Approach Vol, veh/h		1119	A		1491			826			476	
Approach Delay, s/veh		32.6			25.0			32.0			31.2	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	33.2	19.3	44.5	9.0	37.2	13.9	49.9
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	9.0	21.0	20.0	40.0	5.6	24.4	10.5	49.5
Max Q Clear Time (g_c+I1), s	11.0	12.2	15.1	35.4	5.6	14.4	8.3	22.5
Green Ext Time (p_c), s	0.0	1.8	0.1	3.2	0.0	2.1	0.0	6.2

Intersection Summary	
HCM 6th Ctrl Delay	29.4
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

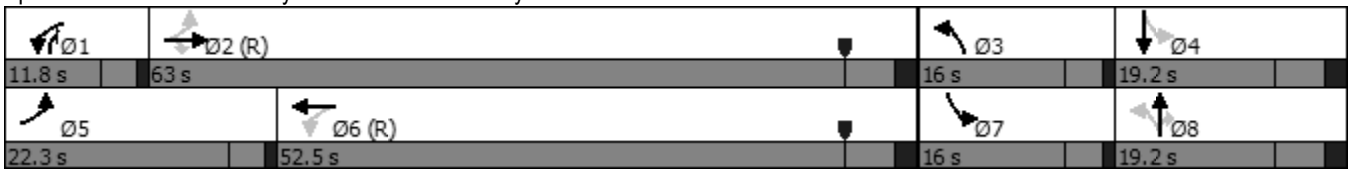
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Twin Mesa Metropolitan District New Service Plan
SV2023-003
Planning Commission Supplemental Memo Page 791 of 1222

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	210	642	140	140	1193	85	45	70	90	70	109
Future Volume (vph)	210	642	140	140	1193	85	45	70	90	70	109
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	pm+ov	pm+pt	NA	Free
Protected Phases	5	2		1	6	3	8	1	7	4	
Permitted Phases	2		2	6		8		8	4		Free
Detector Phase	5	2	2	1	6	3	8	1	7	4	
Switch Phase											
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0	3.0	5.0	3.0	3.0	5.0	
Minimum Split (s)	9.5	32.0	32.0	9.5	32.0	9.5	11.0	9.5	9.5	11.0	
Total Split (s)	22.3	63.0	63.0	11.8	52.5	16.0	19.2	11.8	16.0	19.2	
Total Split (%)	20.3%	57.3%	57.3%	10.7%	47.7%	14.5%	17.5%	10.7%	14.5%	17.5%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.0	3.0	3.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	1.0	2.0	1.0	1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	4.0	4.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None	None	
Act Effct Green (s)	79.2	67.3	67.3	70.3	61.6	18.2	9.0	16.3	19.0	9.3	110.0
Actuated g/C Ratio	0.72	0.61	0.61	0.64	0.56	0.17	0.08	0.15	0.17	0.08	1.00
v/c Ratio	0.81	0.33	0.15	0.29	0.75	0.36	0.32	0.23	0.39	0.48	0.07

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 18.5
Intersection Capacity Utilization 75.4%
Analysis Period (min) 15

Splits and Phases: 2: Perry St. & Plum Creek Pkwy.



Twin Mesa Metropolitan District New Service Plan
SV2023-003
Planning Commission Supplemental Memo Page 792 of 1222



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	228	698	152	152	1476	92	49	76	98	76	118
v/c Ratio	0.81	0.33	0.15	0.29	0.75	0.36	0.32	0.23	0.39	0.48	0.07
Control Delay	62.7	6.0	0.9	5.7	17.0	38.5	52.0	4.3	39.1	57.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.7	6.0	0.9	5.7	17.1	38.5	52.0	4.3	39.1	57.2	0.1
Queue Length 50th (ft)	119	48	0	20	248	54	33	0	58	52	0
Queue Length 95th (ft)	205	75	1	m37	#707	92	70	18	97	97	0
Internal Link Dist (ft)		473			1330		455			497	
Turn Bay Length (ft)	170		70	100		185		65	120		120
Base Capacity (vph)	370	2122	992	548	1973	309	225	344	296	228	1615
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	43	0	0	0	0	0	20
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.33	0.15	0.28	0.76	0.30	0.22	0.22	0.33	0.33	0.07

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	210	642	140	140	1193	165	85	45	70	90	70	109
Future Volume (veh/h)	210	642	140	140	1193	165	85	45	70	90	70	109
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1885	1885	1885	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	228	698	152	152	1297	179	92	49	76	98	76	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	4	4	1	1	1	1	1	1	0	0	0
Cap, veh/h	406	2224	992	558	1949	267	218	127	187	237	134	
Arrive On Green	0.14	1.00	1.00	0.10	1.00	1.00	0.06	0.07	0.07	0.06	0.07	0.00
Sat Flow, veh/h	1753	3497	1560	1795	3164	434	1795	1885	1583	1810	1900	1610
Grp Volume(v), veh/h	228	698	152	152	731	745	92	49	76	98	76	0
Grp Sat Flow(s),veh/h/ln	1753	1749	1560	1795	1791	1807	1795	1885	1583	1810	1900	1610
Q Serve(g_s), s	5.6	0.0	0.0	3.5	0.0	0.0	5.2	2.7	4.9	5.5	4.3	0.0
Cycle Q Clear(g_c), s	5.6	0.0	0.0	3.5	0.0	0.0	5.2	2.7	4.9	5.5	4.3	0.0
Prop In Lane	1.00		1.00	1.00		0.24	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	406	2224	992	558	1103	1113	218	127	187	237	134	
V/C Ratio(X)	0.56	0.31	0.15	0.27	0.66	0.67	0.42	0.39	0.41	0.41	0.57	
Avail Cap(c_a), veh/h	574	2224	992	595	1103	1113	304	226	270	317	228	
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.86	0.86	0.86	0.73	0.73	0.73	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	5.8	0.0	0.0	6.4	0.0	0.0	44.1	49.1	45.0	43.8	49.5	0.0
Incr Delay (d2), s/veh	0.4	0.3	0.3	0.1	2.3	2.4	0.5	1.4	1.1	0.4	2.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.1	0.1	1.1	0.7	0.7	2.3	1.3	2.0	2.4	2.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.2	0.3	0.3	6.4	2.3	2.4	44.5	50.5	46.0	44.3	52.3	0.0
LnGrp LOS	A	A	A	A	A	A	D	D	D	D	D	
Approach Vol, veh/h		1078			1628			217			174	A
Approach Delay, s/veh		1.5			2.7			46.4			47.8	
Approach LOS		A			A			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	75.9	10.8	13.8	11.7	73.7	11.1	13.4
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	7.8	57.0	12.0	13.2	18.3	46.5	12.0	13.2
Max Q Clear Time (g_c+I1), s	5.5	2.0	7.2	6.3	7.6	2.0	7.5	6.9
Green Ext Time (p_c), s	0.0	6.1	0.0	0.1	0.1	14.9	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	7.9
HCM 6th LOS	A

Notes

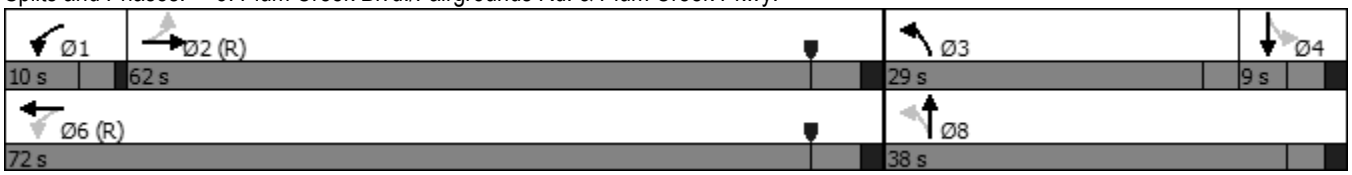
User approved pedestrian interval to be less than phase max green.

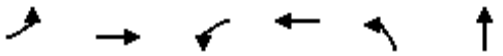
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	Ø4
Lane Configurations							
Traffic Volume (vph)	15	542	72	1128	365	0	
Future Volume (vph)	15	542	72	1128	365	0	
Turn Type	Perm	NA	pm+pt	NA	pm+pt	NA	
Protected Phases		2	1	6	3	8	4
Permitted Phases	2		6		8		
Detector Phase	2	2	1	6	3	8	
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	5.0	5.0	2.0
Minimum Split (s)	33.0	33.0	9.5	28.0	14.5	10.0	7.0
Total Split (s)	62.0	62.0	10.0	72.0	29.0	38.0	9.0
Total Split (%)	56.4%	56.4%	9.1%	65.5%	26.4%	34.5%	8%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	1.0	2.0	0.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	4.0	6.0	3.0	5.0	
Lead/Lag	Lag	Lag	Lead		Lead		Lag
Lead-Lag Optimize?	Yes	Yes	Yes		Yes		Yes
Recall Mode	C-Max	C-Max	None	C-Max	None	Max	Max
Act Effct Green (s)	58.0	58.0	68.0	66.0	35.0	33.0	
Actuated g/C Ratio	0.53	0.53	0.62	0.60	0.32	0.30	
v/c Ratio	0.09	0.48	0.22	0.57	0.82	0.09	

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 19.0
Intersection Capacity Utilization 73.9%
Analysis Period (min) 15

Splits and Phases: 3: Plum Creek Blvd./Fairgrounds Rd. & Plum Creek Pkwy.





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT
Lane Group Flow (vph)	16	855	78	1227	397	63
v/c Ratio	0.09	0.48	0.22	0.57	0.82	0.09
Control Delay	16.7	13.8	9.9	14.7	48.4	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.7	13.8	9.9	14.7	48.4	0.2
Queue Length 50th (ft)	4	112	20	260	245	0
Queue Length 95th (ft)	m17	168	40	320	#384	0
Internal Link Dist (ft)		1330		637		613
Turn Bay Length (ft)	70		55			
Base Capacity (vph)	181	1789	359	2144	501	706
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.48	0.22	0.57	0.79	0.09

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	542	245	72	1128	1	365	0	58	0	0	0
Future Volume (veh/h)	15	542	245	72	1128	1	365	0	58	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1885	1885	1885	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	16	589	266	78	1226	1	397	0	63	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	4	4	1	1	1	1	1	1	0	0	0
Cap, veh/h	244	1223	552	479	2204	2	536	0	479	65	98	0
Arrive On Green	1.00	1.00	1.00	0.04	0.60	0.60	0.22	0.00	0.30	0.00	0.00	0.00
Sat Flow, veh/h	447	2342	1056	1795	3673	3	1795	0	1598	1360	1900	0
Grp Volume(v), veh/h	16	440	415	78	598	629	397	0	63	0	0	0
Grp Sat Flow(s),veh/h/ln	447	1749	1649	1795	1791	1885	1795	0	1598	1360	1900	0
Q Serve(g_s), s	1.0	0.0	0.0	2.1	22.0	22.0	22.1	0.0	3.2	0.0	0.0	0.0
Cycle Q Clear(g_c), s	14.5	0.0	0.0	2.1	22.0	22.0	22.1	0.0	3.2	0.0	0.0	0.0
Prop In Lane	1.00		0.64	1.00		0.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	244	913	862	479	1075	1131	536	0	479	65	98	0
V/C Ratio(X)	0.07	0.48	0.48	0.16	0.56	0.56	0.74	0.00	0.13	0.00	0.00	0.00
Avail Cap(c_a), veh/h	244	913	862	503	1075	1131	564	0	479	65	98	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	1.7	0.0	0.0	10.1	13.2	13.2	35.5	0.0	28.1	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.5	1.7	1.8	0.2	2.1	2.0	4.2	0.0	0.6	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.4	0.4	0.8	8.8	9.2	10.2	0.0	1.3	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	2.2	1.7	1.8	10.2	15.3	15.2	39.7	0.0	28.6	0.0	0.0	0.0
LnGrp LOS	A	A	A	B	B	B	D	A	C	A	A	A
Approach Vol, veh/h		871			1305			460			0	
Approach Delay, s/veh		1.8			14.9			38.2			0.0	
Approach LOS		A			B			D				

Timer - Assigned Phs	1	2	3	4		6		8				
Phs Duration (G+Y+Rc), s	8.5	63.5	27.3	10.7		72.0		38.0				
Change Period (Y+Rc), s	4.0	6.0	3.0	5.0		6.0		5.0				
Max Green Setting (Gmax), s	6.0	56.0	26.0	4.0		66.0		33.0				
Max Q Clear Time (g_c+I1), s	4.1	16.5	24.1	0.0		24.0		5.2				
Green Ext Time (p_c), s	0.0	6.7	0.2	0.0		10.5		0.2				

Intersection Summary	
HCM 6th Ctrl Delay	14.7
HCM 6th LOS	B

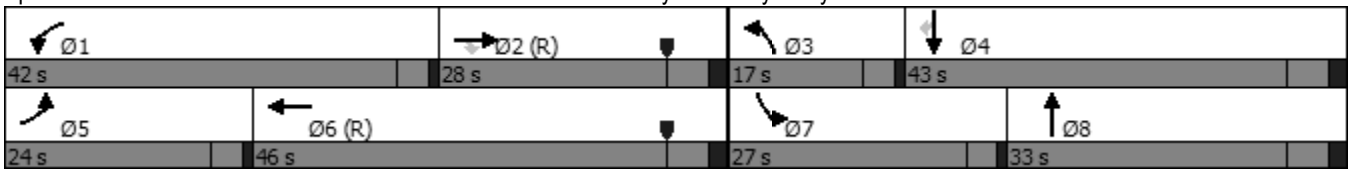
Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	167	384	5	1002	237	568	22	420	799	277	391	87
Future Volume (vph)	167	384	5	1002	237	568	22	420	799	277	391	87
Turn Type	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			Free			Free			4
Detector Phase	5	2	2	1	6		3	8		7	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	11.0	26.0	26.0	11.0	33.0		11.0	33.0		11.0	33.0	33.0
Total Split (s)	24.0	28.0	28.0	42.0	46.0		17.0	33.0		27.0	43.0	43.0
Total Split (%)	18.5%	21.5%	21.5%	32.3%	35.4%		13.1%	25.4%		20.8%	33.1%	33.1%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0		1.0	2.0		1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.0		4.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	Max	C-Max	C-Max	None	C-Max		Max	Max		None	Max	Max
Act Effct Green (s)	20.0	27.1	27.1	32.9	40.0	130.0	13.0	34.0	130.0	16.0	37.0	37.0
Actuated g/C Ratio	0.15	0.21	0.21	0.25	0.31	1.00	0.10	0.26	1.00	0.12	0.28	0.28
v/c Ratio	0.32	0.53	0.01	0.81	0.22	0.37	0.12	0.46	0.51	0.67	0.41	0.17

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 32.2
Intersection Capacity Utilization 65.9%
Analysis Period (min) 15

Splits and Phases: 7: Dawson Trails Blvd. & Collector Road A/Crystal Valley Pkwy.



Twin Mesa Metropolitan District New Service Plan
SV2023-003
Planning Commission Supplemental Memo Page 798 of 1222

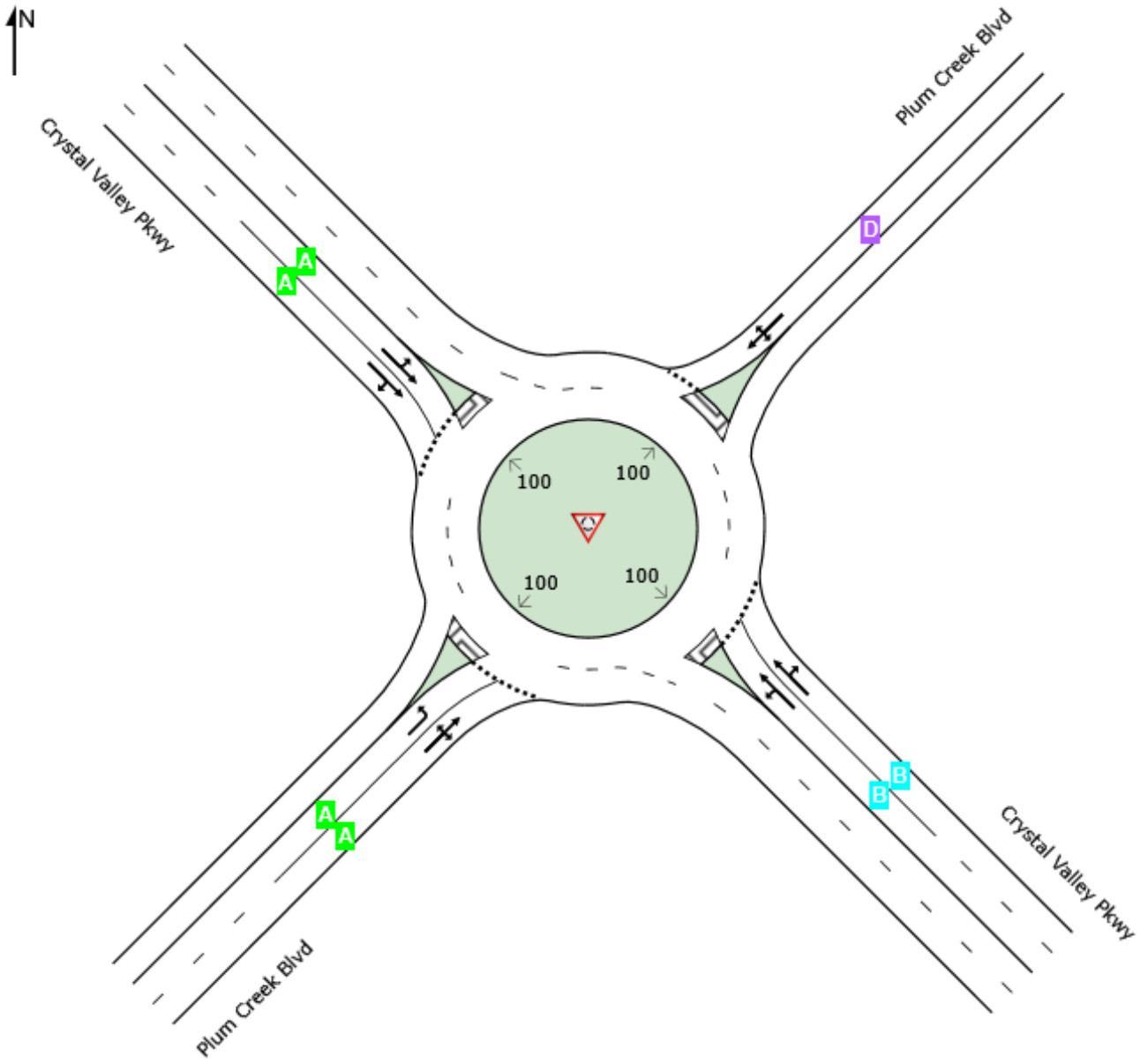
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 005 [Int #5_2040 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
LOS	B	D	A	A	B



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 7:02:43 AM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #5.sip9

DELAY (CONTROL)

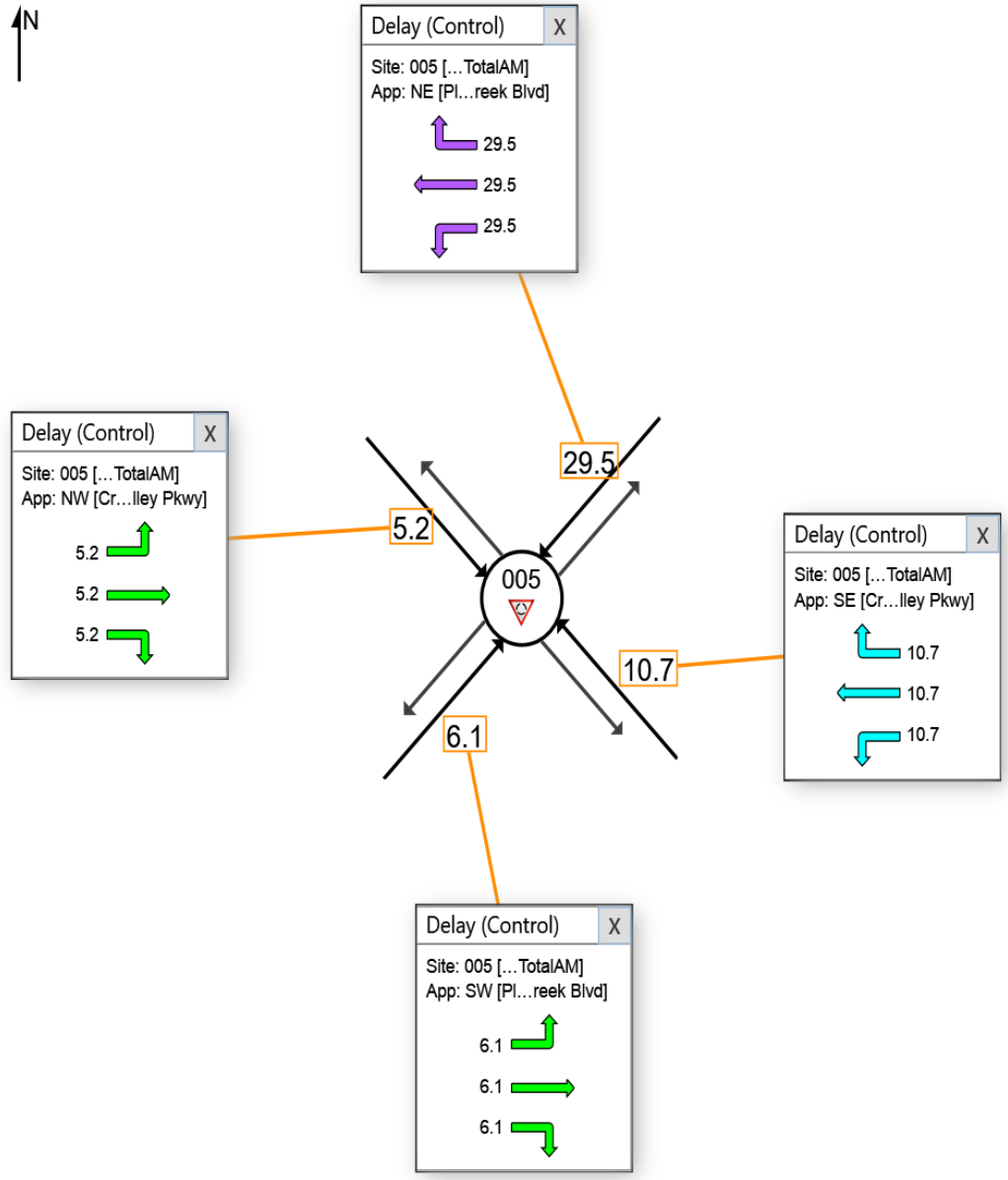
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 005 [Int #5_2040 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popups boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



Colour code based on Level of Service



LOS A LOS B LOS C LOS D LOS E LOS F

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Roundabout Level of Service Method: Same as Sign Control
Delay Model: HCM Delay Formula (Geometric Delay is not included).

Approach values are flow-weighted average values for vehicle movements (pedestrian delays not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 7:02:43 AM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #5.sip9

QUEUE DISTANCE (PERCENTILE)

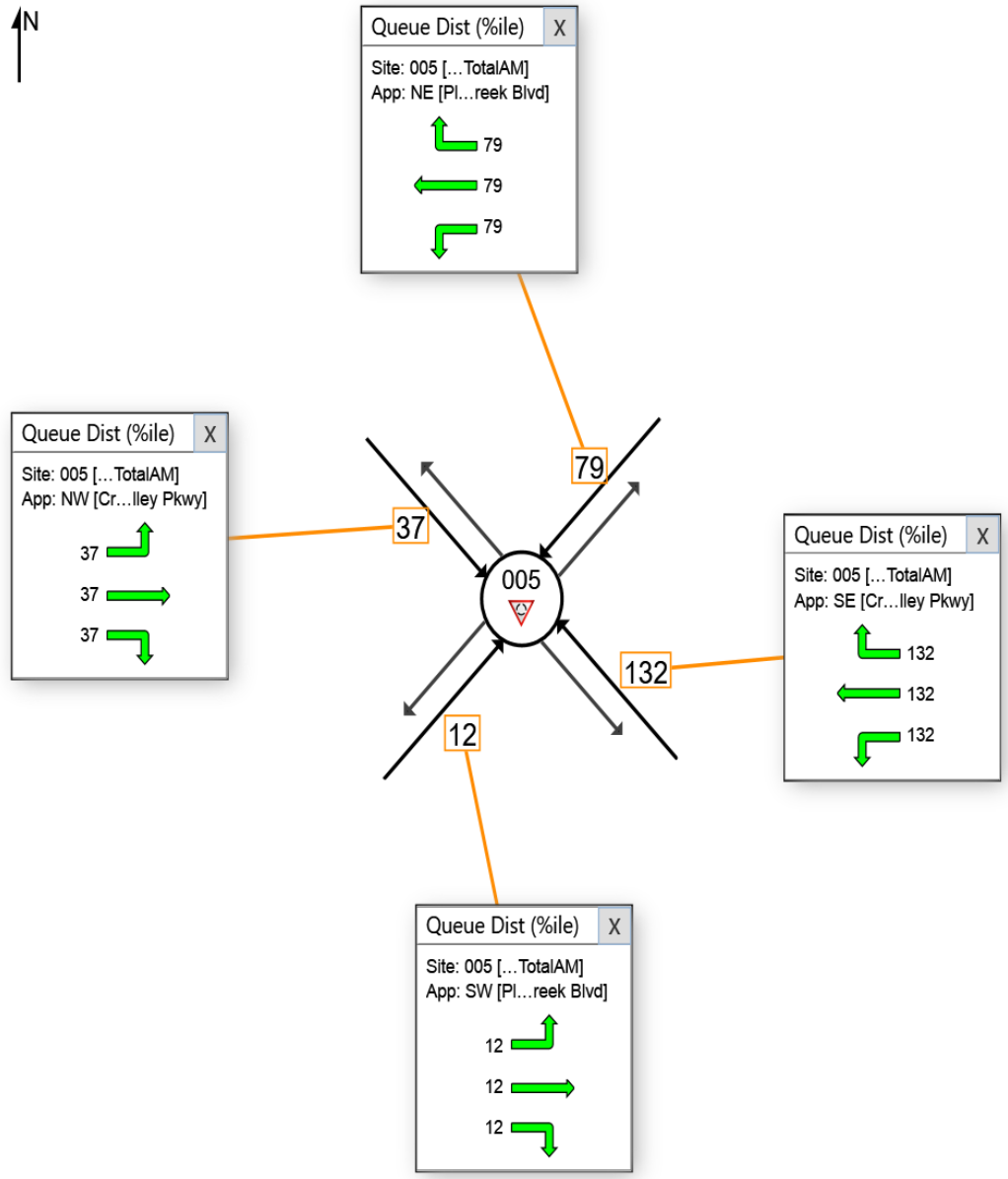
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 005 [Int #5_2040 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



Colour code based on Queue Storage Ratio



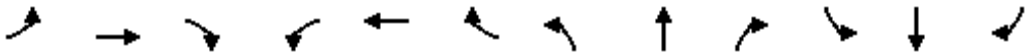
[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0]

Queue Model: HCM Queue Formula.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 7:02:43 AM

Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #5.sip9



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	170	392	5	1022	242	580	22	429	815	283	399	89
v/c Ratio	0.32	0.53	0.01	0.81	0.22	0.37	0.12	0.46	0.51	0.67	0.41	0.17
Control Delay	50.8	49.8	0.0	51.0	34.1	0.7	55.3	42.9	1.2	62.3	39.2	2.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.8	49.8	0.0	51.0	34.1	0.7	55.3	42.9	1.2	62.3	39.2	2.7
Queue Length 50th (ft)	66	156	0	286	80	0	17	160	0	119	143	0
Queue Length 95th (ft)	102	220	0	323	115	0	45	222	0	161	192	17
Internal Link Dist (ft)		1283			1733			1960			1008	
Turn Bay Length (ft)	200		200	500			500		1000	500		500
Base Capacity (vph)	538	737	462	1458	1088	1583	177	925	1583	607	978	527
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.53	0.01	0.70	0.22	0.37	0.12	0.46	0.51	0.47	0.41	0.17

Intersection Summary

Twin Mesa Metropolitan District New Service Plan
SV2023-003
Planning Commission Supplemental Memo Page 805 of 1222

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	167	384	5	1002	237	568	22	420	799	277	391	87
Future Volume (veh/h)	167	384	5	1002	237	568	22	420	799	277	391	87
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900	1870	1870	1870	1870	1870	1870	1870	1826	1826
Adj Flow Rate, veh/h	170	392	5	1022	242	0	22	429	0	283	399	89
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	2	0	2	2	2	2	2	2	2	5	5
Cap, veh/h	540	802	363	1184	1093		178	1008		349	987	440
Arrive On Green	0.15	0.23	0.23	0.24	0.31	0.00	0.10	0.28	0.00	0.10	0.28	0.28
Sat Flow, veh/h	3510	3554	1610	5023	3554	1585	1781	3554	1585	3456	3469	1547
Grp Volume(v), veh/h	170	392	5	1022	242	0	22	429	0	283	399	89
Grp Sat Flow(s),veh/h/ln	1755	1777	1610	1674	1777	1585	1781	1777	1585	1728	1735	1547
Q Serve(g_s), s	5.6	12.5	0.3	25.4	6.6	0.0	1.5	12.8	0.0	10.4	12.1	5.7
Cycle Q Clear(g_c), s	5.6	12.5	0.3	25.4	6.6	0.0	1.5	12.8	0.0	10.4	12.1	5.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	540	802	363	1184	1093		178	1008		349	987	440
V/C Ratio(X)	0.31	0.49	0.01	0.86	0.22		0.12	0.43		0.81	0.40	0.20
Avail Cap(c_a), veh/h	540	802	363	1468	1093		178	1008		611	987	440
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.60	0.60	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.9	43.8	39.1	47.7	33.4	0.0	53.3	37.9	0.0	57.2	37.6	35.3
Incr Delay (d2), s/veh	1.5	2.1	0.1	2.9	0.3	0.0	1.4	1.3	0.0	4.5	1.2	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	5.8	0.1	10.9	2.9	0.0	0.7	5.8	0.0	4.8	5.3	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.4	45.9	39.2	50.5	33.7	0.0	54.7	39.3	0.0	61.7	38.8	36.3
LnGrp LOS	D	D	D	D	C		D	D		E	D	D
Approach Vol, veh/h		567			1264	A		451	A		771	
Approach Delay, s/veh		47.2			47.3			40.0			46.9	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	34.7	35.3	17.0	43.0	24.0	46.0	17.1	42.9
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	38.0	22.0	13.0	37.0	20.0	40.0	23.0	27.0
Max Q Clear Time (g_c+I1), s	27.4	14.5	3.5	14.1	7.6	8.6	12.4	14.8
Green Ext Time (p_c), s	3.3	1.5	0.0	3.0	0.4	1.6	0.7	2.2

Intersection Summary	
HCM 6th Ctrl Delay	46.1
HCM 6th LOS	D

Notes

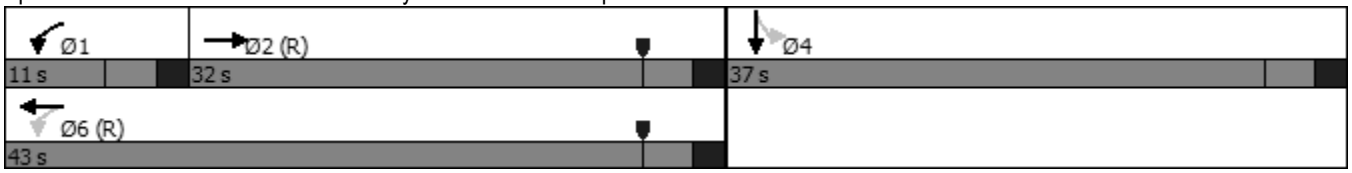
User approved pedestrian interval to be less than phase max green.

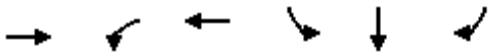
Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	745	105	700	710	5	515
Future Volume (vph)	745	105	700	710	5	515
Turn Type	NA	pm+pt	NA	Perm	NA	Free
Protected Phases	2	1	6		4	
Permitted Phases		6		4		Free
Detector Phase	2	1	6	4	4	
Switch Phase						
Minimum Initial (s)	10.0	5.0	10.0	5.0	5.0	
Minimum Split (s)	30.0	10.0	30.0	10.0	10.0	
Total Split (s)	32.0	11.0	43.0	37.0	37.0	
Total Split (%)	40.0%	13.8%	53.8%	46.3%	46.3%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes				
Recall Mode	C-Max	None	C-Max	None	None	
Act Effct Green (s)	38.2	48.6	48.6	21.4	21.4	80.0
Actuated g/C Ratio	0.48	0.61	0.61	0.27	0.27	1.00
v/c Ratio	0.40	0.31	0.36	0.61	0.62	0.36

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 20 (25%), Referenced to phase 2:EBT and 6:WBTL, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 14.9
Intersection Capacity Utilization 88.9%
Analysis Period (min) 15

Splits and Phases: 8: Plum Creek Pkwy & I-25 SB Off-Ramp





Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	951	117	778	529	266	572
v/c Ratio	0.40	0.31	0.36	0.61	0.62	0.36
Control Delay	15.6	10.5	9.5	28.0	31.0	0.6
Queue Delay	0.0	0.0	1.2	0.0	0.0	0.0
Total Delay	15.6	10.5	10.7	28.0	31.0	0.6
Queue Length 50th (ft)	108	22	91	127	128	0
Queue Length 95th (ft)	174	56	165	152	181	0
Internal Link Dist (ft)	437		181		388	
Turn Bay Length (ft)						160
Base Capacity (vph)	2402	376	2148	1288	646	1583
Starvation Cap Reductn	0	0	1074	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.31	0.72	0.41	0.41	0.36

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	745	111	105	700	0	0	0	0	710	5	515
Future Volume (veh/h)	0	745	111	105	700	0	0	0	0	710	5	515
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	828	123	117	778	0				793	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90				0.90	0.90	0.90
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2481	366	459	2391	0				1081	0	
Arrive On Green	0.00	0.55	0.55	0.06	0.67	0.00				0.20	0.00	0.00
Sat Flow, veh/h	0	4660	663	1781	3647	0				5344	0	1585
Grp Volume(v), veh/h	0	626	325	117	778	0				793	0	0
Grp Sat Flow(s),veh/h/ln	0	1702	1751	1781	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	8.1	8.2	2.1	7.3	0.0				11.1	0.0	0.0
Cycle Q Clear(g_c), s	0.0	8.1	8.2	2.1	7.3	0.0				11.1	0.0	0.0
Prop In Lane	0.00		0.38	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1880	967	459	2391	0				1081	0	
V/C Ratio(X)	0.00	0.33	0.34	0.25	0.33	0.00				0.73	0.00	
Avail Cap(c_a), veh/h	0	1880	967	489	2391	0				2138	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.50	0.50	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	9.8	9.8	6.5	5.5	0.0				29.9	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.5	0.9	0.1	0.2	0.0				1.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.8	3.1	0.7	2.2	0.0				4.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	10.3	10.8	6.6	5.7	0.0				30.9	0.0	0.0
LnGrp LOS	A	B	B	A	A	A				C	A	
Approach Vol, veh/h		951			895						793	A
Approach Delay, s/veh		10.5			5.8						30.9	
Approach LOS		B			A						C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	9.6	49.2		21.2		58.8
Change Period (Y+Rc), s	5.0	5.0		5.0		5.0
Max Green Setting (Gmax), s	6.0	27.0		32.0		38.0
Max Q Clear Time (g_c+I1), s	4.1	10.2		13.1		9.3
Green Ext Time (p_c), s	0.0	6.0		3.1		6.1

Intersection Summary	
HCM 6th Ctrl Delay	15.0
HCM 6th LOS	B

Notes

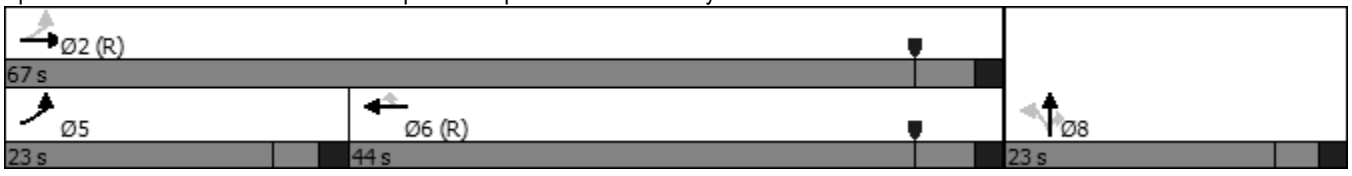
User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	388	1066	642	1100	159	2	130
Future Volume (vph)	388	1066	642	1100	159	2	130
Turn Type	pm+pt	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6			8	
Permitted Phases	2			6	8		8
Detector Phase	5	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0	5.0
Minimum Split (s)	10.0	31.0	24.0	24.0	40.0	40.0	40.0
Total Split (s)	23.0	67.0	44.0	44.0	23.0	23.0	23.0
Total Split (%)	25.6%	74.4%	48.9%	48.9%	25.6%	25.6%	25.6%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max
Act Effct Green (s)	62.0	61.0	38.0	38.0	18.0	18.0	18.0
Actuated g/C Ratio	0.69	0.68	0.42	0.42	0.20	0.20	0.20
v/c Ratio	0.96	0.34	0.86	0.63	0.32	0.32	0.26

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 53 (59%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 24.9
Intersection Capacity Utilization 88.9%
Analysis Period (min) 15

Splits and Phases: 9: I-25 NB Off-Ramp/On-Ramp & Plum Creek Pkwy





Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	422	1159	1296	598	109	107	100
v/c Ratio	0.96	0.34	0.86	0.63	0.32	0.32	0.26
Control Delay	60.6	6.4	25.3	4.9	34.0	25.1	8.6
Queue Delay	40.5	1.2	0.0	0.0	0.0	0.0	0.0
Total Delay	101.1	7.6	25.3	4.9	34.0	25.1	8.6
Queue Length 50th (ft)	184	87	286	1	55	40	0
Queue Length 95th (ft)	#372	108	391	70	107	92	43
Internal Link Dist (ft)		181	431			480	
Turn Bay Length (ft)					350		150
Base Capacity (vph)	438	3446	1504	952	336	335	380
Starvation Cap Reductn	54	1963	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.10	0.78	0.86	0.63	0.32	0.32	0.26

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	388	1066	0	0	642	1100	159	2	130	0	0	0
Future Volume (veh/h)	388	1066	0	0	642	1100	159	2	130	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	422	1159	0	0	698	1196	218	0	95			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	453	3461	0	0	793	1344	713	0	317			
Arrive On Green	0.20	0.68	0.00	0.00	0.42	0.42	0.20	0.00	0.20			
Sat Flow, veh/h	1781	5274	0	0	1870	3170	3563	0	1585			
Grp Volume(v), veh/h	422	1159	0	0	698	1196	218	0	95			
Grp Sat Flow(s),veh/h/ln	1781	1702	0	0	1870	1585	1781	0	1585			
Q Serve(g_s), s	15.8	8.5	0.0	0.0	30.9	31.4	4.7	0.0	4.6			
Cycle Q Clear(g_c), s	15.8	8.5	0.0	0.0	30.9	31.4	4.7	0.0	4.6			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	453	3461	0	0	793	1344	713	0	317			
V/C Ratio(X)	0.93	0.33	0.00	0.00	0.88	0.89	0.31	0.00	0.30			
Avail Cap(c_a), veh/h	456	3461	0	0	793	1344	713	0	317			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.88	0.88	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	25.7	6.0	0.0	0.0	23.8	24.0	30.7	0.0	30.6			
Incr Delay (d2), s/veh	23.9	0.2	0.0	0.0	13.4	9.2	1.1	0.0	2.4			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	11.7	2.6	0.0	0.0	15.8	12.8	2.1	0.0	1.9			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.6	6.3	0.0	0.0	37.2	33.1	31.8	0.0	33.0			
LnGrp LOS	D	A	A	A	D	C	C	A	C			
Approach Vol, veh/h		1581			1894			313				
Approach Delay, s/veh		17.8			34.6			32.2				
Approach LOS		B			C			C				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		67.0			22.9	44.1		23.0				
Change Period (Y+Rc), s		6.0			5.0	6.0		5.0				
Max Green Setting (Gmax), s		61.0			18.0	38.0		18.0				
Max Q Clear Time (g_c+I1), s		10.5			17.8	33.4		6.7				
Green Ext Time (p_c), s		11.3			0.0	3.6		0.8				

Intersection Summary	
HCM 6th Ctrl Delay	27.4
HCM 6th LOS	C

Notes

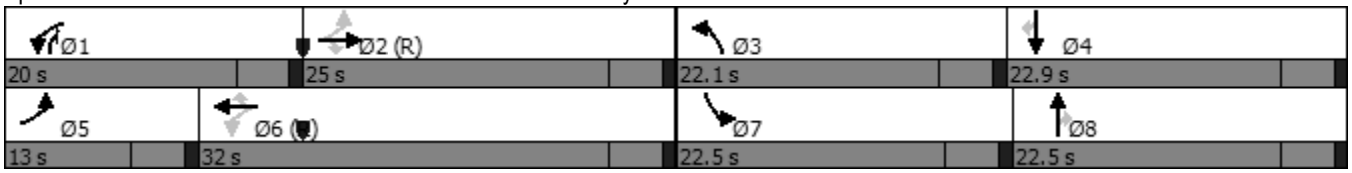
User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	363	70	333	569	59	123	372	387	87	442	26
Future Volume (vph)	27	363	70	333	569	59	123	372	387	87	442	26
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases	2		2	6		6			8			4
Detector Phase	5	2	2	1	6	6	3	8	1	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	9.5	22.5	22.5	22.5
Total Split (s)	13.0	25.0	25.0	20.0	32.0	32.0	22.1	22.5	20.0	22.5	22.9	22.9
Total Split (%)	14.4%	27.8%	27.8%	22.2%	35.6%	35.6%	24.6%	25.0%	22.2%	25.0%	25.4%	25.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	Max	Max	Max
Act Effct Green (s)	27.5	21.1	21.1	40.5	35.8	35.8	12.1	18.0	37.4	18.0	23.9	23.9
Actuated g/C Ratio	0.31	0.23	0.23	0.45	0.40	0.40	0.13	0.20	0.42	0.20	0.27	0.27
v/c Ratio	0.09	0.48	0.15	0.77	0.44	0.09	0.57	0.57	0.49	0.14	0.51	0.05

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 25.4
Intersection Capacity Utilization 62.5%
Analysis Period (min) 15

Splits and Phases: 10: Prairie Hawk Drive & Plum Creek Pkwy



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	29	395	76	362	618	64	134	404	421	95	480	28
v/c Ratio	0.09	0.48	0.15	0.77	0.44	0.09	0.57	0.57	0.49	0.14	0.51	0.05
Control Delay	15.6	32.2	0.6	29.9	22.2	0.4	45.2	36.2	6.4	30.3	31.2	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.6	32.2	0.6	29.9	22.2	0.4	45.2	36.2	6.4	30.3	31.2	0.2
Queue Length 50th (ft)	9	103	0	138	118	0	72	110	30	23	122	0
Queue Length 95th (ft)	24	148	0	#232	206	2	123	157	98	43	183	0
Internal Link Dist (ft)		969			922			624			872	
Turn Bay Length (ft)	230		230	230		230	230		230	230		250
Base Capacity (vph)	349	829	510	479	1408	706	346	707	860	686	940	554
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.48	0.15	0.76	0.44	0.09	0.39	0.57	0.49	0.14	0.51	0.05

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	363	70	333	569	59	123	372	387	87	442	26
Future Volume (veh/h)	27	363	70	333	569	59	123	372	387	87	442	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	29	395	76	362	618	0	134	404	421	95	480	28
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	316	818	365	506	1320		169	711	586	691	1085	484
Arrive On Green	0.03	0.23	0.23	0.17	0.37	0.00	0.09	0.20	0.20	0.20	0.31	0.31
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	29	395	76	362	618	0	134	404	421	95	480	28
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1777	1585	1728	1777	1585
Q Serve(g_s), s	1.1	8.7	3.5	13.3	11.9	0.0	6.6	9.2	18.0	2.0	9.8	1.1
Cycle Q Clear(g_c), s	1.1	8.7	3.5	13.3	11.9	0.0	6.6	9.2	18.0	2.0	9.8	1.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	316	818	365	506	1320		169	711	586	691	1085	484
V/C Ratio(X)	0.09	0.48	0.21	0.72	0.47		0.79	0.57	0.72	0.14	0.44	0.06
Avail Cap(c_a), veh/h	433	818	365	510	1320		348	711	586	691	1085	484
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.1	30.0	28.0	19.9	21.5	0.0	39.9	32.5	24.3	29.6	25.1	22.1
Incr Delay (d2), s/veh	0.1	2.0	1.3	4.7	1.2	0.0	8.2	1.1	4.2	0.4	1.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	3.7	1.4	5.6	4.8	0.0	3.2	3.9	7.9	0.9	4.2	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.3	32.1	29.3	24.6	22.7	0.0	48.1	33.6	28.5	30.0	26.4	22.3
LnGrp LOS	C	C	C	C	C		D	C	C	C	C	C
Approach Vol, veh/h		500			980	A		959			603	
Approach Delay, s/veh		31.2			23.4			33.4			26.8	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.8	25.2	13.0	32.0	7.1	37.9	22.5	22.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	15.5	20.5	17.6	18.4	8.5	27.5	18.0	18.0
Max Q Clear Time (g_c+I1), s	15.3	10.7	8.6	11.8	3.1	13.9	4.0	20.0
Green Ext Time (p_c), s	0.0	1.8	0.2	1.7	0.0	3.2	0.2	0.0

Intersection Summary	
HCM 6th Ctrl Delay	28.5
HCM 6th LOS	C

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

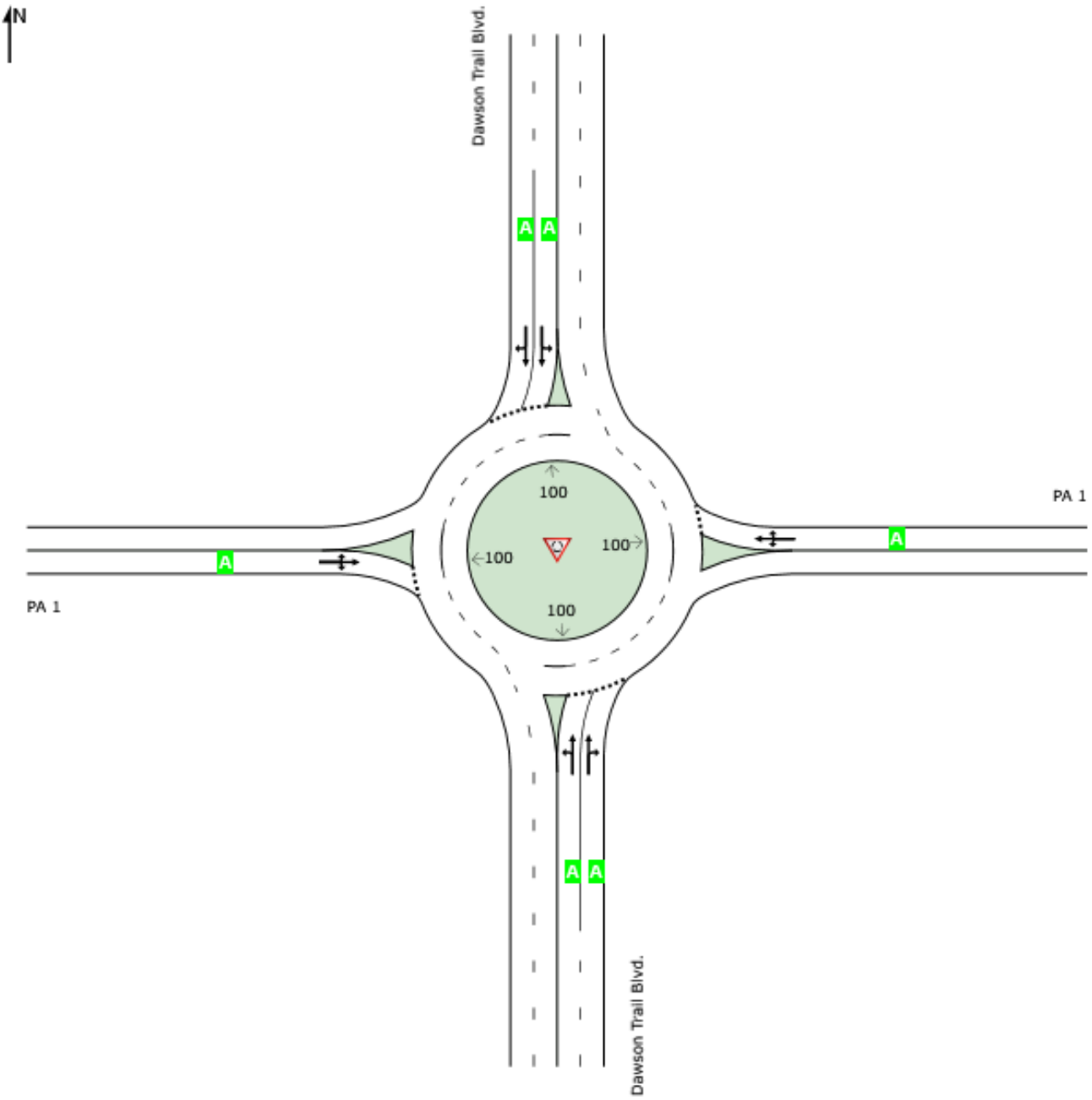
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 101 [Int#101_2040 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	A	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 8:53:55 AM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int#101.sip9

DELAY (CONTROL)

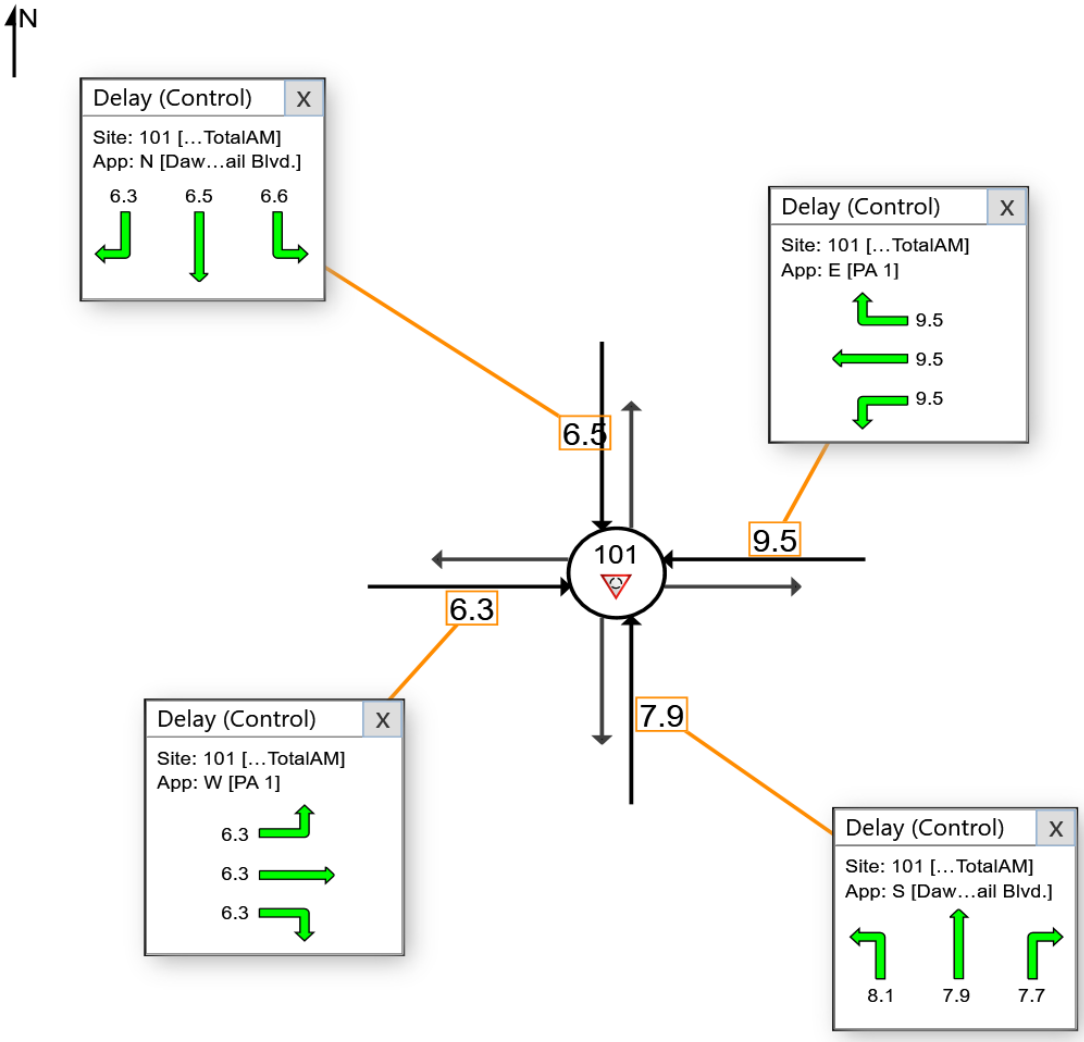
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 101 [Int#101_2040 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

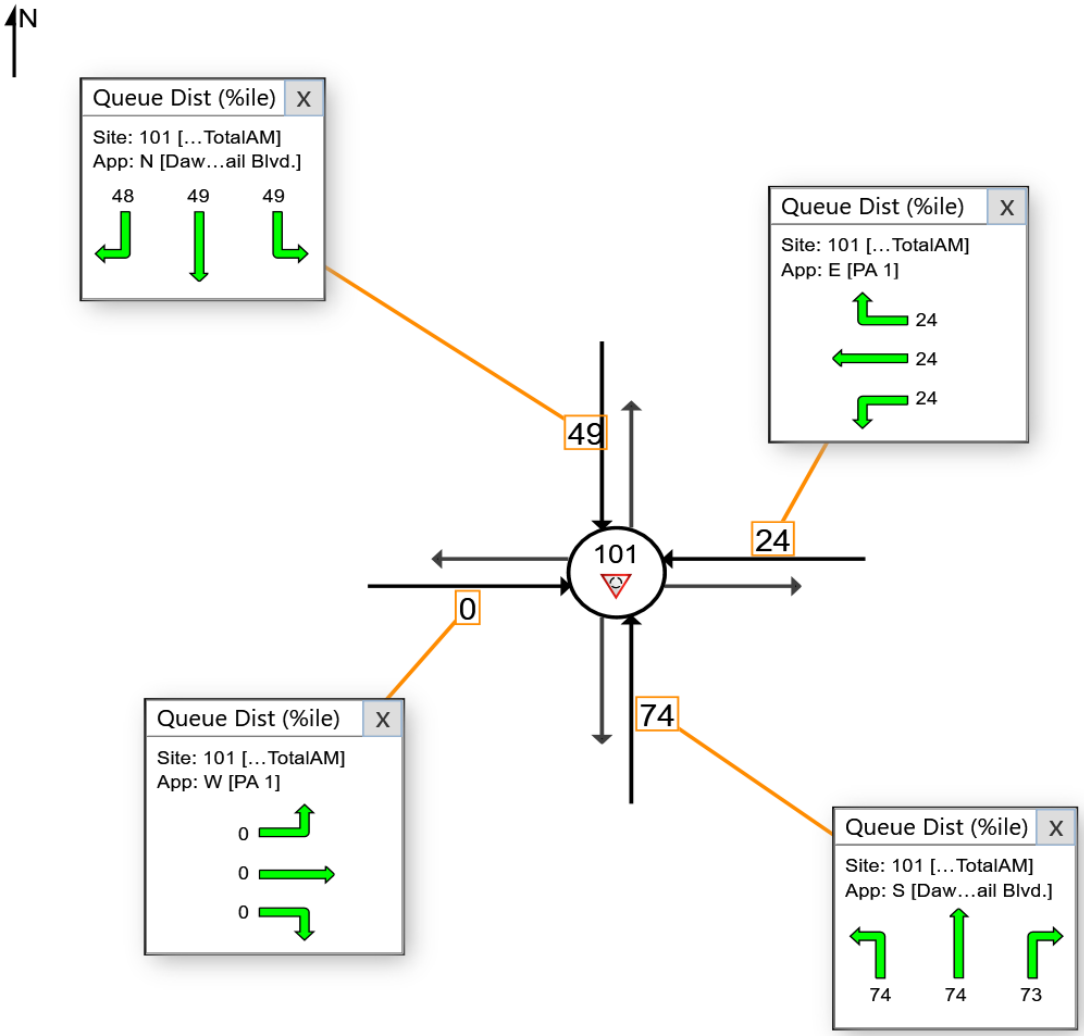
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 101 [Int#101_2040 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



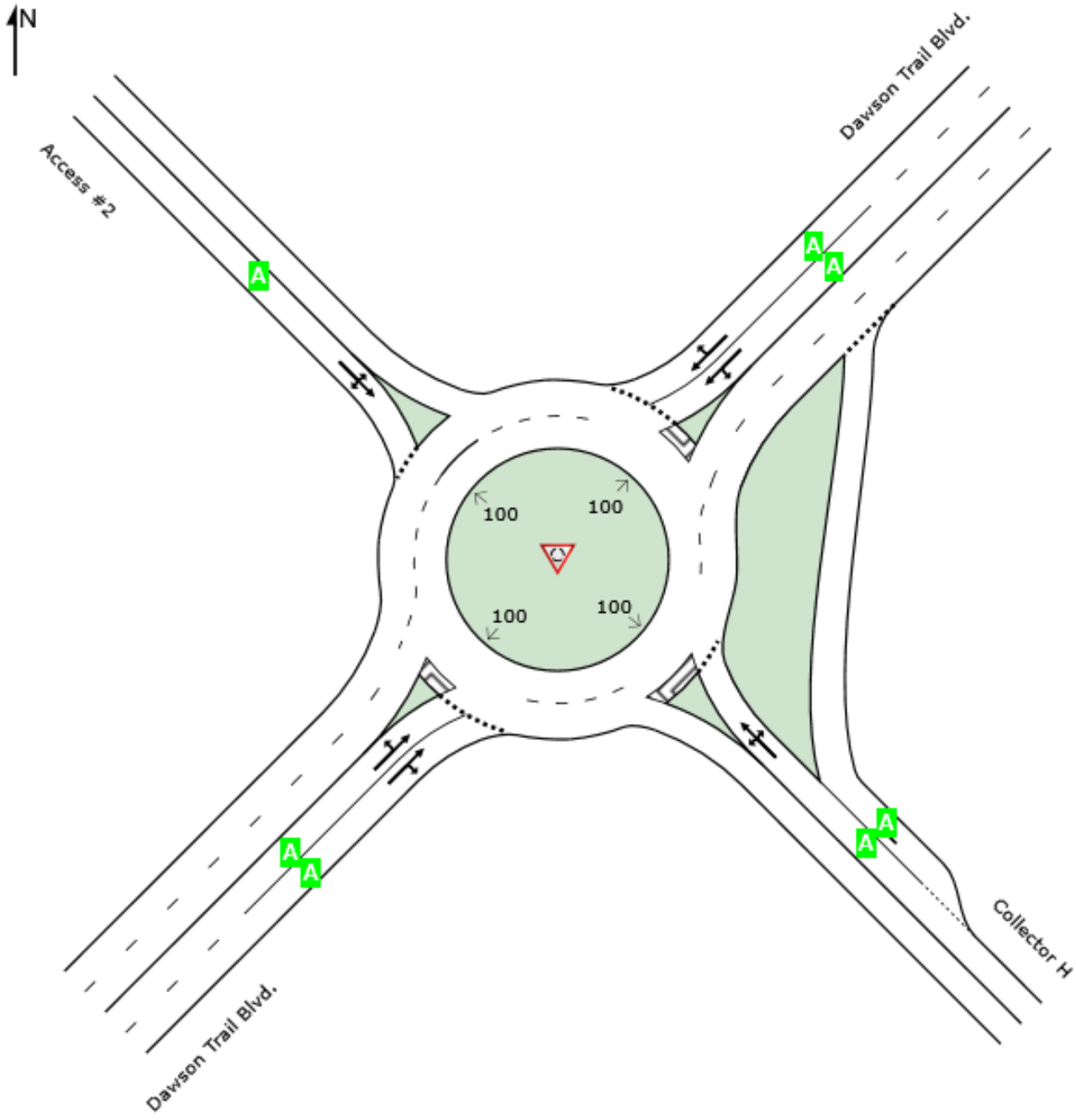
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 102 [Int #102_2040 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
LOS	A	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 9:08:09 AM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #102-mod.sip9

DELAY (CONTROL)

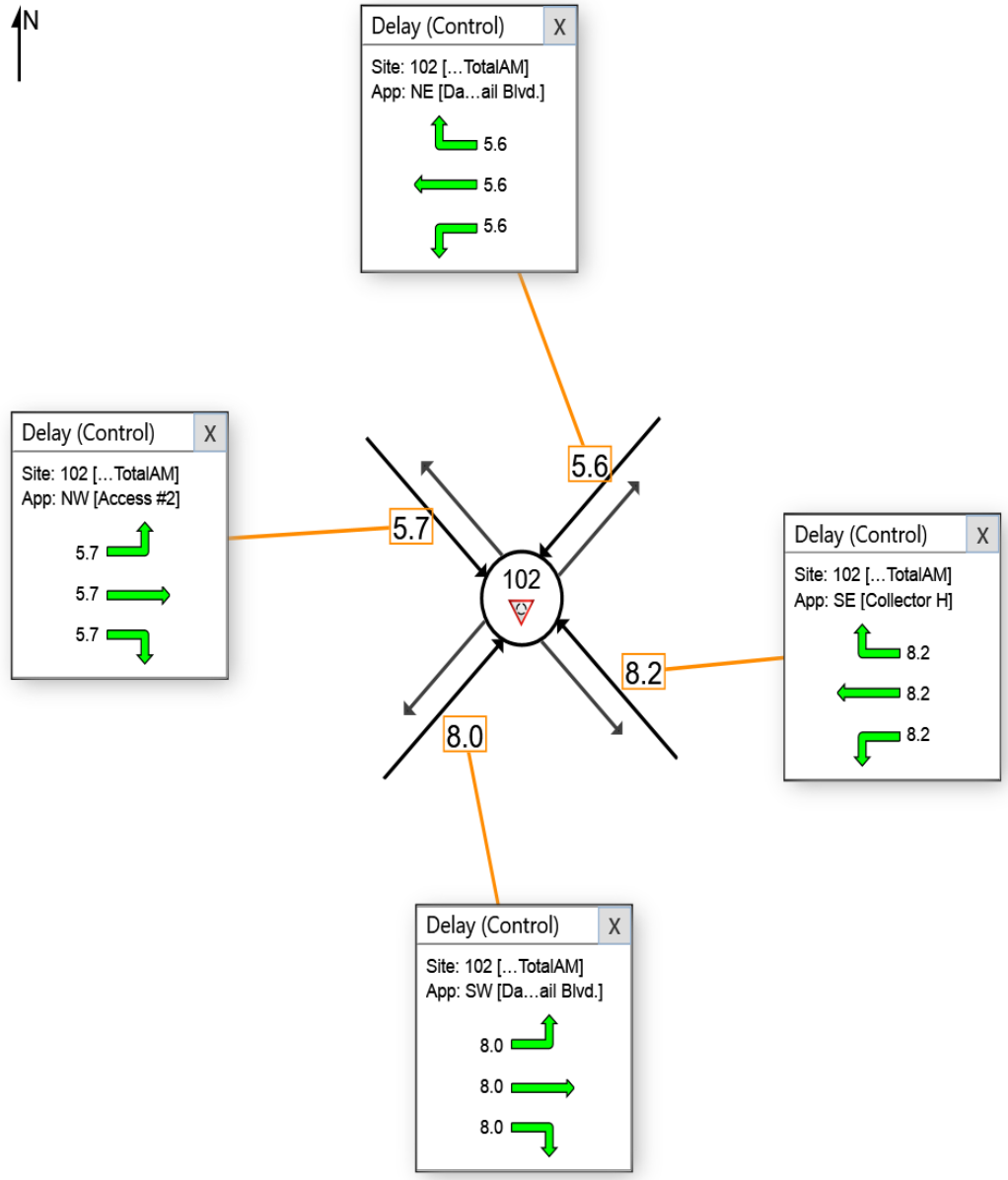
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 102 [Int #102_2040 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popups boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

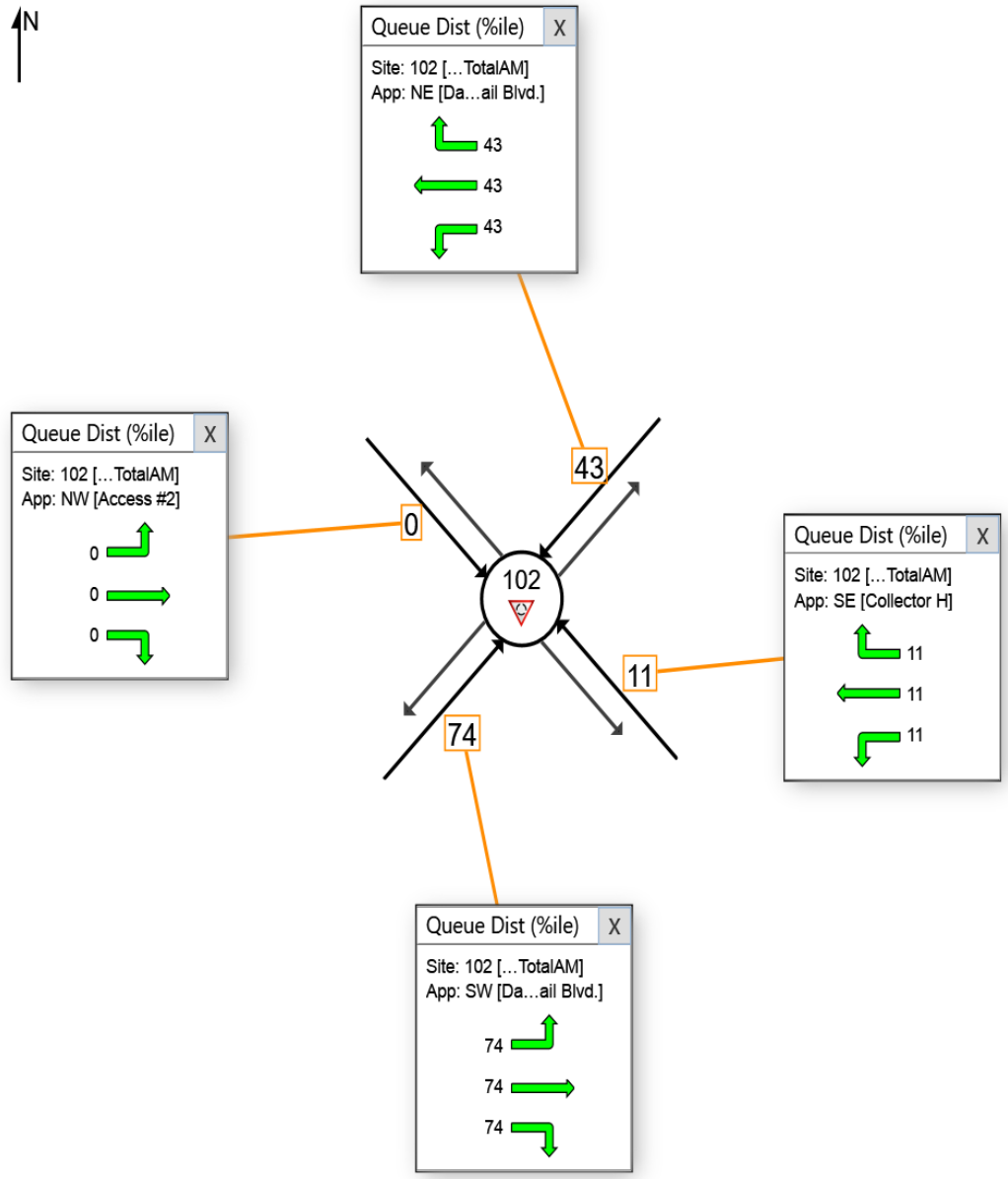
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 102 [Int #102_2040 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↱			↱	↰	↑↑	↱	↰	↑↑	↱
Traffic Vol, veh/h	0	0	48	0	0	9	11	1103	41	14	707	2
Future Vol, veh/h	0	0	48	0	0	9	11	1103	41	14	707	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	200	-	200	200	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	98	92	92	98	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	52	0	0	10	12	1126	45	15	721	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	361	-	-	563	723	0	0	1171	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	636	0	0	470	875	-	-	592	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	636	-	-	470	875	-	-	592	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.2	12.8	0.1	0.2
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	875	-	-	636	470	592	-	-
HCM Lane V/C Ratio	0.014	-	-	0.082	0.021	0.026	-	-
HCM Control Delay (s)	9.2	-	-	11.2	12.8	11.2	-	-
HCM Lane LOS	A	-	-	B	B	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.1	0.1	-	-

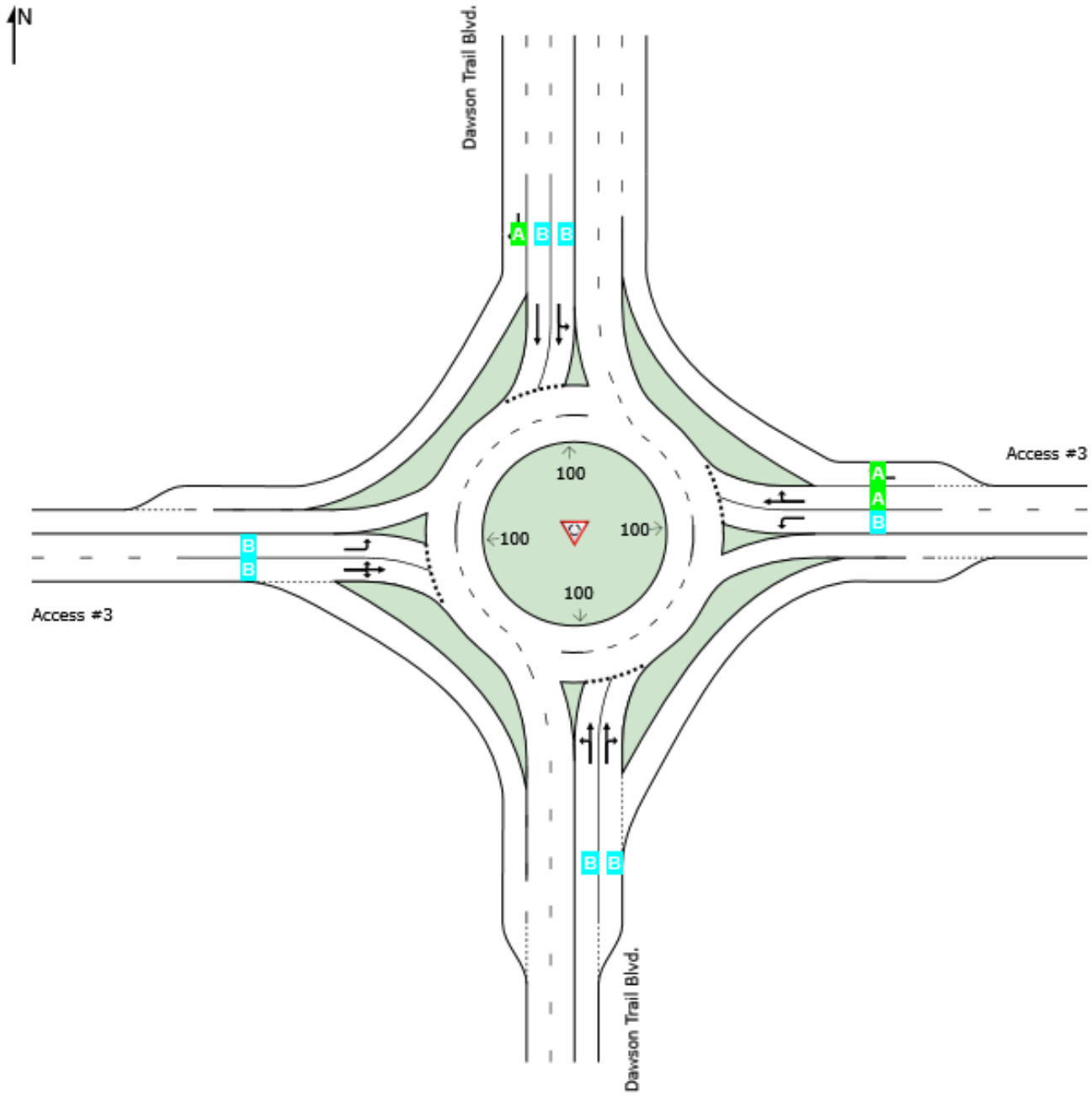
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 104 [Int#104_2040 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	B	A	B	B	B



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 9:28:38 AM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #104-mod.sip9

DELAY (CONTROL)

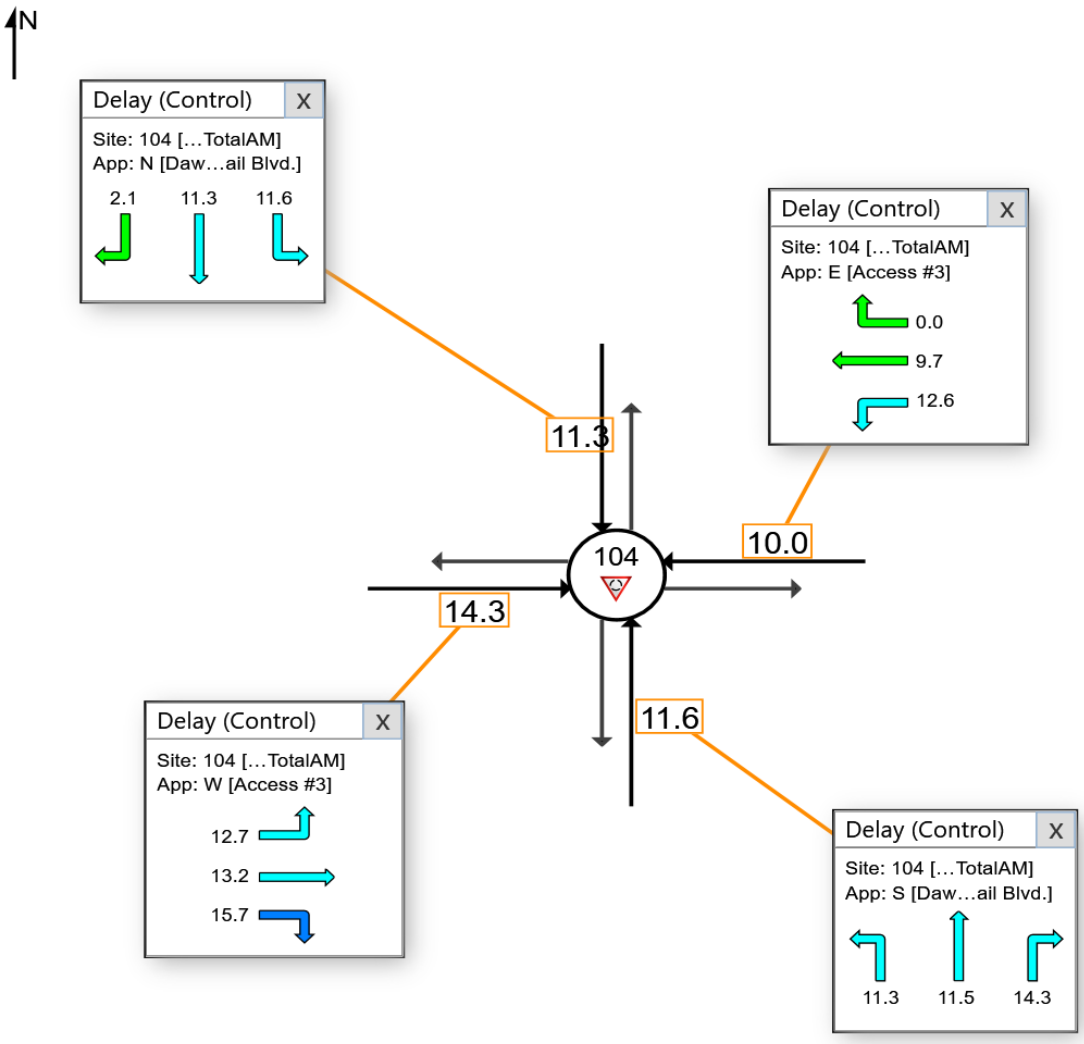
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 104 [Int#104_2040 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

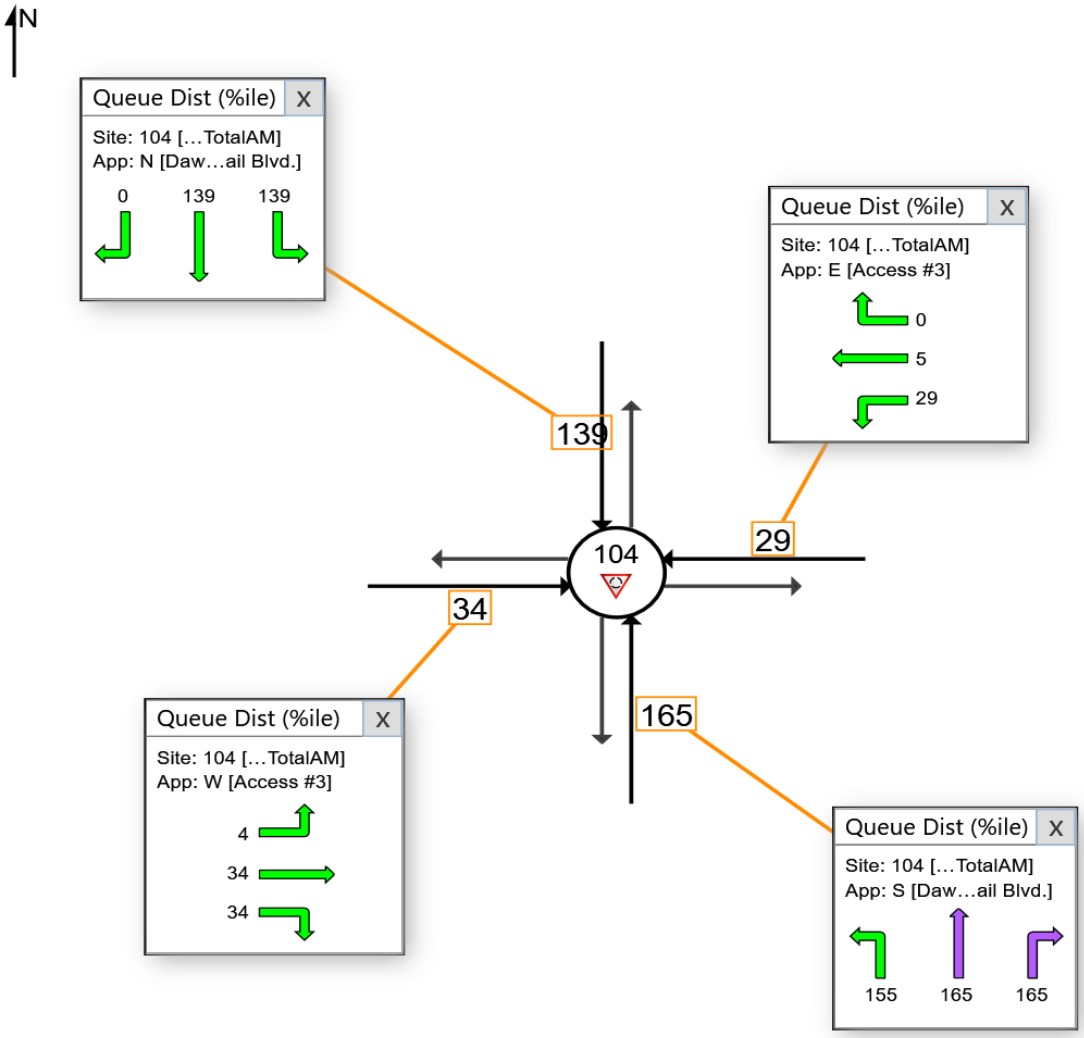
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 104 [Int#104_2040 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



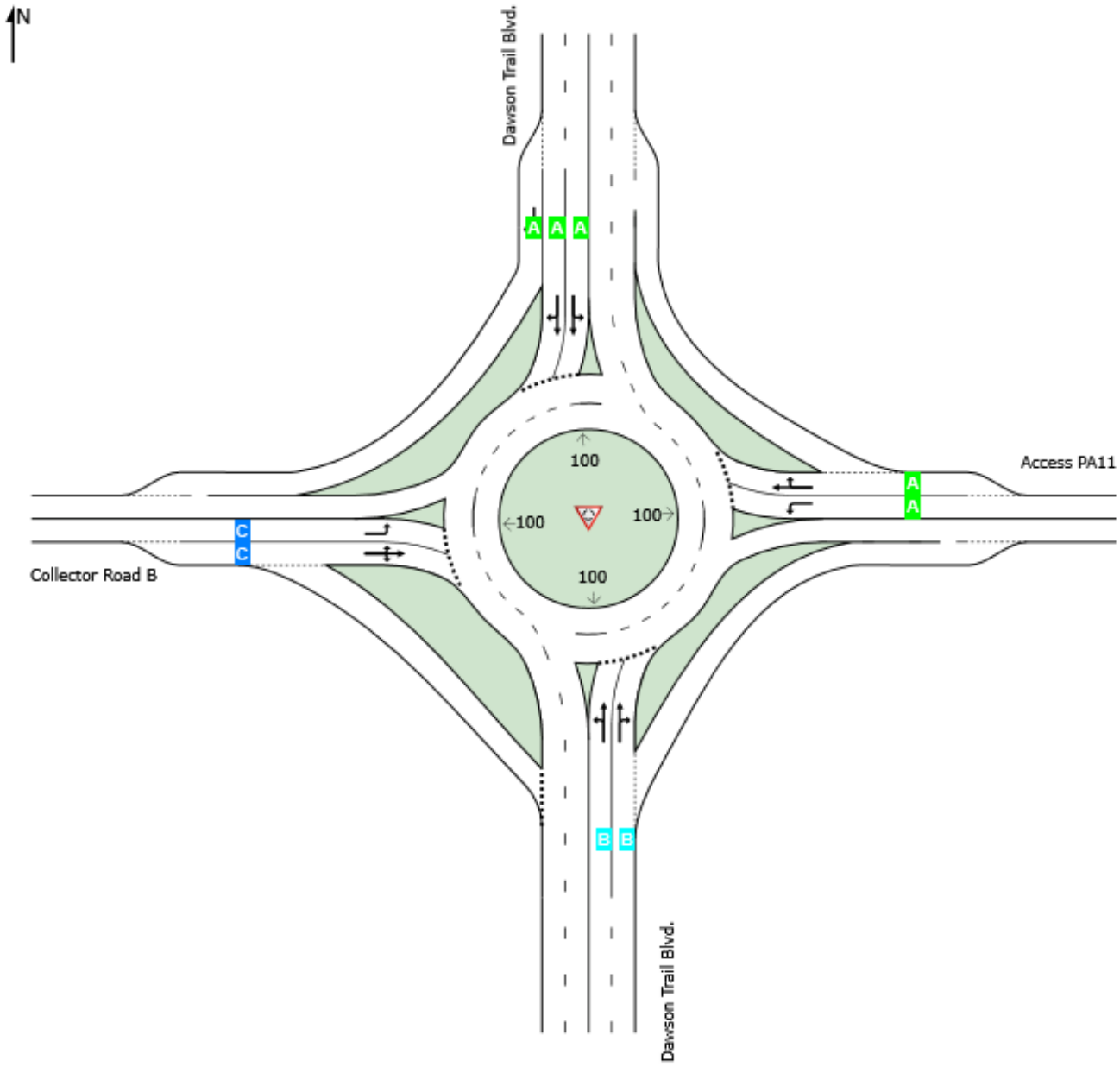
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 105 [Int#105_2040 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	B	A	A	C	B



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 9:36:25 AM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #105-mod.sip9

DELAY (CONTROL)

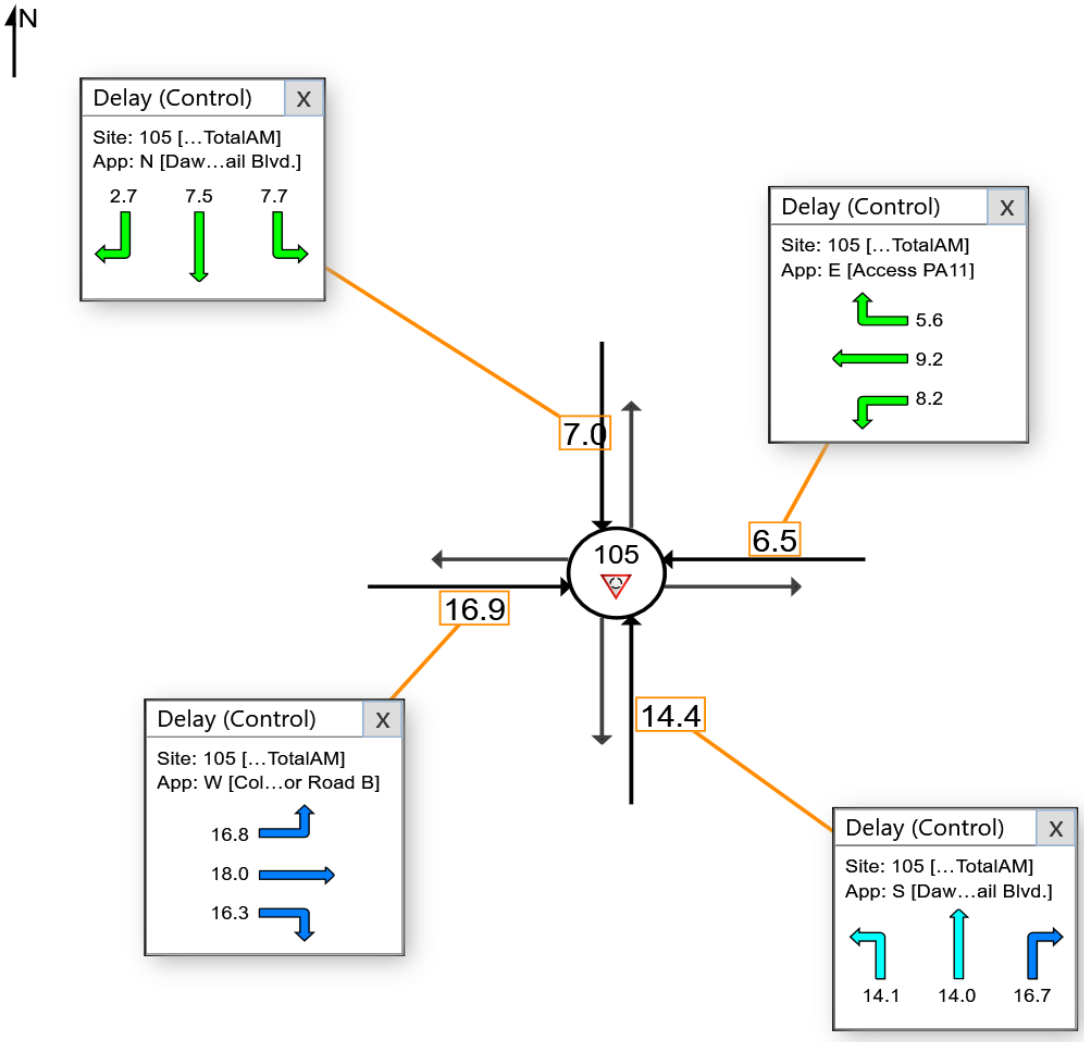
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 105 [Int#105_2040 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

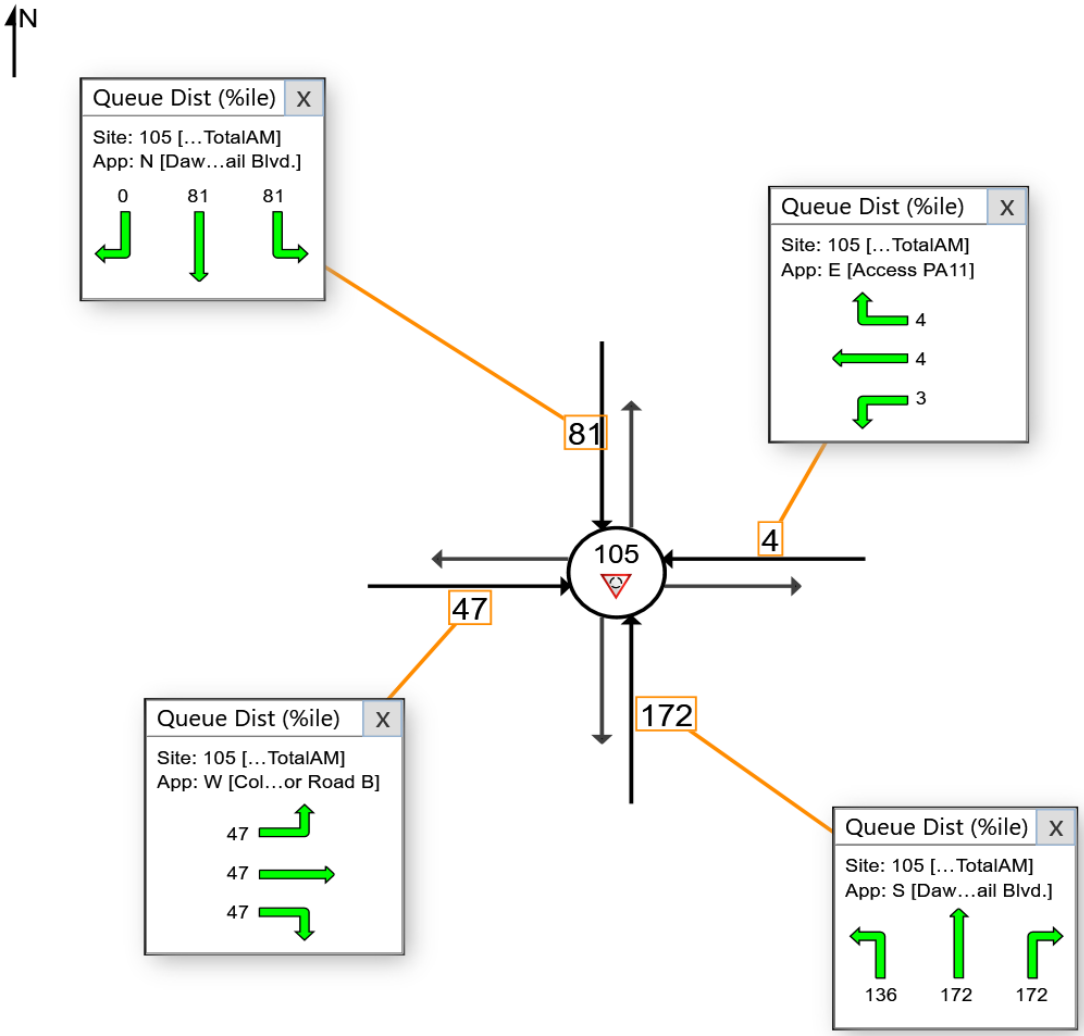
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 105 [Int#105_2040 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



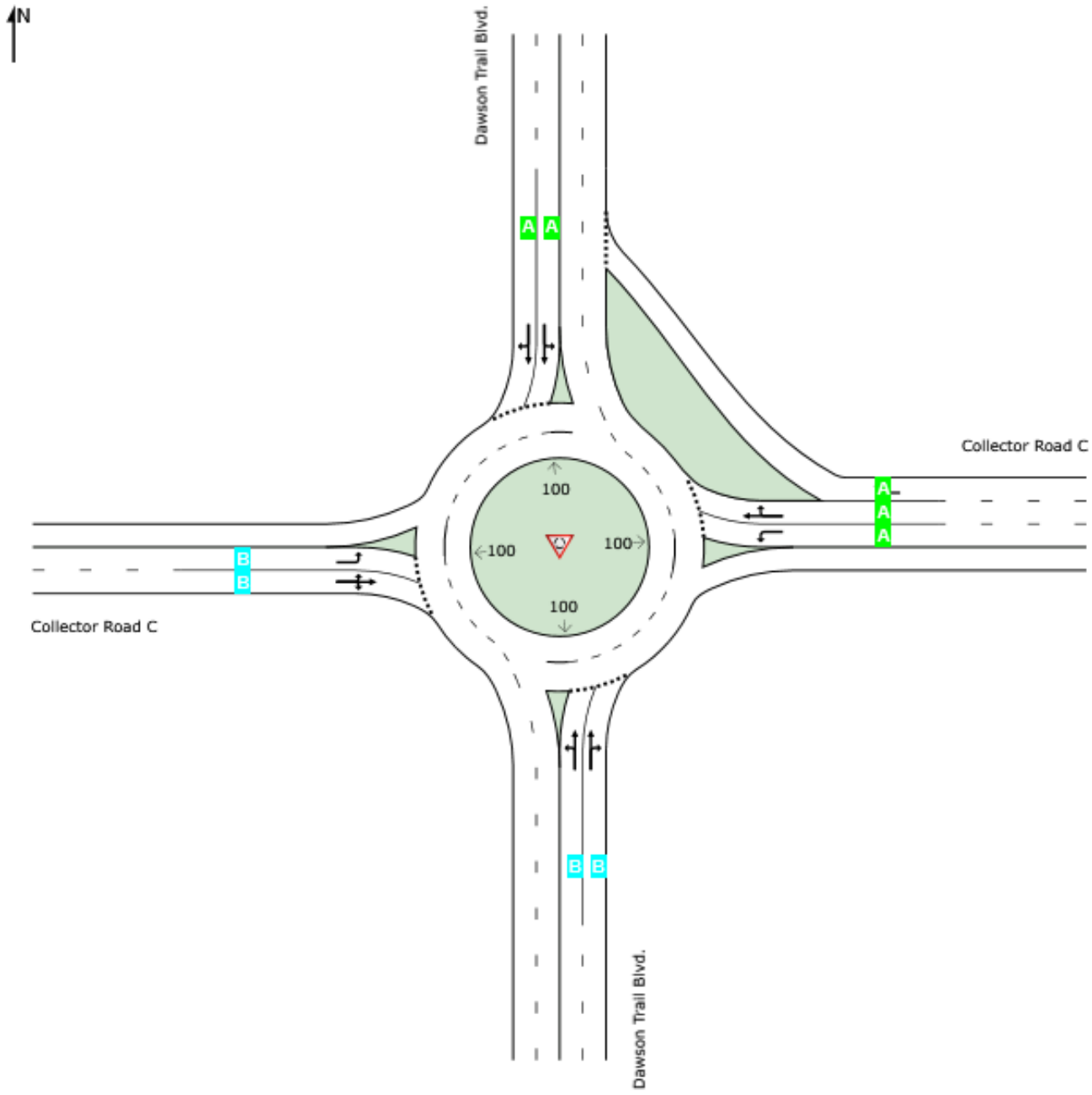
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 106 [Int#106_2040 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	B	A	A	B	B



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 9:50:34 AM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int#106-mod.sip9

DELAY (CONTROL)

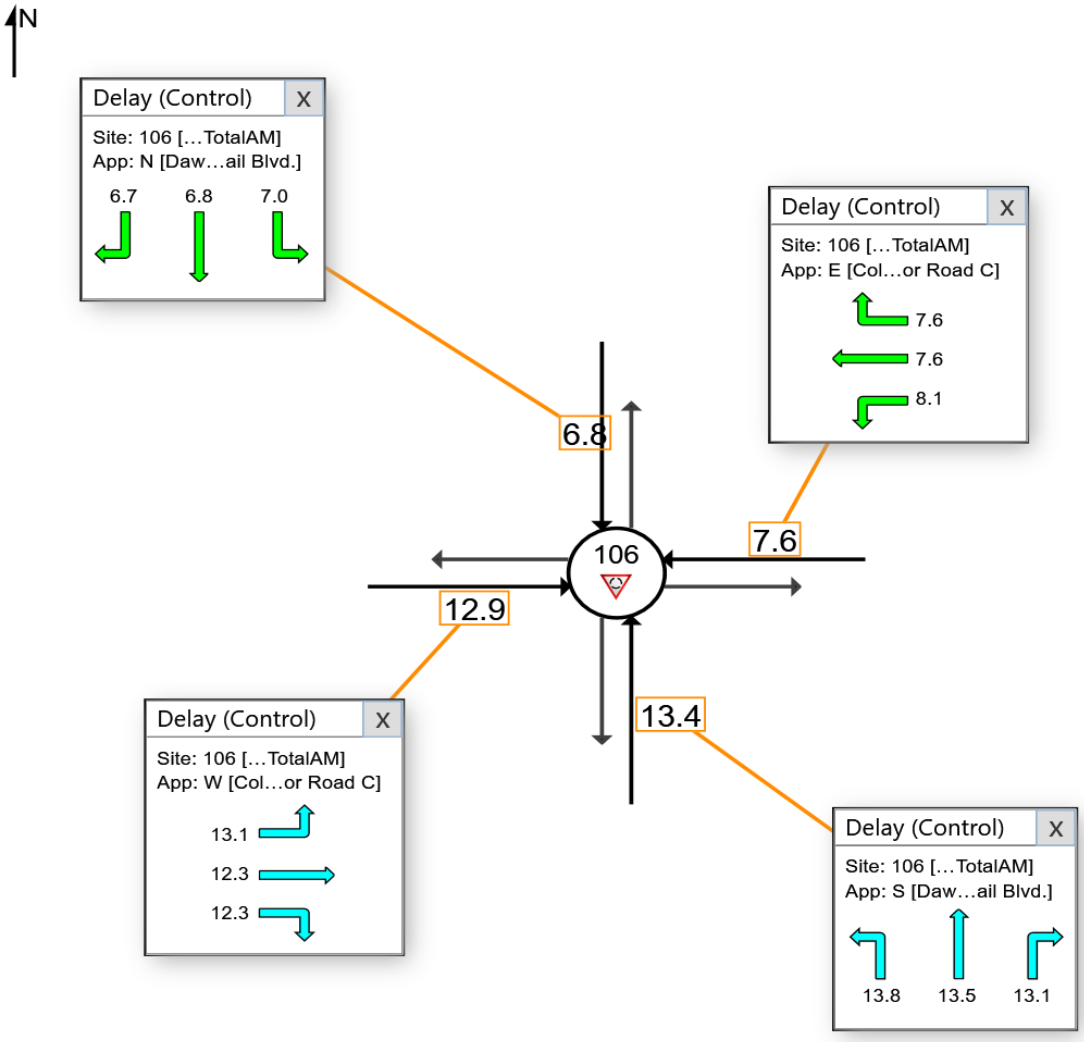
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 106 [Int#106_2040 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

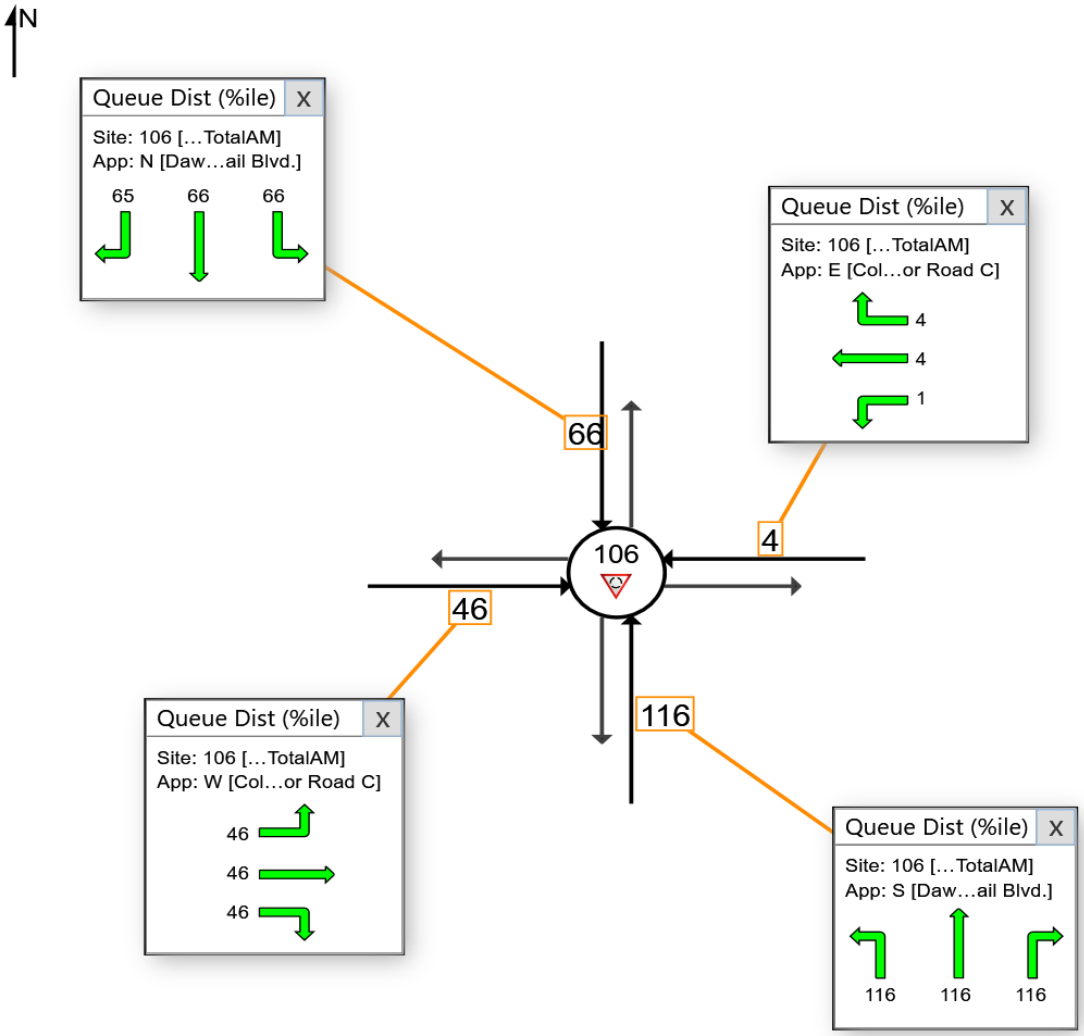
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 106 [Int#106_2040 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popups boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



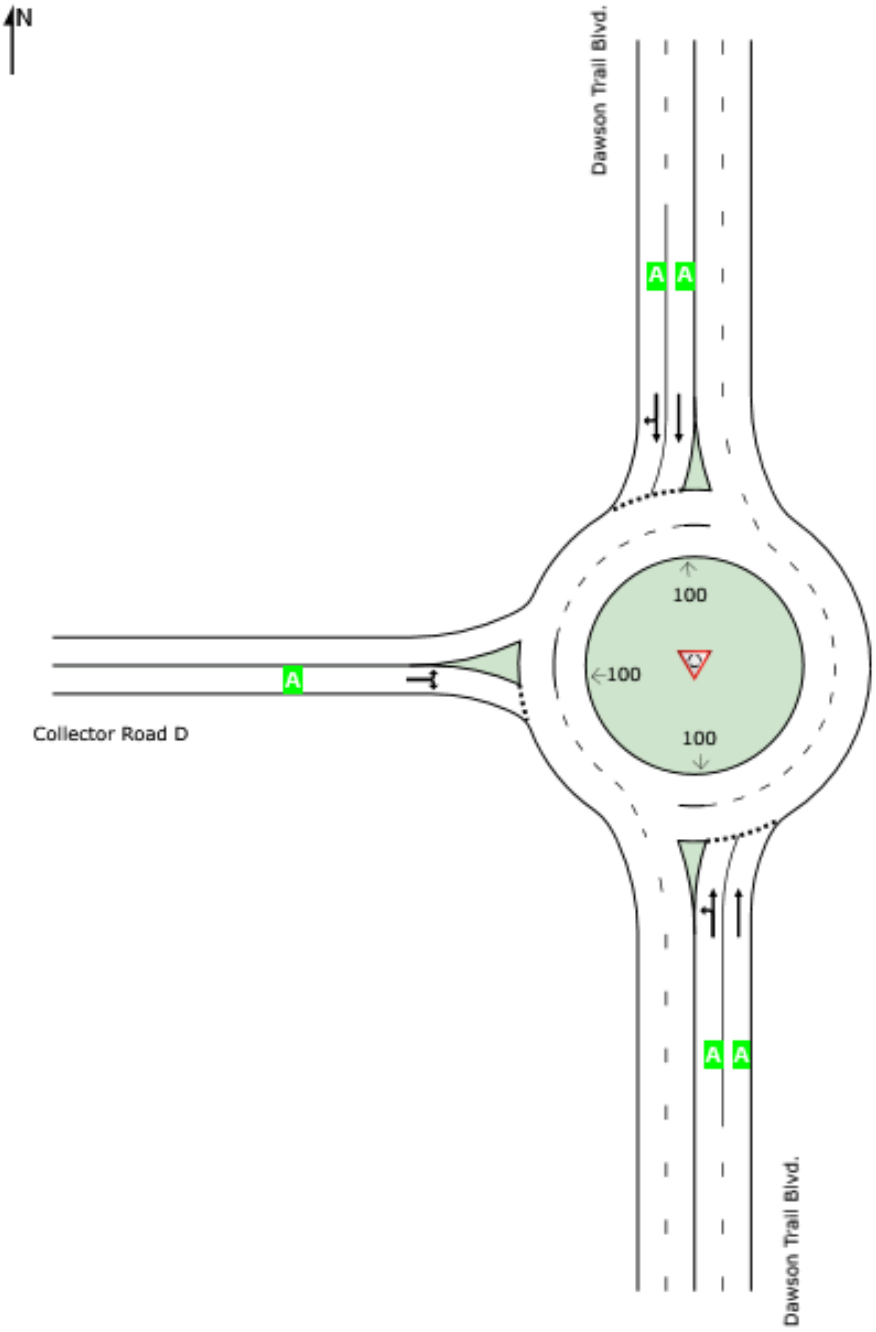
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 107 [Int#107_2040 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches			Intersection
	South	North	West	
LOS	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 10:01:02 AM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int#107.sip9

DELAY (CONTROL)

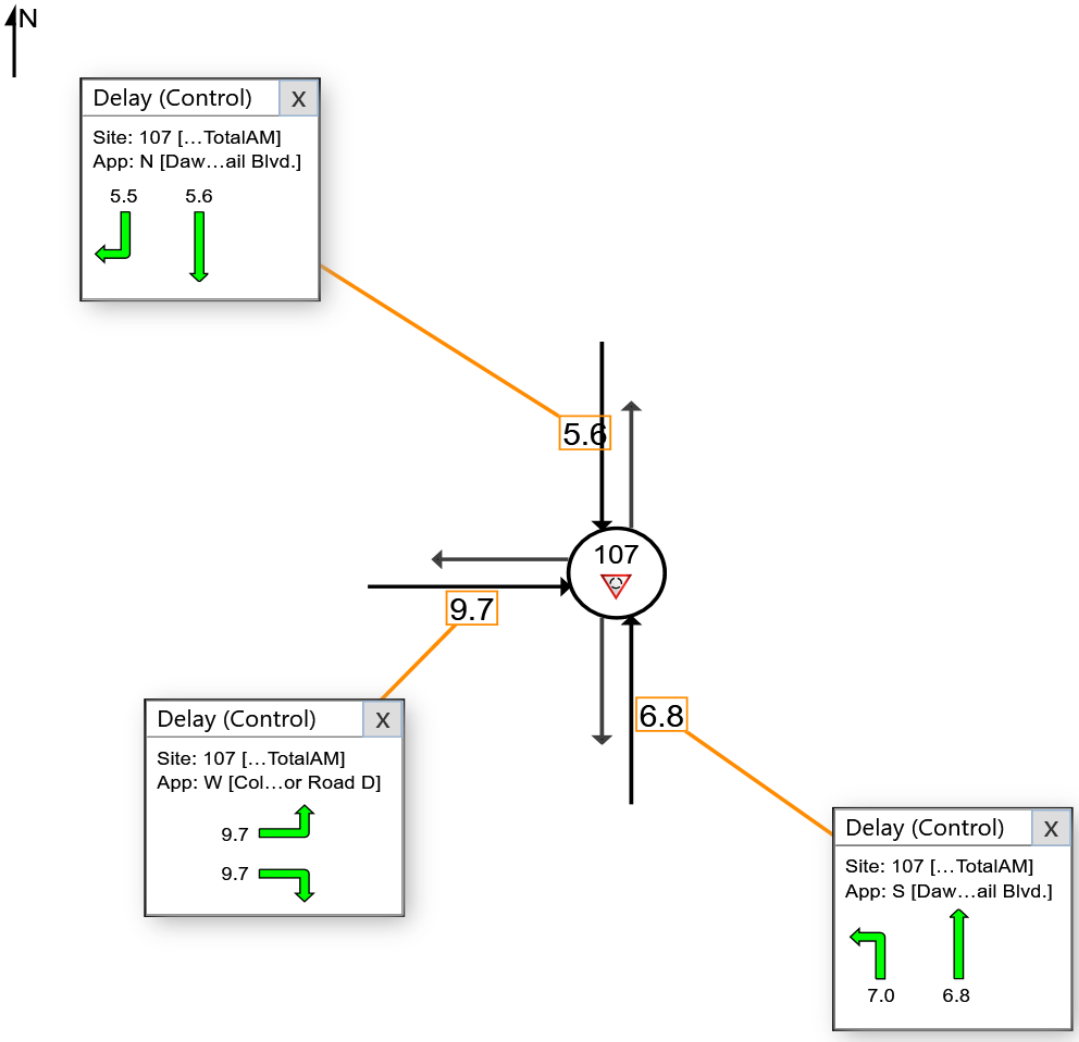
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 107 [Int#107_2040 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

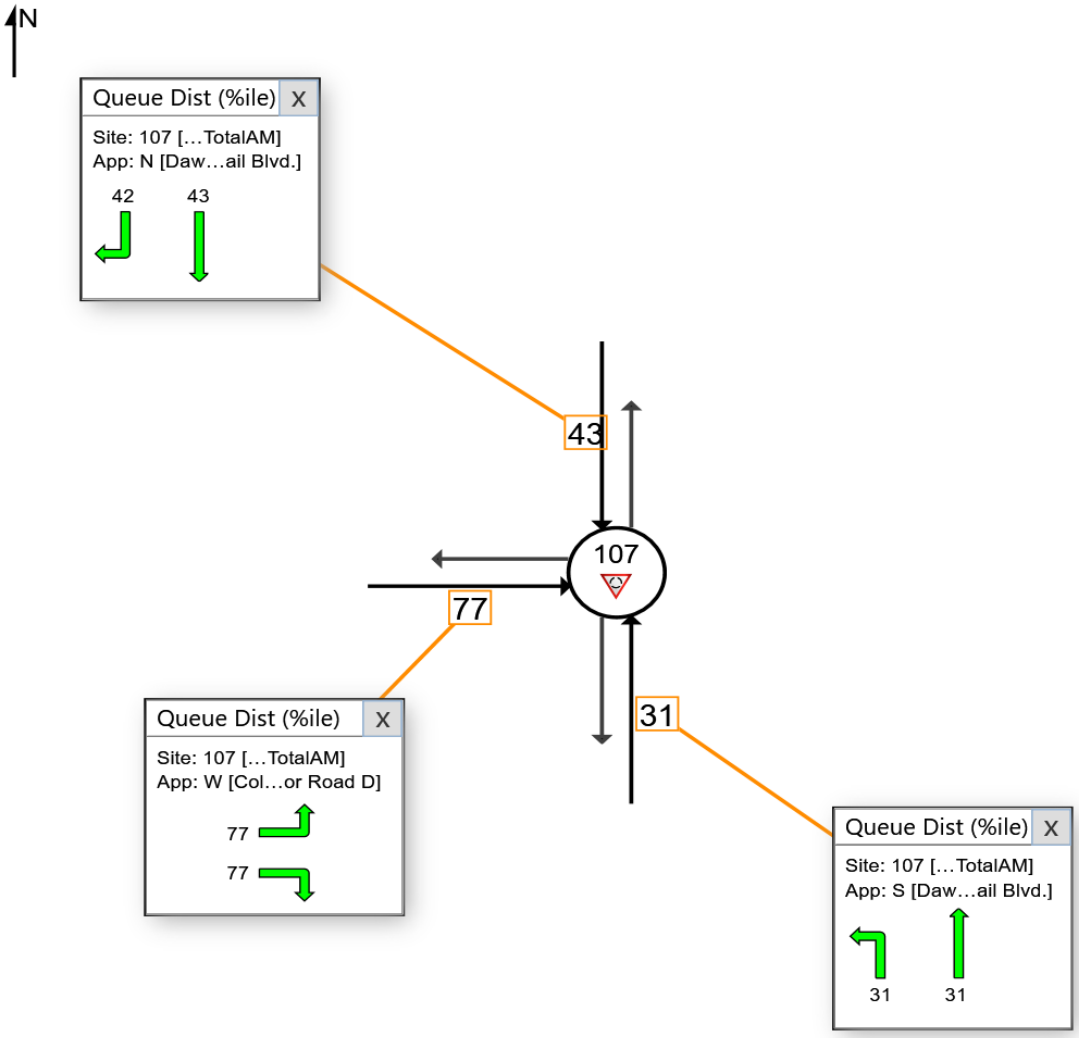
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 107 [Int#107_2040 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



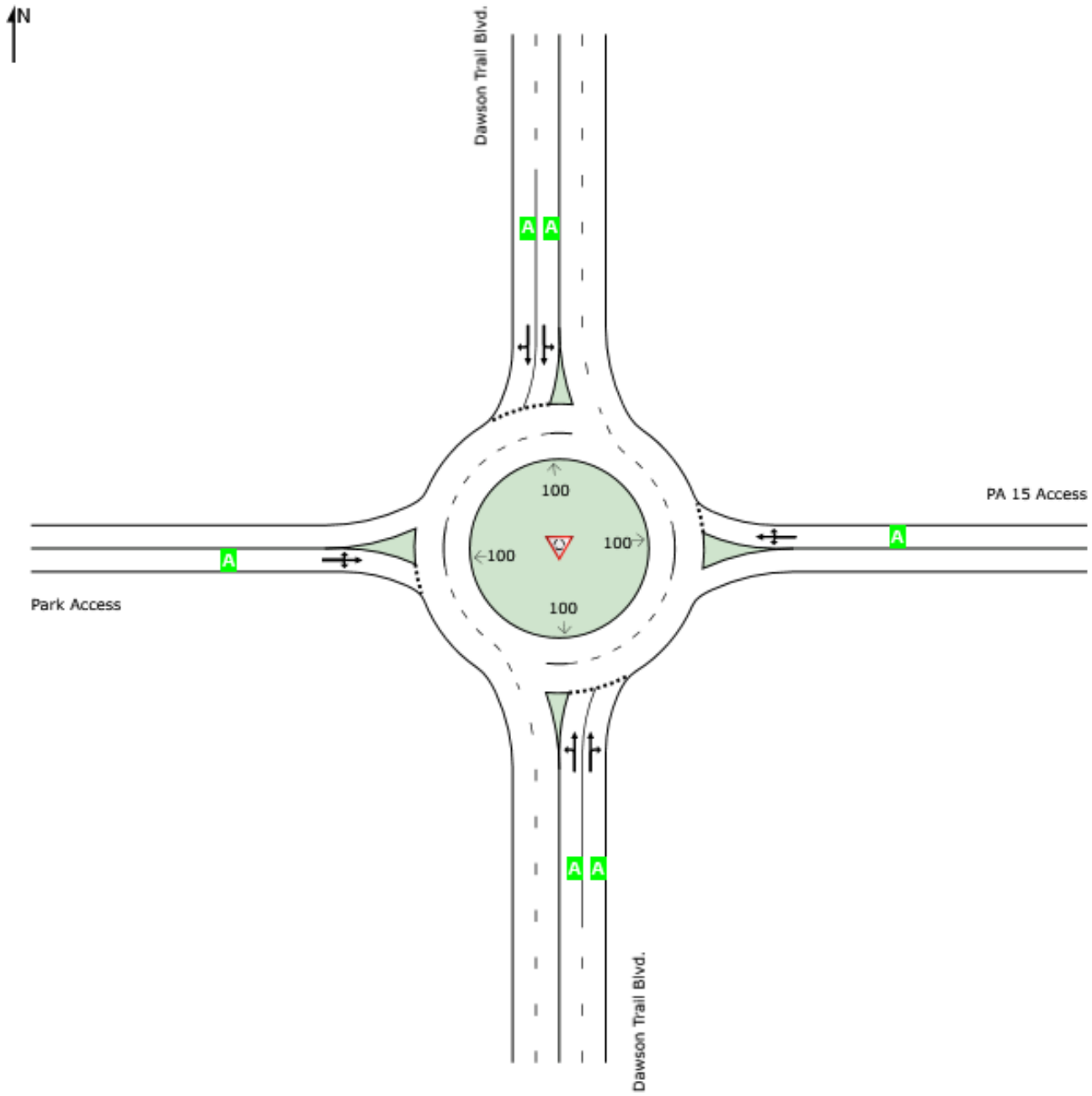
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 101 [Int#108_2040 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	A	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 12:52:31 PM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int#108.sip9

DELAY (CONTROL)

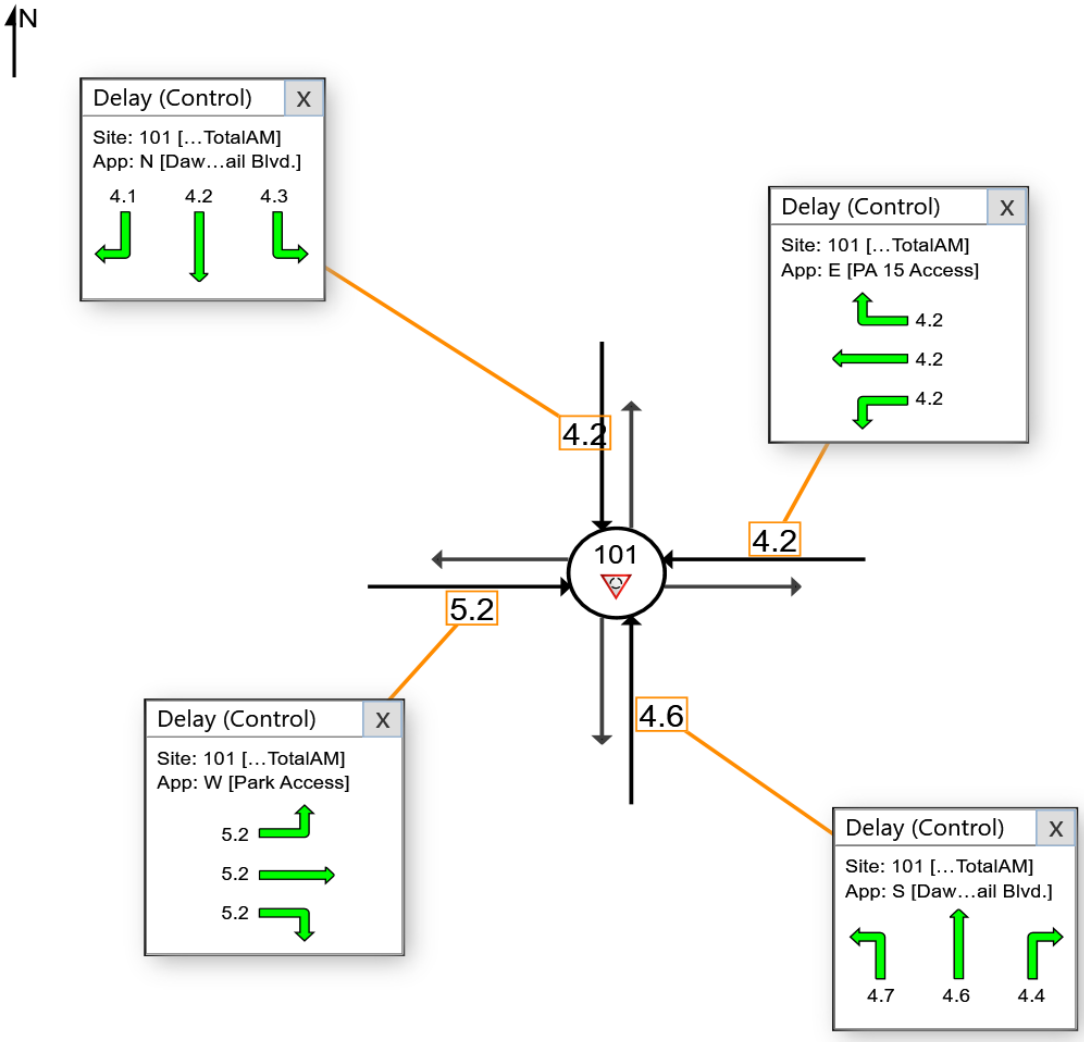
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 101 [Int#108_2040 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

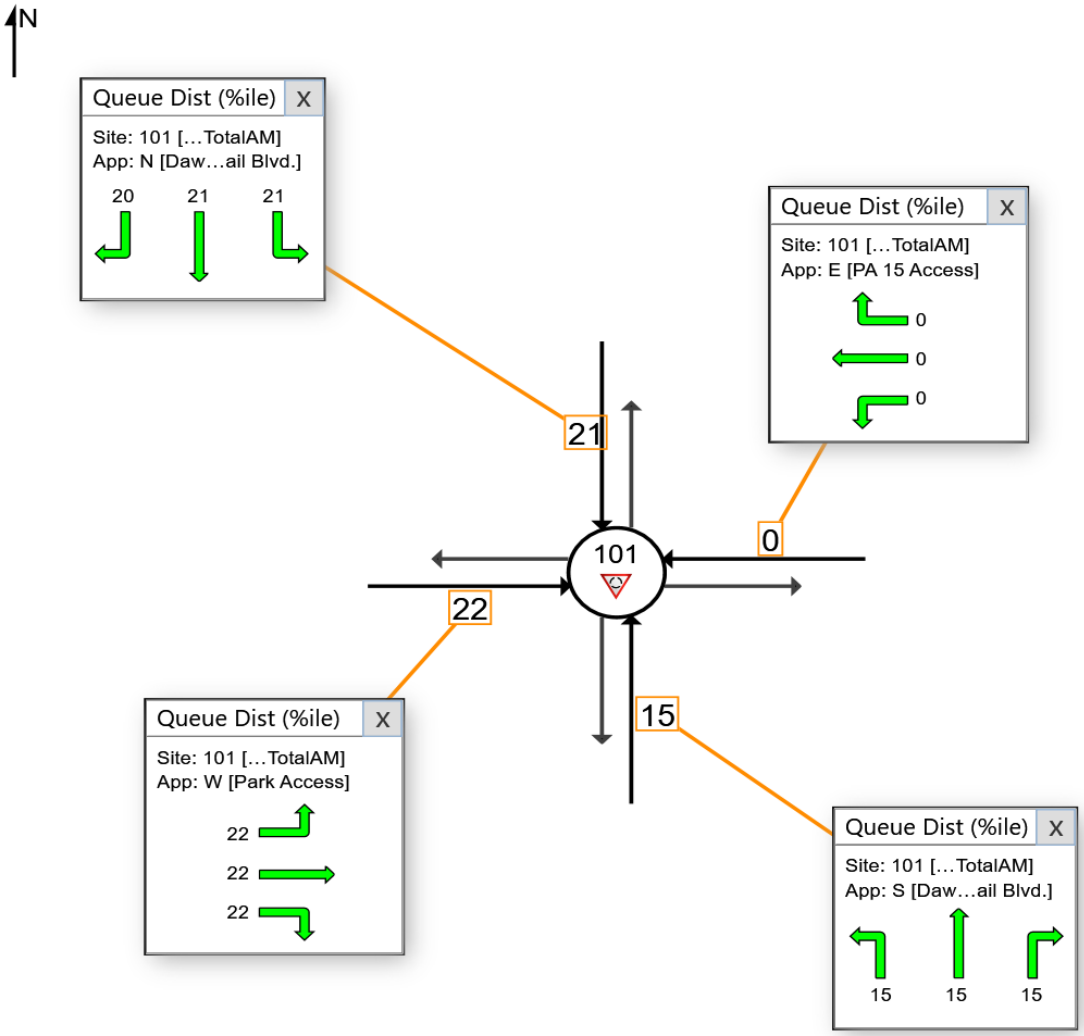
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 101 [Int#108_2040 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

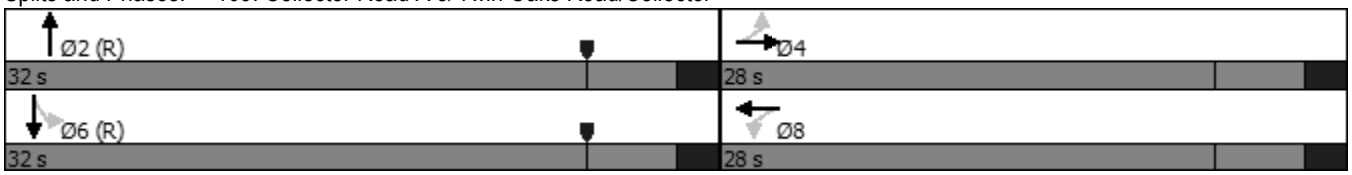
Close All Popups

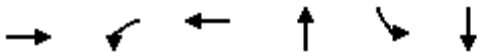


Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	11	5	19	5	570	84	332
Future Volume (vph)	11	5	19	5	570	84	332
Turn Type	Perm	NA	Perm	NA	NA	Perm	NA
Protected Phases		4		8	2		6
Permitted Phases	4		8			6	
Detector Phase	4	4	8	8	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	10.0	10.0	10.0
Minimum Split (s)	28.0	28.0	28.0	28.0	28.0	28.0	28.0
Total Split (s)	28.0	28.0	28.0	28.0	32.0	32.0	32.0
Total Split (%)	46.7%	46.7%	46.7%	46.7%	53.3%	53.3%	53.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)		6.5	6.5	6.5	48.5	48.5	48.5
Actuated g/C Ratio		0.11	0.11	0.11	0.81	0.81	0.81
v/c Ratio		0.12	0.11	0.22	0.25	0.16	0.14

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.25
Intersection Signal Delay: 4.0
Intersection Capacity Utilization 49.2%
Analysis Period (min) 15

Splits and Phases: 109: Collector Road A & Twin Oaks Road/Collector





Lane Group	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	18	21	47	707	91	385
v/c Ratio	0.12	0.11	0.22	0.25	0.16	0.14
Control Delay	24.3	24.8	12.6	3.0	4.1	2.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.3	24.8	12.6	3.0	4.1	2.7
Queue Length 50th (ft)	6	7	2	37	9	18
Queue Length 95th (ft)	21	24	26	64	26	34
Internal Link Dist (ft)	286		174	1511		693
Turn Bay Length (ft)		150			250	
Base Capacity (vph)	525	635	618	2814	576	2836
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.03	0.08	0.25	0.16	0.14

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	5	1	19	5	39	0	570	80	84	332	22
Future Volume (veh/h)	11	5	1	19	5	39	0	570	80	84	332	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	0	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	12	5	1	21	5	42	0	620	87	91	361	24
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	0	2	2	2	2	2
Cap, veh/h	135	37	4	220	11	91	0	2305	323	618	2492	165
Arrive On Green	0.06	0.06	0.06	0.06	0.06	0.06	0.00	0.74	0.74	0.74	0.74	0.74
Sat Flow, veh/h	550	590	67	1410	171	1440	0	3223	438	741	3383	224
Grp Volume(v), veh/h	18	0	0	21	0	47	0	351	356	91	189	196
Grp Sat Flow(s),veh/h/ln	1207	0	0	1410	0	1611	0	1777	1791	741	1777	1830
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	1.7	0.0	3.9	3.9	2.8	1.9	1.9
Cycle Q Clear(g_c), s	1.7	0.0	0.0	0.7	0.0	1.7	0.0	3.9	3.9	6.7	1.9	1.9
Prop In Lane	0.67		0.06	1.00		0.89	0.00		0.24	1.00		0.12
Lane Grp Cap(c), veh/h	177	0	0	220	0	102	0	1309	1319	618	1309	1348
V/C Ratio(X)	0.10	0.00	0.00	0.10	0.00	0.46	0.00	0.27	0.27	0.15	0.14	0.15
Avail Cap(c_a), veh/h	626	0	0	647	0	591	0	1309	1319	618	1309	1348
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.6	0.0	0.0	26.6	0.0	27.1	0.0	2.6	2.6	3.7	2.3	2.3
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.2	0.0	3.2	0.0	0.5	0.5	0.5	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.0	0.3	0.0	0.7	0.0	0.8	0.9	0.4	0.4	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.8	0.0	0.0	26.8	0.0	30.3	0.0	3.1	3.1	4.2	2.6	2.6
LnGrp LOS	C	A	A	C	A	C	A	A	A	A	A	A
Approach Vol, veh/h		18			68			707			476	
Approach Delay, s/veh		26.8			29.2			3.1			2.9	
Approach LOS		C			C			A			A	

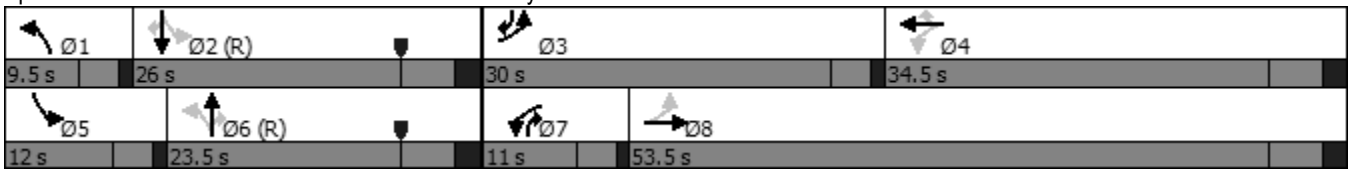
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		50.2		9.8		50.2		9.8				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		26.0		22.0		26.0		22.0				
Max Q Clear Time (g_c+I1), s		5.9		3.7		8.7		3.7				
Green Ext Time (p_c), s		4.4		0.0		2.7		0.2				

Intersection Summary												
HCM 6th Ctrl Delay			4.8									
HCM 6th LOS			A									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	486	1555	265	87	915	195	190	212	145	205	206	427
Future Volume (vph)	486	1555	265	87	915	195	190	212	145	205	206	427
Turn Type	pm+pt	NA	Free	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	3	8		7	4		1	6	7	5	2	3
Permitted Phases	8		Free	4		4	6		6	2		2
Detector Phase	3	8		7	4	4	1	6	7	5	2	3
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0	5.0	5.0	4.0	5.0
Minimum Split (s)	9.5	31.0		11.5	31.0	31.0	9.5	16.0	11.5	9.5	10.0	9.5
Total Split (s)	30.0	53.5		11.0	34.5	34.5	9.5	23.5	11.0	12.0	26.0	30.0
Total Split (%)	30.0%	53.5%		11.0%	34.5%	34.5%	9.5%	23.5%	11.0%	12.0%	26.0%	30.0%
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	1.0	2.0		1.0	2.0	2.0	1.0	2.0	1.0	1.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0	4.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max	None	None	C-Max	None
Act Effct Green (s)	60.5	48.4	100.0	37.4	29.3	29.3	25.0	17.5	25.6	30.0	20.0	51.2
Actuated g/C Ratio	0.60	0.48	1.00	0.37	0.29	0.29	0.25	0.18	0.26	0.30	0.20	0.51
v/c Ratio	0.98	0.96	0.18	0.49	0.93	0.34	0.36	0.69	0.31	0.73	0.58	0.53

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 37.4
Intersection Capacity Utilization 105.2%
Analysis Period (min) 15

Splits and Phases: 1: Wilcox St. & Plum Creek Pkwy.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	512	1637	279	92	963	205	200	223	153	216	217	449
v/c Ratio	0.98	0.96	0.18	0.49	0.93	0.34	0.36	0.69	0.31	0.73	0.58	0.53
Control Delay	61.0	39.2	0.2	23.9	50.9	5.6	27.5	51.2	9.6	44.4	43.2	15.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.0	39.2	0.2	23.9	50.9	5.6	27.5	51.2	9.6	44.4	43.2	15.7
Queue Length 50th (ft)	265	508	0	23	316	0	47	135	15	107	126	147
Queue Length 95th (ft)	#474	#696	0	51	#447	52	75	#229	62	#196	203	234
Internal Link Dist (ft)		553			473			812			658	
Turn Bay Length (ft)	280		250	185			190		195	130		130
Base Capacity (vph)	537	1713	1564	203	1036	608	560	322	499	294	376	867
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.96	0.18	0.45	0.93	0.34	0.36	0.69	0.31	0.73	0.58	0.52

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	486	1555	265	87	915	195	190	212	145	205	206	427
Future Volume (veh/h)	486	1555	265	87	915	195	190	212	145	205	206	427
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1856	1856	1856	1885	1885	1885
Adj Flow Rate, veh/h	512	1637	0	92	963	205	200	223	153	216	217	449
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	1	1	1
Cap, veh/h	538	1740		181	1013	451	481	332	362	283	384	734
Arrive On Green	0.26	0.49	0.00	0.05	0.28	0.28	0.05	0.18	0.18	0.08	0.20	0.20
Sat Flow, veh/h	1781	3554	1585	1781	3554	1582	3428	1856	1570	1795	1885	1595
Grp Volume(v), veh/h	512	1637	0	92	963	205	200	223	153	216	217	449
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1582	1714	1856	1570	1795	1885	1595
Q Serve(g_s), s	23.6	43.6	0.0	3.6	26.6	10.6	4.7	11.2	8.3	8.0	10.4	20.4
Cycle Q Clear(g_c), s	23.6	43.6	0.0	3.6	26.6	10.6	4.7	11.2	8.3	8.0	10.4	20.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	538	1740		181	1013	451	481	332	362	283	384	734
V/C Ratio(X)	0.95	0.94		0.51	0.95	0.45	0.42	0.67	0.42	0.76	0.57	0.61
Avail Cap(c_a), veh/h	544	1740		213	1013	451	481	332	362	283	384	734
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.79	0.79	0.79	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.6	24.2	0.0	26.8	35.1	29.4	31.5	38.3	32.8	34.1	35.8	20.3
Incr Delay (d2), s/veh	26.5	10.7	0.0	0.7	15.0	0.6	0.2	10.4	3.6	10.5	5.9	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.7	19.4	0.0	1.5	13.2	4.0	2.0	6.1	3.5	2.1	5.4	8.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.1	34.8	0.0	27.4	50.0	29.9	31.8	48.8	36.4	44.6	41.7	24.1
LnGrp LOS	D	C		C	D	C	C	D	D	D	D	C
Approach Vol, veh/h		2149	A		1260			576			882	
Approach Delay, s/veh		39.4			45.1			39.6			33.4	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	26.4	29.6	34.5	12.0	23.9	9.2	55.0
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	5.5	20.0	26.0	28.5	8.0	17.5	7.0	47.5
Max Q Clear Time (g_c+I1), s	6.7	22.4	25.6	28.6	10.0	13.2	5.6	45.6
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	1.0	0.0	1.6

Intersection Summary	
HCM 6th Ctrl Delay	39.8
HCM 6th LOS	D

Notes

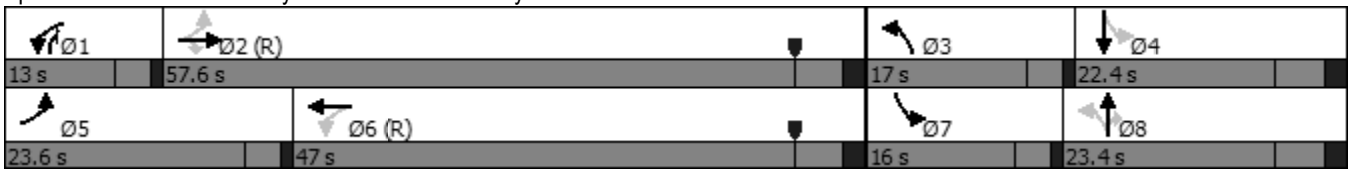
User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	309	1466	205	160	706	240	135	265	270	150	261
Future Volume (vph)	309	1466	205	160	706	240	135	265	270	150	261
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	pm+ov	pm+pt	NA	Free
Protected Phases	5	2		1	6	3	8	1	7	4	
Permitted Phases	2		2	6		8		8	4		Free
Detector Phase	5	2	2	1	6	3	8	1	7	4	
Switch Phase											
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0	3.0	5.0	3.0	3.0	5.0	
Minimum Split (s)	9.5	32.0	32.0	9.5	32.0	9.5	11.0	9.5	9.5	11.0	
Total Split (s)	23.6	57.6	57.6	13.0	47.0	17.0	23.4	13.0	16.0	22.4	
Total Split (%)	21.5%	52.4%	52.4%	11.8%	42.7%	15.5%	21.3%	11.8%	14.5%	20.4%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.0	3.0	3.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	1.0	2.0	1.0	1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	4.0	4.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None	None	
Act Effct Green (s)	69.6	55.2	55.2	58.3	47.8	28.9	14.2	24.8	27.6	13.6	110.0
Actuated g/C Ratio	0.63	0.50	0.50	0.53	0.43	0.26	0.13	0.23	0.25	0.12	1.00
v/c Ratio	0.81	0.89	0.27	0.80	0.63	0.79	0.60	0.65	0.83	0.70	0.18

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 40.6
Intersection Capacity Utilization 88.7%
Analysis Period (min) 15

Splits and Phases: 2: Perry St. & Plum Creek Pkwy.



Twin Mesa Metropolitan District New Service Plan
SV2023-003
Planning Commission Supplemental Memo Page 851 of 1222



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	336	1593	223	168	964	261	147	288	293	163	284
v/c Ratio	0.81	0.89	0.27	0.80	0.63	0.79	0.60	0.65	0.83	0.70	0.18
Control Delay	31.1	33.1	9.5	52.0	23.8	50.0	55.3	28.3	55.1	61.6	0.2
Queue Delay	0.0	24.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.1	57.7	9.5	52.0	23.8	50.0	55.3	28.3	55.1	61.6	0.2
Queue Length 50th (ft)	110	542	44	59	295	150	98	104	172	111	0
Queue Length 95th (ft)	#227	#723	95	m#157	m355	#232	162	189	#279	179	0
Internal Link Dist (ft)		473			1330		455			497	
Turn Bay Length (ft)	170		70	100		185		65	120		120
Base Capacity (vph)	462	1794	839	222	1523	338	297	451	351	283	1615
Starvation Cap Reductn	0	271	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	1.05	0.27	0.76	0.63	0.77	0.49	0.64	0.83	0.58	0.18

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Twin Mesa Metropolitan District New Service Plan
SV2023-003
Planning Commission Supplemental Memo Page 852 of 1222

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	309	1466	205	160	706	210	240	135	265	270	150	261
Future Volume (veh/h)	309	1466	205	160	706	210	240	135	265	270	150	261
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	336	1593	223	168	743	221	261	147	288	293	163	0
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	0	0	0
Cap, veh/h	485	1720	766	209	1175	349	363	298	365	347	283	
Arrive On Green	0.12	0.48	0.48	0.14	0.86	0.86	0.12	0.16	0.16	0.11	0.15	0.00
Sat Flow, veh/h	1795	3582	1596	1795	2720	809	1795	1885	1595	1810	1900	1610
Grp Volume(v), veh/h	336	1593	223	168	489	475	261	147	288	293	163	0
Grp Sat Flow(s),veh/h/ln	1795	1791	1596	1795	1791	1738	1795	1885	1595	1810	1900	1610
Q Serve(g_s), s	10.9	45.8	9.3	5.8	9.0	9.0	13.0	7.8	17.4	12.0	8.8	0.0
Cycle Q Clear(g_c), s	10.9	45.8	9.3	5.8	9.0	9.0	13.0	7.8	17.4	12.0	8.8	0.0
Prop In Lane	1.00		1.00	1.00		0.47	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	485	1720	766	209	773	751	363	298	365	347	283	
V/C Ratio(X)	0.69	0.93	0.29	0.80	0.63	0.63	0.72	0.49	0.79	0.84	0.58	
Avail Cap(c_a), veh/h	591	1720	766	229	773	751	363	298	365	347	283	
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.35	0.35	0.35	0.86	0.86	0.86	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	13.9	26.8	17.3	23.0	4.9	4.9	35.4	42.3	39.9	38.5	43.6	0.0
Incr Delay (d2), s/veh	0.6	4.1	0.3	13.4	3.4	3.5	5.9	0.9	10.6	16.3	2.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	19.3	3.4	2.8	2.5	2.5	6.5	3.7	8.3	3.3	4.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.5	30.9	17.6	36.4	8.3	8.4	41.3	43.2	50.5	54.8	46.0	0.0
LnGrp LOS	B	C	B	D	A	A	D	D	D	D	D	
Approach Vol, veh/h		2152			1132			696			456	A
Approach Delay, s/veh		26.9			12.5			45.5			51.7	
Approach LOS		C			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.8	58.8	17.0	22.4	17.1	53.5	16.0	23.4
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	9.0	51.6	13.0	16.4	19.6	41.0	12.0	17.4
Max Q Clear Time (g_c+I1), s	7.8	47.8	15.0	10.8	12.9	11.0	14.0	19.4
Green Ext Time (p_c), s	0.0	3.2	0.0	0.3	0.2	7.1	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	28.7
HCM 6th LOS	C

Notes

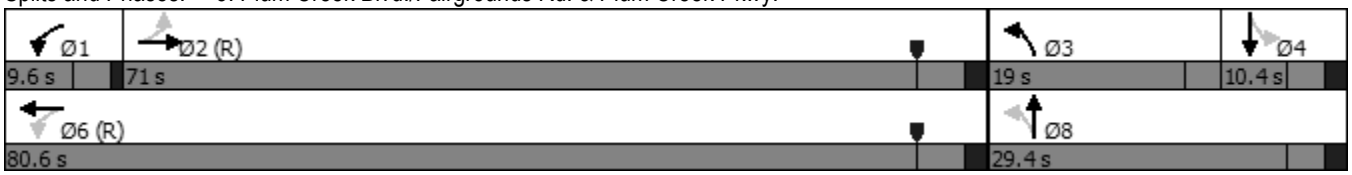
User approved pedestrian interval to be less than phase max green.

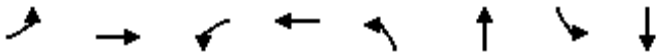
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	35	1506	64	771	290	0	1	1
Future Volume (vph)	35	1506	64	771	290	0	1	1
Turn Type	Perm	NA	pm+pt	NA	pm+pt	NA	Perm	NA
Protected Phases		2	1	6	3	8		4
Permitted Phases	2		6		8		4	
Detector Phase	2	2	1	6	3	8	4	4
Switch Phase								
Minimum Initial (s)	10.0	10.0	5.0	10.0	5.0	5.0	2.0	2.0
Minimum Split (s)	33.0	33.0	9.5	28.0	14.5	10.0	7.0	7.0
Total Split (s)	71.0	71.0	9.6	80.6	19.0	29.4	10.4	10.4
Total Split (%)	64.5%	64.5%	8.7%	73.3%	17.3%	26.7%	9.5%	9.5%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	1.0	2.0	0.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	6.0	3.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead		Lead		Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes		Yes		Yes	Yes
Recall Mode	C-Max	C-Max	None	C-Max	None	Max	Max	Max
Act Effct Green (s)	66.9	66.9	76.6	74.6	26.4	24.4	5.4	5.4
Actuated g/C Ratio	0.61	0.61	0.70	0.68	0.24	0.22	0.05	0.05
v/c Ratio	0.10	1.01	0.44	0.35	0.91	0.16	0.03	0.11

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.01
Intersection Signal Delay: 33.2
Intersection Capacity Utilization 88.3%
Analysis Period (min) 15

Splits and Phases: 3: Plum Creek Blvd./Fairgrounds Rd. & Plum Creek Pkwy.





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	38	2137	70	840	315	70	2	10
v/c Ratio	0.10	1.01	0.44	0.35	0.91	0.16	0.03	0.11
Control Delay	14.2	39.5	17.4	8.0	70.9	2.8	51.0	32.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.2	39.5	17.4	8.0	70.9	2.8	51.0	32.8
Queue Length 50th (ft)	13	~832	14	118	206	0	1	1
Queue Length 95th (ft)	m16	#974	43	150	#320	13	6	11
Internal Link Dist (ft)		1330		637		613		434
Turn Bay Length (ft)	70		55				110	
Base Capacity (vph)	384	2110	158	2400	345	440	69	89
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	1.01	0.44	0.35	0.91	0.16	0.03	0.11

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	1506	460	64	771	2	290	0	64	1	1	5
Future Volume (veh/h)	35	1506	460	64	771	2	290	0	64	1	1	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1870	1870	1870	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	38	1637	500	70	838	2	315	0	70	2	2	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.60	0.60	0.60
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	0	0	0
Cap, veh/h	449	1647	478	137	2467	6	388	0	354	132	16	65
Arrive On Green	0.60	0.60	0.60	0.04	0.68	0.68	0.15	0.00	0.22	0.05	0.05	0.05
Sat Flow, veh/h	659	2737	794	1781	3637	9	1795	0	1598	1352	332	1329
Grp Volume(v), veh/h	38	1041	1096	70	409	431	315	0	70	2	0	10
Grp Sat Flow(s),veh/h/ln	659	1791	1740	1781	1777	1869	1795	0	1598	1352	0	1661
Q Serve(g_s), s	2.8	60.8	66.2	1.5	10.6	10.6	16.0	0.0	3.9	0.2	0.0	0.6
Cycle Q Clear(g_c), s	5.0	60.8	66.2	1.5	10.6	10.6	16.0	0.0	3.9	0.2	0.0	0.6
Prop In Lane	1.00		0.46	1.00		0.00	1.00		1.00	1.00		0.80
Lane Grp Cap(c), veh/h	449	1078	1047	137	1205	1267	388	0	354	132	0	82
V/C Ratio(X)	0.08	0.97	1.05	0.51	0.34	0.34	0.81	0.00	0.20	0.02	0.00	0.12
Avail Cap(c_a), veh/h	449	1078	1047	156	1205	1267	388	0	354	132	0	82
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.41	0.41	0.41	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.2	20.8	21.9	27.8	7.4	7.4	41.8	0.0	34.8	49.8	0.0	50.0
Incr Delay (d2), s/veh	0.2	11.2	31.6	2.9	0.8	0.7	11.5	0.0	1.2	0.2	0.0	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	26.0	33.1	1.2	3.8	4.0	9.6	0.0	1.7	0.1	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.4	32.1	53.5	30.7	8.2	8.1	53.3	0.0	36.1	50.0	0.0	53.1
LnGrp LOS	B	C	D	C	A	A	D	A	D	D	A	D
Approach Vol, veh/h		2175			910			385			12	
Approach Delay, s/veh		42.5			9.9			50.2			52.6	
Approach LOS		D			A			D			D	

Timer - Assigned Phs	1	2	3	4		6		8				
Phs Duration (G+Y+Rc), s	8.4	72.2	19.0	10.4		80.6		29.4				
Change Period (Y+Rc), s	4.0	6.0	3.0	5.0		6.0		5.0				
Max Green Setting (Gmax), s	5.6	65.0	16.0	5.4		74.6		24.4				
Max Q Clear Time (g_c+I1), s	3.5	68.2	18.0	2.6		12.6		5.9				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0		6.1		0.2				

Intersection Summary			
HCM 6th Ctrl Delay		34.8	
HCM 6th LOS		C	

Notes

User approved pedestrian interval to be less than phase max green.

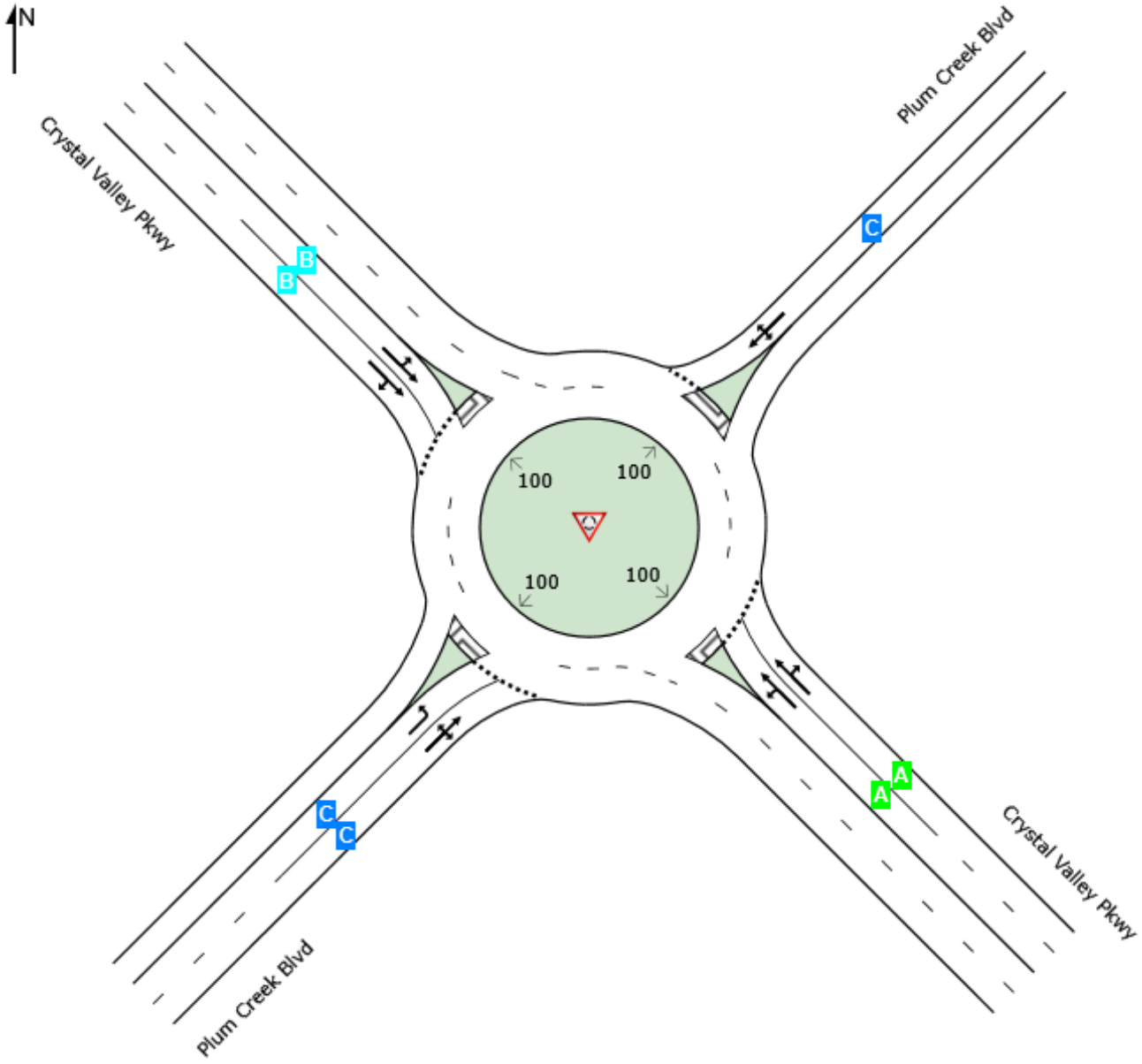
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 005 [Int #5_2040 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
LOS	A	C	B	C	B



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 7:02:43 AM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #5.sip9

DELAY (CONTROL)

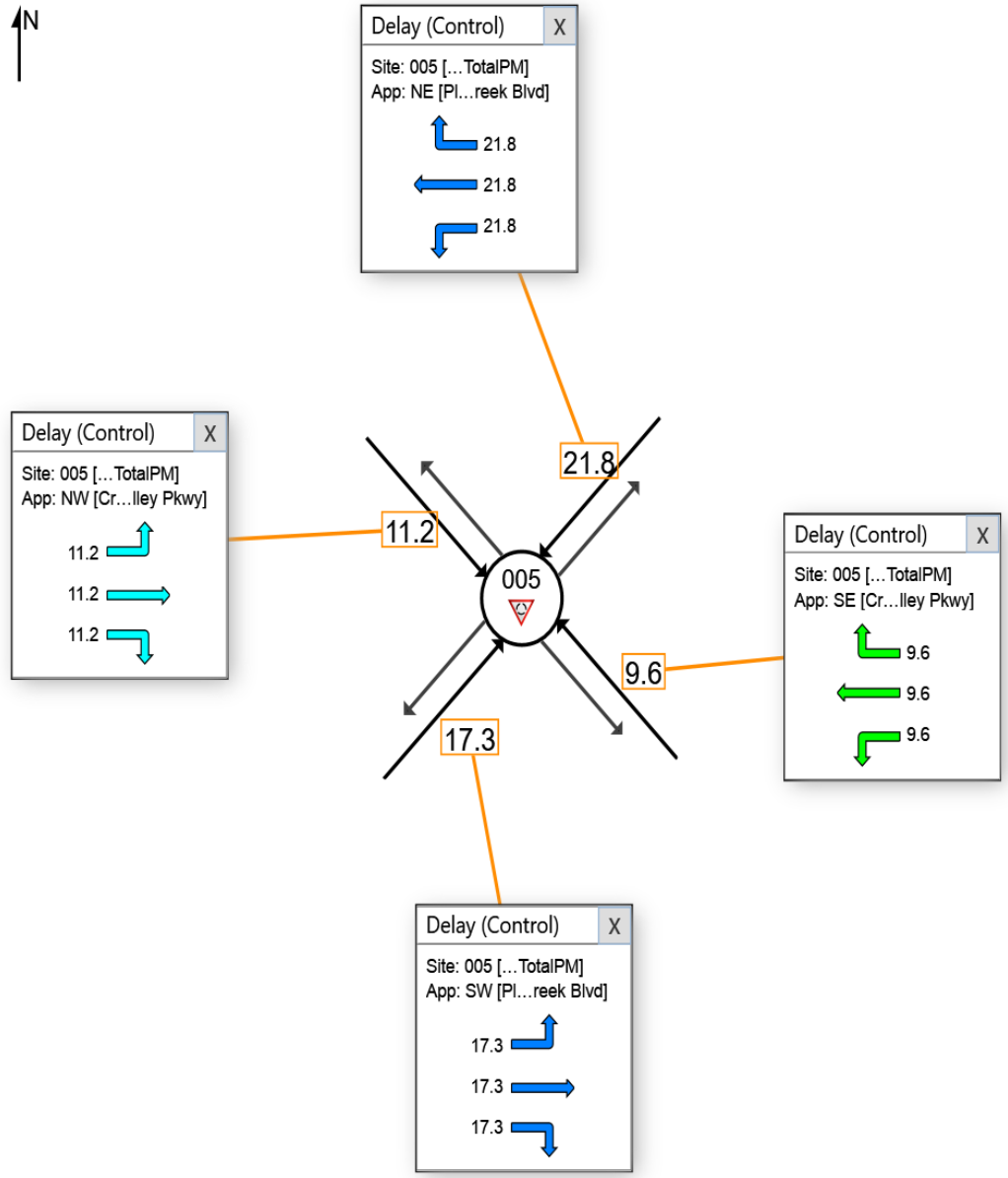
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 005 [Int #5_2040 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popups boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



Colour code based on Level of Service



LOS A LOS B LOS C LOS D LOS E LOS F

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Roundabout Level of Service Method: Same as Sign Control
Delay Model: HCM Delay Formula (Geometric Delay is not included).

Approach values are flow-weighted average values for vehicle movements (pedestrian delays not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 7:02:43 AM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #5.sip9

QUEUE DISTANCE (PERCENTILE)

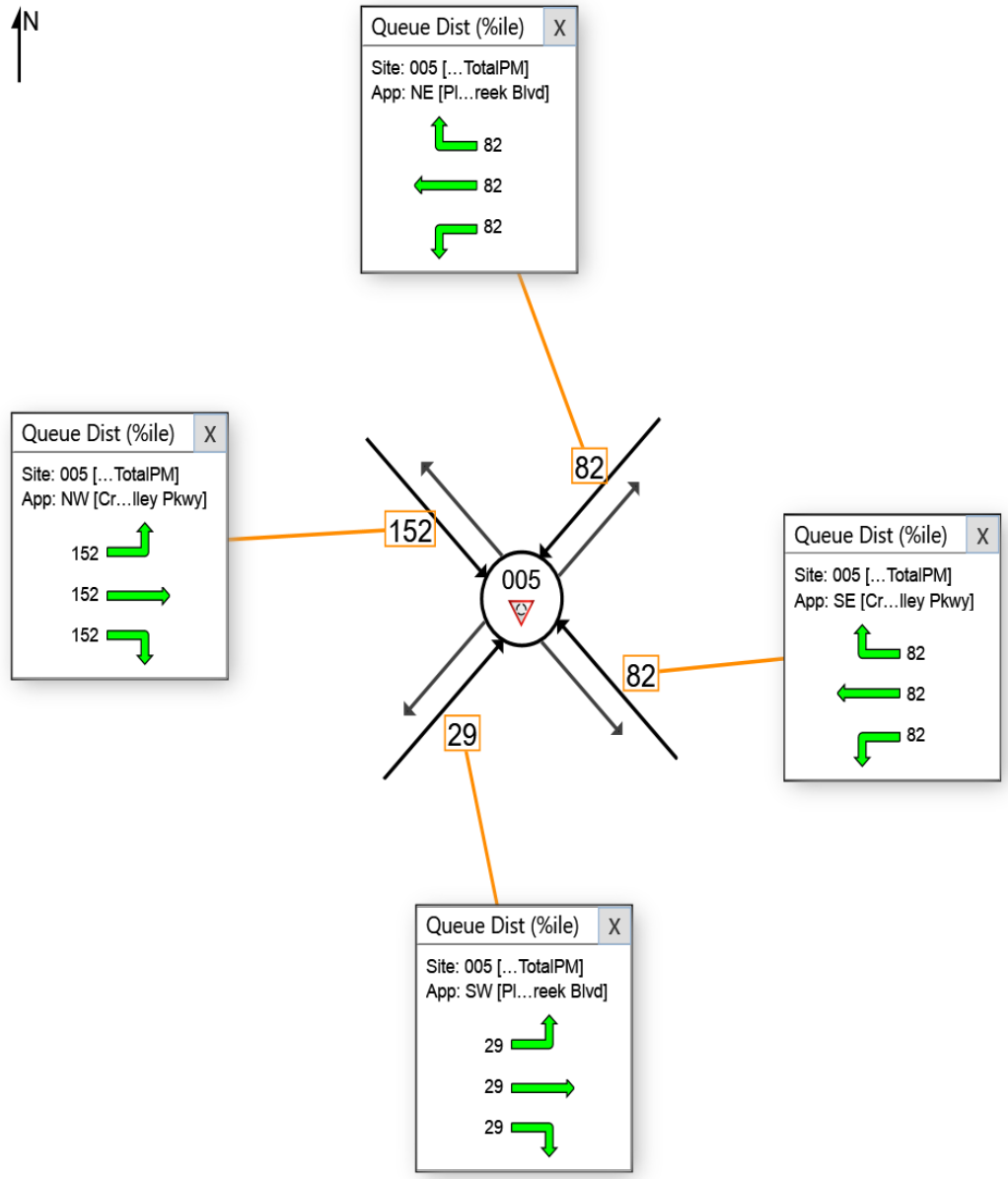
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 005 [Int #5_2040 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



Colour code based on Queue Storage Ratio



[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0]

Queue Model: HCM Queue Formula.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

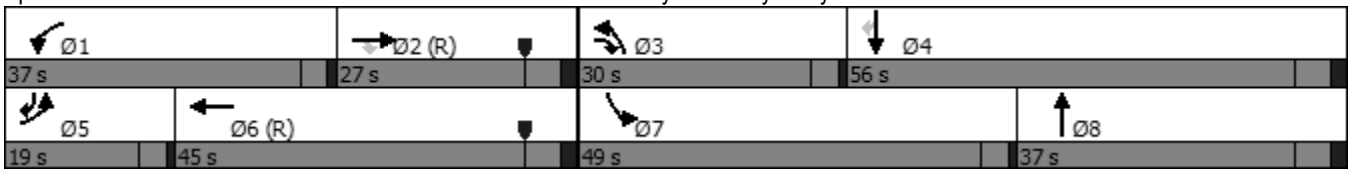
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 7:02:43 AM

Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #5.sip9

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	252	397	40	1031	614	582	23	353	1401	800	420	391
Future Volume (vph)	252	397	40	1031	614	582	23	353	1401	800	420	391
Turn Type	Prot	NA	pm+ov	Prot	NA	Free	Prot	NA	Free	Prot	NA	pm+ov
Protected Phases	5	2	3	1	6		3	8		7	4	5
Permitted Phases			2			Free			Free			4
Detector Phase	5	2	3	1	6		3	8		7	4	5
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0		5.0	10.0		5.0	10.0	5.0
Minimum Split (s)	11.0	23.0	11.0	11.0	23.0		11.0	33.0		11.0	33.0	11.0
Total Split (s)	19.0	27.0	30.0	37.0	45.0		30.0	37.0		49.0	56.0	19.0
Total Split (%)	12.7%	18.0%	20.0%	24.7%	30.0%		20.0%	24.7%		32.7%	37.3%	12.7%
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0		3.0	4.0		3.0	4.0	3.0
All-Red Time (s)	1.0	2.0	1.0	1.0	2.0		1.0	2.0		1.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	4.0	4.0	6.0		4.0	6.0		4.0	6.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	Max	C-Max	Max	Max	C-Max		Max	Max		Max	Max	Max
Act Effct Green (s)	15.0	21.0	53.0	33.0	39.0	150.0	26.0	31.0	150.0	45.0	50.0	71.0
Actuated g/C Ratio	0.10	0.14	0.35	0.22	0.26	1.00	0.17	0.21	1.00	0.30	0.33	0.47
v/c Ratio	0.74	0.81	0.06	0.95	0.67	0.37	0.07	0.49	0.89	0.78	0.36	0.41

Intersection Summary
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 40.4
Intersection Capacity Utilization 79.8%
Analysis Period (min) 15

Splits and Phases: 7: Dawson Trails Blvd. & Collector Road A/Crystal Valley Pkwy.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	257	405	41	1052	627	594	23	360	1430	816	429	399
v/c Ratio	0.74	0.81	0.06	0.95	0.67	0.37	0.07	0.49	0.89	0.78	0.36	0.41
Control Delay	79.3	76.0	0.2	74.7	54.1	0.7	52.8	55.1	8.7	54.4	39.0	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.3	76.0	0.2	74.7	54.1	0.7	52.8	55.1	8.7	54.4	39.0	3.3
Queue Length 50th (ft)	128	205	0	363	292	0	19	165	0	378	167	0
Queue Length 95th (ft)	#178	#277	0	#451	361	0	47	218	0	457	216	57
Internal Link Dist (ft)		1283			1733			1960			1008	
Turn Bay Length (ft)	200		200	500			500		1000	500		500
Base Capacity (vph)	346	500	635	1108	929	1599	309	738	1599	1040	1191	967
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.81	0.06	0.95	0.67	0.37	0.07	0.49	0.89	0.78	0.36	0.41

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	252	397	40	1031	614	582	23	353	1401	800	420	391
Future Volume (veh/h)	252	397	40	1031	614	582	23	353	1401	800	420	391
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	257	405	41	1052	627	0	23	360	0	816	429	399
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	348	501	501	1114	931		311	740		1045	1194	692
Arrive On Green	0.10	0.14	0.14	0.22	0.26	0.00	0.17	0.21	0.00	0.30	0.33	0.33
Sat Flow, veh/h	3483	3582	1598	5063	3582	1598	1795	3582	1598	3483	3582	1598
Grp Volume(v), veh/h	257	405	41	1052	627	0	23	360	0	816	429	399
Grp Sat Flow(s),veh/h/ln	1742	1791	1598	1688	1791	1598	1795	1791	1598	1742	1791	1598
Q Serve(g_s), s	10.8	16.4	2.7	30.7	23.6	0.0	1.6	13.3	0.0	32.1	13.6	28.3
Cycle Q Clear(g_c), s	10.8	16.4	2.7	30.7	23.6	0.0	1.6	13.3	0.0	32.1	13.6	28.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	348	501	501	1114	931		311	740		1045	1194	692
V/C Ratio(X)	0.74	0.81	0.08	0.94	0.67		0.07	0.49		0.78	0.36	0.58
Avail Cap(c_a), veh/h	348	501	501	1114	931		311	740		1045	1194	692
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.66	0.66	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.6	62.5	36.3	57.6	49.8	0.0	51.9	52.5	0.0	48.0	37.9	32.1
Incr Delay (d2), s/veh	13.1	13.1	0.3	12.2	2.6	0.0	0.5	2.3	0.0	5.8	0.8	3.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	8.4	1.1	14.4	10.9	0.0	0.8	6.3	0.0	14.8	6.2	11.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.7	75.6	36.6	69.8	52.4	0.0	52.4	54.8	0.0	53.8	38.7	35.6
LnGrp LOS	E	E	D	E	D		D	D		D	D	D
Approach Vol, veh/h		703			1679	A		383	A		1644	
Approach Delay, s/veh		74.5			63.3			54.6			45.4	
Approach LOS		E			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	37.0	27.0	30.0	56.0	19.0	45.0	49.0	37.0
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	33.0	21.0	26.0	50.0	15.0	39.0	45.0	31.0
Max Q Clear Time (g_c+I1), s	32.7	18.4	3.6	30.3	12.8	25.6	34.1	15.3
Green Ext Time (p_c), s	0.2	0.7	0.0	4.3	0.2	3.6	2.6	2.0

Intersection Summary	
HCM 6th Ctrl Delay	57.7
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

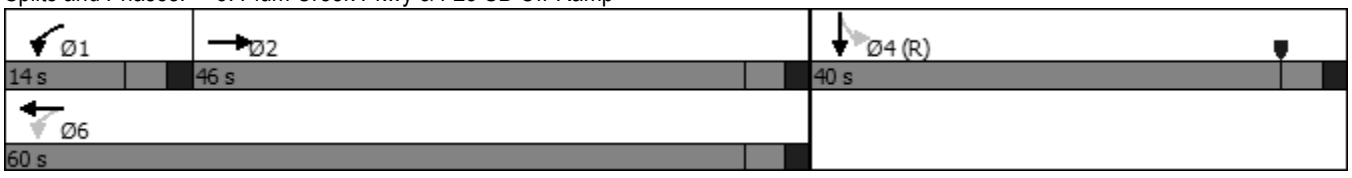
Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

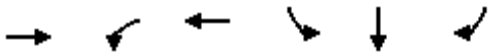
Twin Mesa Metropolitan District New Service Plan
SV2023-003
Planning Commission Supplemental Memo Page 865 of 1222

Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1153	155	810	1175	5	635
Future Volume (vph)	1153	155	810	1175	5	635
Turn Type	NA	pm+pt	NA	Perm	NA	Free
Protected Phases	2	1	6		4	
Permitted Phases		6		4		Free
Detector Phase	2	1	6	4	4	
Switch Phase						
Minimum Initial (s)	10.0	5.0	10.0	5.0	5.0	
Minimum Split (s)	30.0	10.0	30.0	10.0	10.0	
Total Split (s)	46.0	14.0	60.0	40.0	40.0	
Total Split (%)	46.0%	14.0%	60.0%	40.0%	40.0%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes				
Recall Mode	Max	None	Max	C-Max	C-Max	
Act Effct Green (s)	42.4	56.0	56.0	36.0	36.0	100.0
Actuated g/C Ratio	0.42	0.56	0.56	0.36	0.36	1.00
v/c Ratio	0.69	0.66	0.43	0.71	0.70	0.42

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 40 (40%), Referenced to phase 4:SBTL, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 20.9
Intersection Capacity Utilization 101.3%
Analysis Period (min) 15

Splits and Phases: 8: Plum Creek Pkwy & I-25 SB Off-Ramp





Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1467	161	844	820	409	661
v/c Ratio	0.69	0.66	0.43	0.71	0.70	0.42
Control Delay	25.9	36.3	3.6	31.5	35.3	0.8
Queue Delay	0.1	0.3	1.0	1.7	3.2	0.0
Total Delay	25.9	36.6	4.6	33.3	38.4	0.8
Queue Length 50th (ft)	326	41	22	243	242	0
Queue Length 95th (ft)	351	m69	m45	318	367	0
Internal Link Dist (ft)	437		181		388	
Turn Bay Length (ft)						160
Base Capacity (vph)	2133	250	1981	1159	581	1583
Starvation Cap Reductn	0	5	821	0	0	0
Spillback Cap Reductn	59	0	0	186	93	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.66	0.73	0.84	0.84	0.42

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1153	255	155	810	0	0	0	0	1175	5	635
Future Volume (veh/h)	0	1153	255	155	810	0	0	0	0	1175	5	635
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	1201	266	161	844	0				1228	0	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1858	412	286	1990	0				1924	0	
Arrive On Green	0.00	0.44	0.43	0.05	0.38	0.00				0.36	0.00	0.00
Sat Flow, veh/h	0	4350	926	1781	3647	0				5344	0	1585
Grp Volume(v), veh/h	0	978	489	161	844	0				1228	0	0
Grp Sat Flow(s),veh/h/ln	0	1702	1704	1781	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	22.4	22.5	4.5	17.6	0.0				19.1	0.0	0.0
Cycle Q Clear(g_c), s	0.0	22.4	22.5	4.5	17.6	0.0				19.1	0.0	0.0
Prop In Lane	0.00		0.54	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1513	757	286	1990	0				1924	0	
V/C Ratio(X)	0.00	0.65	0.65	0.56	0.42	0.00				0.64	0.00	
Avail Cap(c_a), veh/h	0	1513	757	329	1990	0				1924	0	
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.50	0.50	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	21.7	21.9	17.6	19.3	0.0				26.6	0.0	0.0
Incr Delay (d2), s/veh	0.0	2.1	4.2	0.9	0.3	0.0				1.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	9.1	9.6	1.9	7.8	0.0				8.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	23.8	26.1	18.5	19.6	0.0				28.2	0.0	0.0
LnGrp LOS	A	C	C	B	B	A				C	A	
Approach Vol, veh/h		1467			1005						1228	A
Approach Delay, s/veh		24.6			19.4						28.2	
Approach LOS		C			B						C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	11.6	48.4		40.0		60.0
Change Period (Y+Rc), s	5.0	5.0		5.0		5.0
Max Green Setting (Gmax), s	9.0	41.0		35.0		55.0
Max Q Clear Time (g_c+I1), s	6.5	24.5		21.1		19.6
Green Ext Time (p_c), s	0.1	9.4		4.6		7.1

Intersection Summary		
HCM 6th Ctrl Delay		24.4
HCM 6th LOS		C

Notes

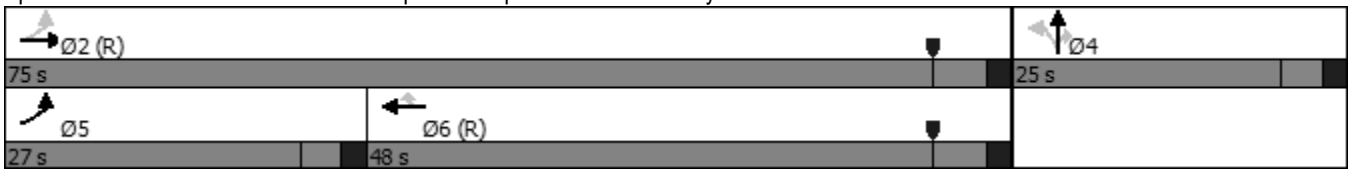
User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	473	1855	820	955	186	5	210
Future Volume (vph)	473	1855	820	955	186	5	210
Turn Type	pm+pt	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6			4	
Permitted Phases	2			6	4		4
Detector Phase	5	2	6	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0	5.0
Minimum Split (s)	10.0	31.0	24.0	24.0	40.0	40.0	40.0
Total Split (s)	27.0	75.0	48.0	48.0	25.0	25.0	25.0
Total Split (%)	27.0%	75.0%	48.0%	48.0%	25.0%	25.0%	25.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-2.0	-2.0	-2.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max
Act Effct Green (s)	71.0	71.0	44.0	44.0	21.0	21.0	21.0
Actuated g/C Ratio	0.71	0.71	0.44	0.44	0.21	0.21	0.21
v/c Ratio	1.00	0.52	0.85	0.60	0.40	0.40	0.34

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 83 (83%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 24.8
Intersection Capacity Utilization 101.3%
Analysis Period (min) 15

Splits and Phases: 9: I-25 NB Off-Ramp/On-Ramp & Plum Creek Pkwy





Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	483	1893	1246	565	142	136	131
v/c Ratio	1.00	0.52	0.85	0.60	0.40	0.40	0.34
Control Delay	59.1	6.7	29.7	4.7	38.1	30.4	15.9
Queue Delay	34.2	2.6	0.0	0.0	0.0	0.0	0.0
Total Delay	93.3	9.3	29.7	4.7	38.1	30.4	15.9
Queue Length 50th (ft)	~269	173	354	2	83	63	24
Queue Length 95th (ft)	#461	236	457	72	145	126	78
Internal Link Dist (ft)		181	431			480	
Turn Bay Length (ft)					350		150
Base Capacity (vph)	482	3610	1471	946	353	341	384
Starvation Cap Reductn	96	1552	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.25	0.92	0.85	0.60	0.40	0.40	0.34

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	473	1855	0	0	820	955	186	5	210	0	0	0
Future Volume (veh/h)	473	1855	0	0	820	955	186	5	210	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	483	1893	0	0	789	1006	262	0	140			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	487	3625	0	0	823	1395	748	0	333			
Arrive On Green	0.46	1.00	0.00	0.00	0.44	0.44	0.21	0.00	0.21			
Sat Flow, veh/h	1781	5274	0	0	1870	3170	3563	0	1585			
Grp Volume(v), veh/h	483	1893	0	0	789	1006	262	0	140			
Grp Sat Flow(s),veh/h/ln	1781	1702	0	0	1870	1585	1781	0	1585			
Q Serve(g_s), s	22.5	0.0	0.0	0.0	40.9	26.0	6.3	0.0	7.7			
Cycle Q Clear(g_c), s	22.5	0.0	0.0	0.0	40.9	26.0	6.3	0.0	7.7			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	487	3625	0	0	823	1395	748	0	333			
V/C Ratio(X)	0.99	0.52	0.00	0.00	0.96	0.72	0.35	0.00	0.42			
Avail Cap(c_a), veh/h	487	3625	0	0	823	1395	748	0	333			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.66	0.66	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	19.9	0.0	0.0	0.0	27.1	23.0	33.7	0.0	34.2			
Incr Delay (d2), s/veh	30.8	0.4	0.0	0.0	22.8	3.3	1.3	0.0	3.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	7.4	0.1	0.0	0.0	22.5	9.9	2.8	0.0	7.3			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.7	0.4	0.0	0.0	49.9	26.2	35.0	0.0	38.1			
LnGrp LOS	D	A	A	A	D	C	C	A	D			
Approach Vol, veh/h		2376			1795			402				
Approach Delay, s/veh		10.6			36.6			36.1				
Approach LOS		B			D			D				

Timer - Assigned Phs	2		4	5	6				
Phs Duration (G+Y+Rc), s	75.0		25.0	27.0	48.0				
Change Period (Y+Rc), s	6.0		5.0	5.0	6.0				
Max Green Setting (Gmax), s	69.0		20.0	22.0	42.0				
Max Q Clear Time (g_c+I1), s	2.0		9.7	24.5	42.9				
Green Ext Time (p_c), s	27.7		1.1	0.0	0.0				

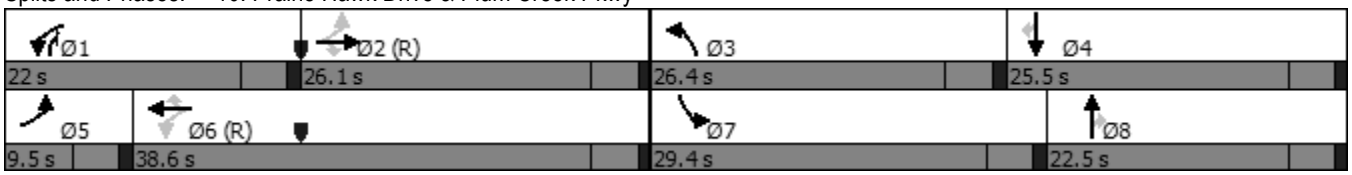
Intersection Summary		
HCM 6th Ctrl Delay	23.1	
HCM 6th LOS	C	

Notes
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	571	254	439	929	98	166	564	352	270	516	38
Future Volume (vph)	37	571	254	439	929	98	166	564	352	270	516	38
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases	2		2	6		6			8			4
Detector Phase	5	2	2	1	6	6	3	8	1	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	9.5	9.5	22.5	22.5
Total Split (s)	9.5	26.1	26.1	22.0	38.6	38.6	26.4	22.5	22.0	29.4	25.5	25.5
Total Split (%)	9.5%	26.1%	26.1%	22.0%	38.6%	38.6%	26.4%	22.5%	22.0%	29.4%	25.5%	25.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	Max	Max
Act Effct Green (s)	27.6	22.1	22.1	44.1	38.4	38.4	15.9	29.6	51.6	14.3	28.0	28.0
Actuated g/C Ratio	0.28	0.22	0.22	0.44	0.38	0.38	0.16	0.30	0.52	0.14	0.28	0.28
v/c Ratio	0.23	0.79	0.49	1.22	0.74	0.16	0.64	0.59	0.43	0.60	0.57	0.07

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.22
Intersection Signal Delay: 41.5
Intersection Capacity Utilization 76.9%
Analysis Period (min) 15

Splits and Phases: 10: Prairie Hawk Drive & Plum Creek Pkwy

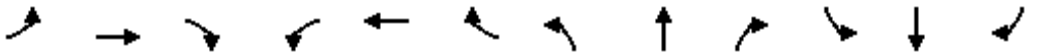


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	40	621	276	477	1010	107	180	613	383	293	561	41
v/c Ratio	0.23	0.79	0.49	1.22	0.74	0.16	0.64	0.59	0.43	0.60	0.57	0.07
Control Delay	21.1	45.5	7.3	142.5	25.1	1.9	49.4	33.3	11.7	45.0	34.4	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.1	45.5	7.3	142.5	25.1	1.9	49.4	33.3	11.7	45.0	34.4	0.3
Queue Length 50th (ft)	14	197	0	~318	321	4	109	174	89	91	161	0
Queue Length 95th (ft)	34	263	65	#519	384	18	168	245	175	128	234	0
Internal Link Dist (ft)		832			922			624			893	
Turn Bay Length (ft)	230		230	230		230	230		230	230		250
Base Capacity (vph)	171	782	564	392	1358	678	396	1046	881	871	991	561
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.79	0.49	1.22	0.74	0.16	0.45	0.59	0.43	0.34	0.57	0.07

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	571	254	439	929	98	166	564	352	270	516	38
Future Volume (veh/h)	37	571	254	439	929	98	166	564	352	270	516	38
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	40	621	276	477	1010	0	180	613	383	293	561	41
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	278	1135	506	501	1637		224	801	642	399	764	341
Arrive On Green	0.04	0.32	0.32	0.18	0.46	0.00	0.13	0.23	0.23	0.12	0.22	0.22
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	40	621	276	477	1010	0	180	613	383	293	561	41
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1777	1585	1728	1777	1585
Q Serve(g_s), s	1.5	14.4	14.4	17.6	21.4	0.0	9.8	16.1	18.9	8.2	14.7	2.1
Cycle Q Clear(g_c), s	1.5	14.4	14.4	17.6	21.4	0.0	9.8	16.1	18.9	8.2	14.7	2.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	278	1135	506	501	1637		224	801	642	399	764	341
V/C Ratio(X)	0.14	0.55	0.55	0.95	0.62		0.80	0.77	0.60	0.73	0.73	0.12
Avail Cap(c_a), veh/h	308	1135	506	501	1637		399	801	642	878	764	341
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.4	28.1	28.1	19.5	20.3	0.0	42.5	36.3	23.3	42.7	36.6	31.6
Incr Delay (d2), s/veh	0.2	1.9	4.2	28.3	1.8	0.0	6.6	4.5	1.5	2.6	6.2	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	6.1	5.9	10.3	8.5	0.0	4.7	7.3	7.0	3.6	6.9	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.6	30.0	32.2	47.9	22.1	0.0	49.1	40.7	24.8	45.4	42.8	32.4
LnGrp LOS	C	C	C	D	C		D	D	C	D	D	C
Approach Vol, veh/h		937			1487	A		1176			895	
Approach Delay, s/veh		30.3			30.3			36.8			43.2	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.0	35.9	16.6	25.5	7.9	50.1	15.5	26.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	17.5	21.6	21.9	21.0	5.0	34.1	24.9	18.0
Max Q Clear Time (g_c+I1), s	19.6	16.4	11.8	16.7	3.5	23.4	10.2	20.9
Green Ext Time (p_c), s	0.0	2.2	0.3	1.5	0.0	4.7	0.9	0.0

Intersection Summary	
HCM 6th Ctrl Delay	34.6
HCM 6th LOS	C

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

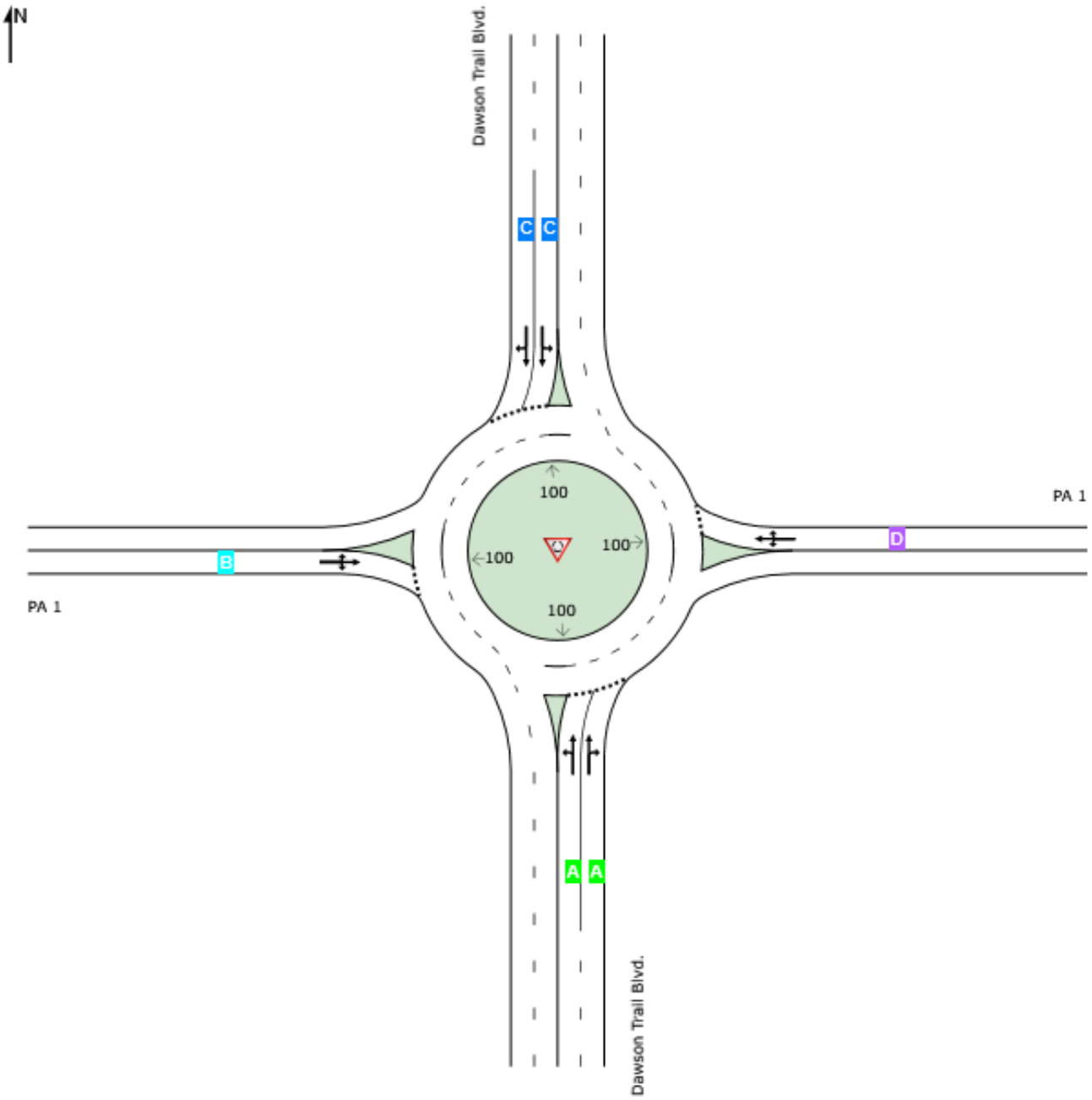
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 101 [Int#101_2040 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	A	D	C	B	B



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 8:54:59 AM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int#101.sip9

DELAY (CONTROL)

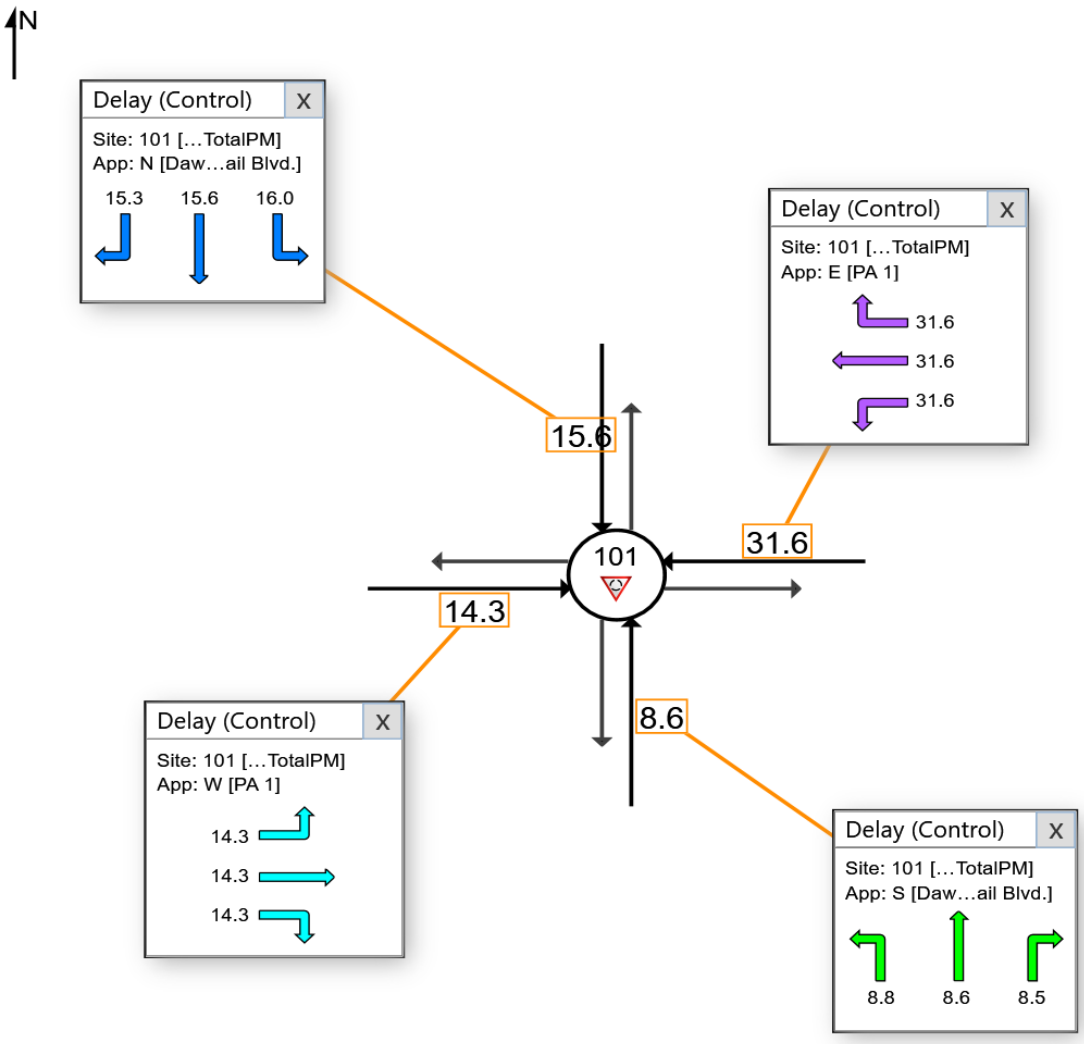
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 101 [Int#101_2040 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

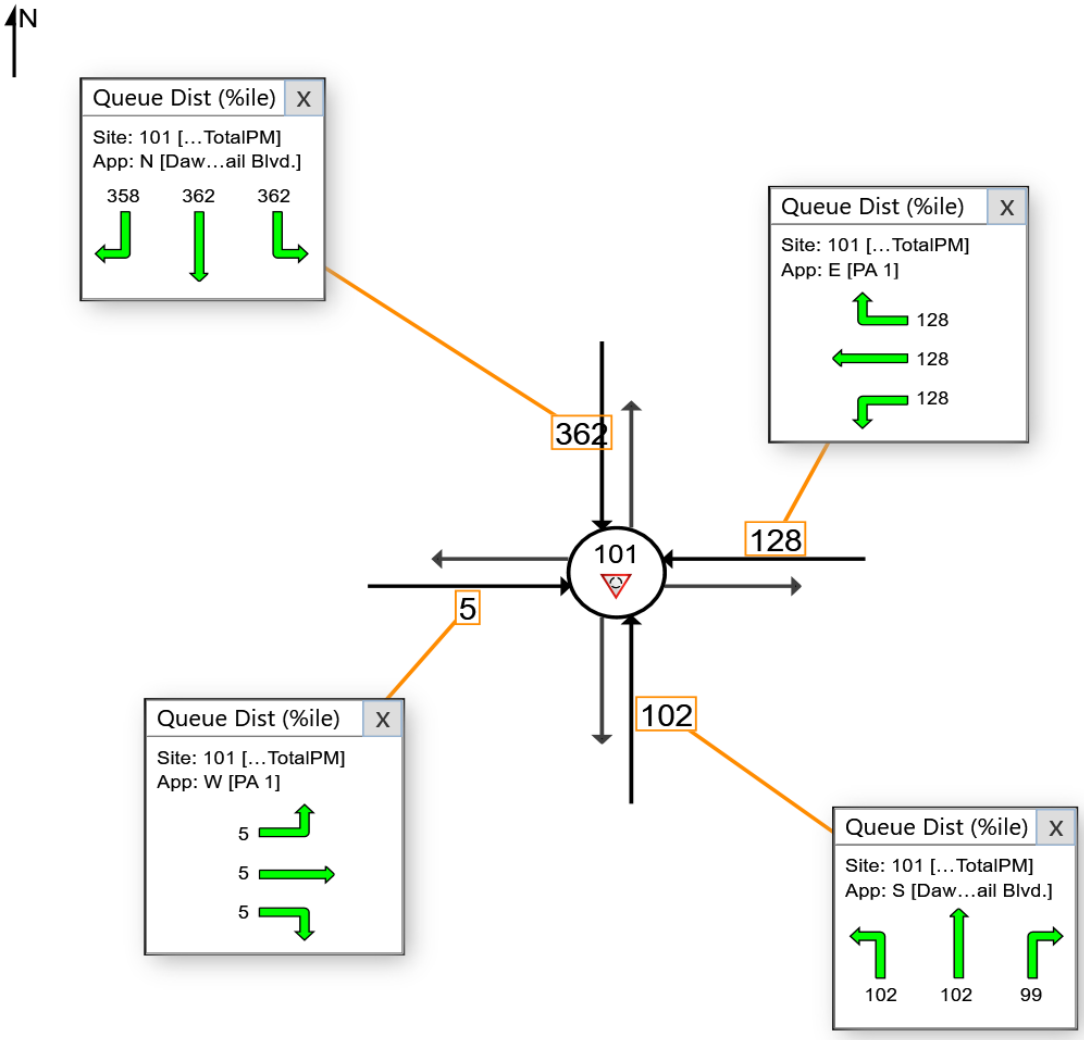
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 101 [Int#101_2040 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



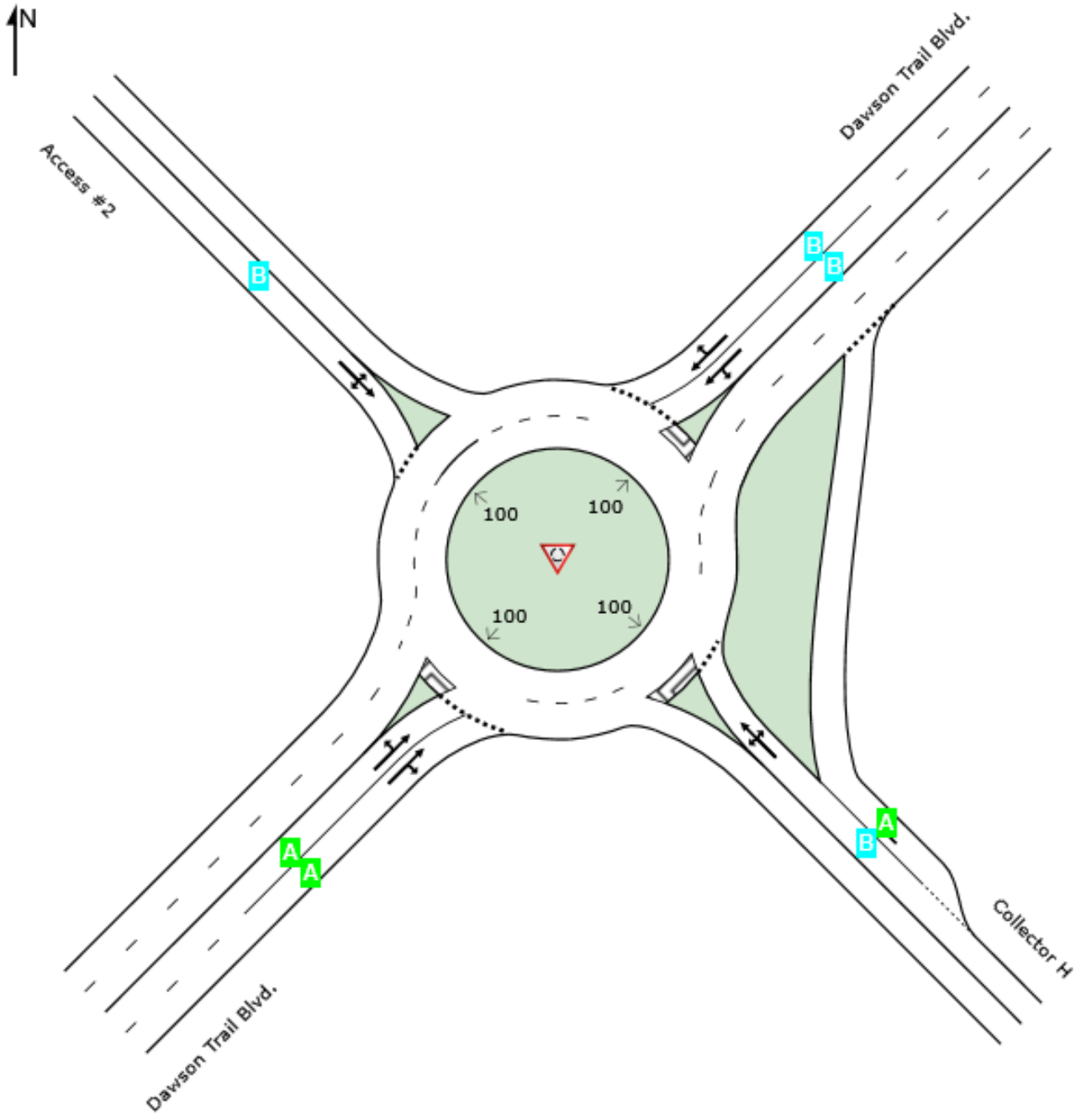
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 102 [Int #102_2040 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
LOS	B	B	B	A	B



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 9:08:09 AM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #102-mod.sip9

DELAY (CONTROL)

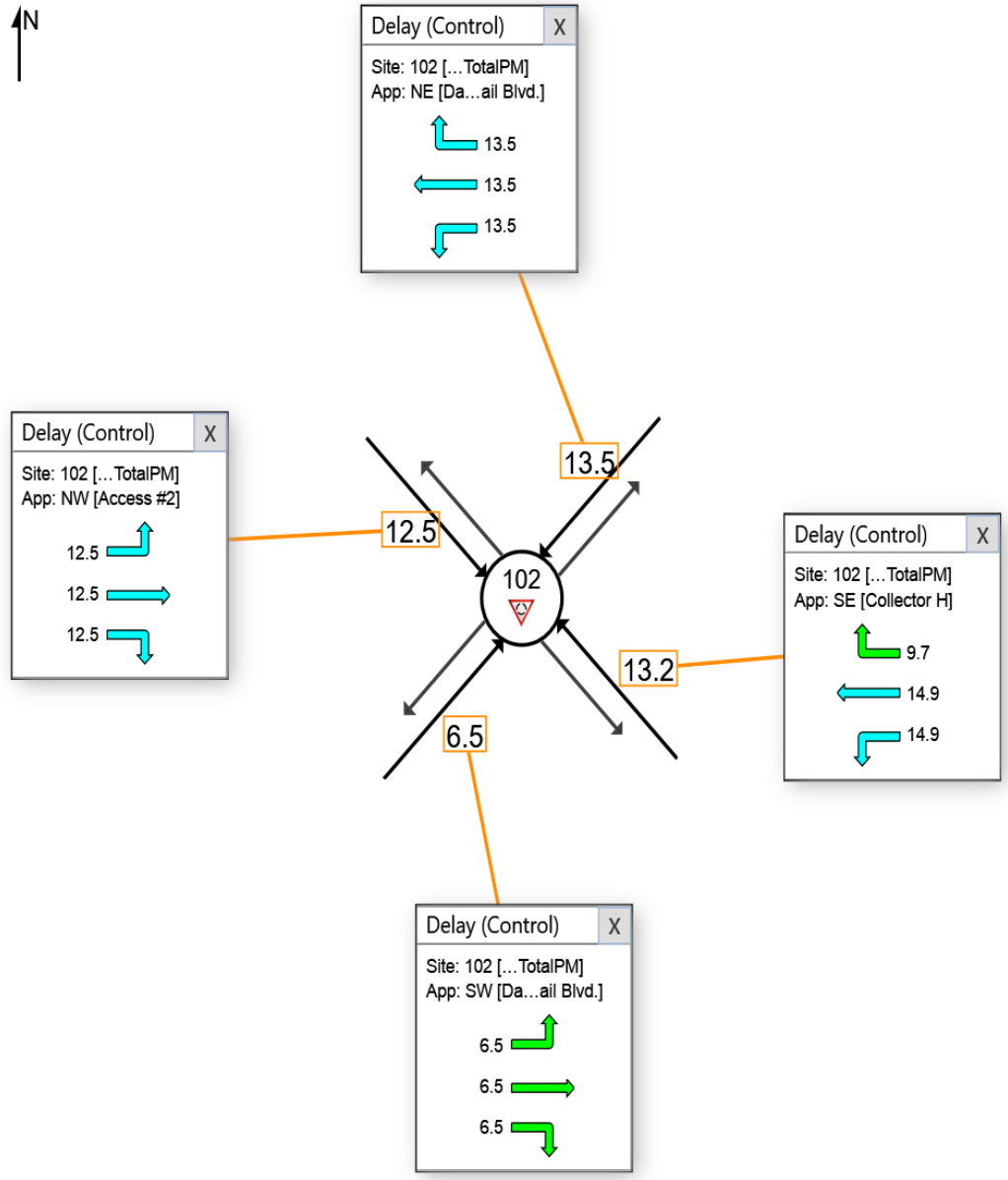
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 102 [Int #102_2040 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popups boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

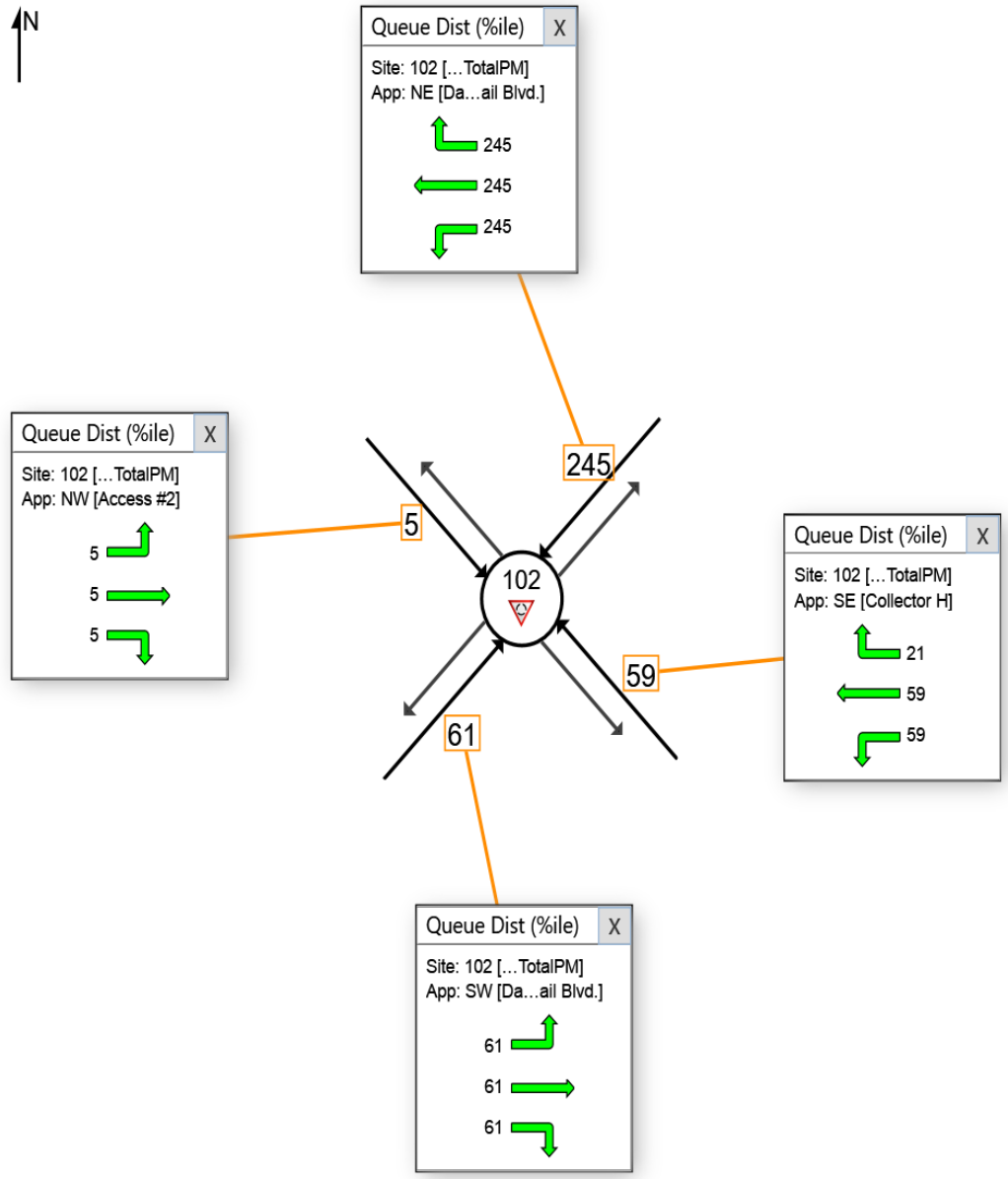
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 102 [Int #102_2040 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↱			↱	↰	↑↑	↱	↰	↑↑	↱
Traffic Vol, veh/h	0	0	40	0	0	58	30	987	170	58	1571	10
Future Vol, veh/h	0	0	40	0	0	58	30	987	170	58	1571	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	200	-	0	200	-	200
Veh in Median Storage, #	-	0	-	-	16974	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	43	0	0	63	33	1073	185	63	1708	11

Major/Minor	Minor2					Major1			Major2		
Conflicting Flow All	-	-	854			1719	0	0	1258	0	0
Stage 1	-	-	-			-	-	-	-	-	-
Stage 2	-	-	-			-	-	-	-	-	-
Critical Hdwy	-	-	6.94			4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-			-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-			-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32			2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	302			364	-	-	549	-	-
Stage 1	0	0	-			-	-	-	-	-	-
Stage 2	0	0	-			-	-	-	-	-	-
Platoon blocked, %							-	-		-	-
Mov Cap-1 Maneuver	-	0	302			364	-	-	549	-	-
Mov Cap-2 Maneuver	-	0	-			-	-	-	-	-	-
Stage 1	-	0	-			-	-	-	-	-	-
Stage 2	-	0	-			-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.9	0.4	0.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	SBL	SBT	SBR
Capacity (veh/h)	364	-	-	302	549	-	-
HCM Lane V/C Ratio	0.09	-	-	0.144	0.115	-	-
HCM Control Delay (s)	15.9	-	-	18.9	12.4	-	-
HCM Lane LOS	C	-	-	C	B	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.5	0.4	-	-

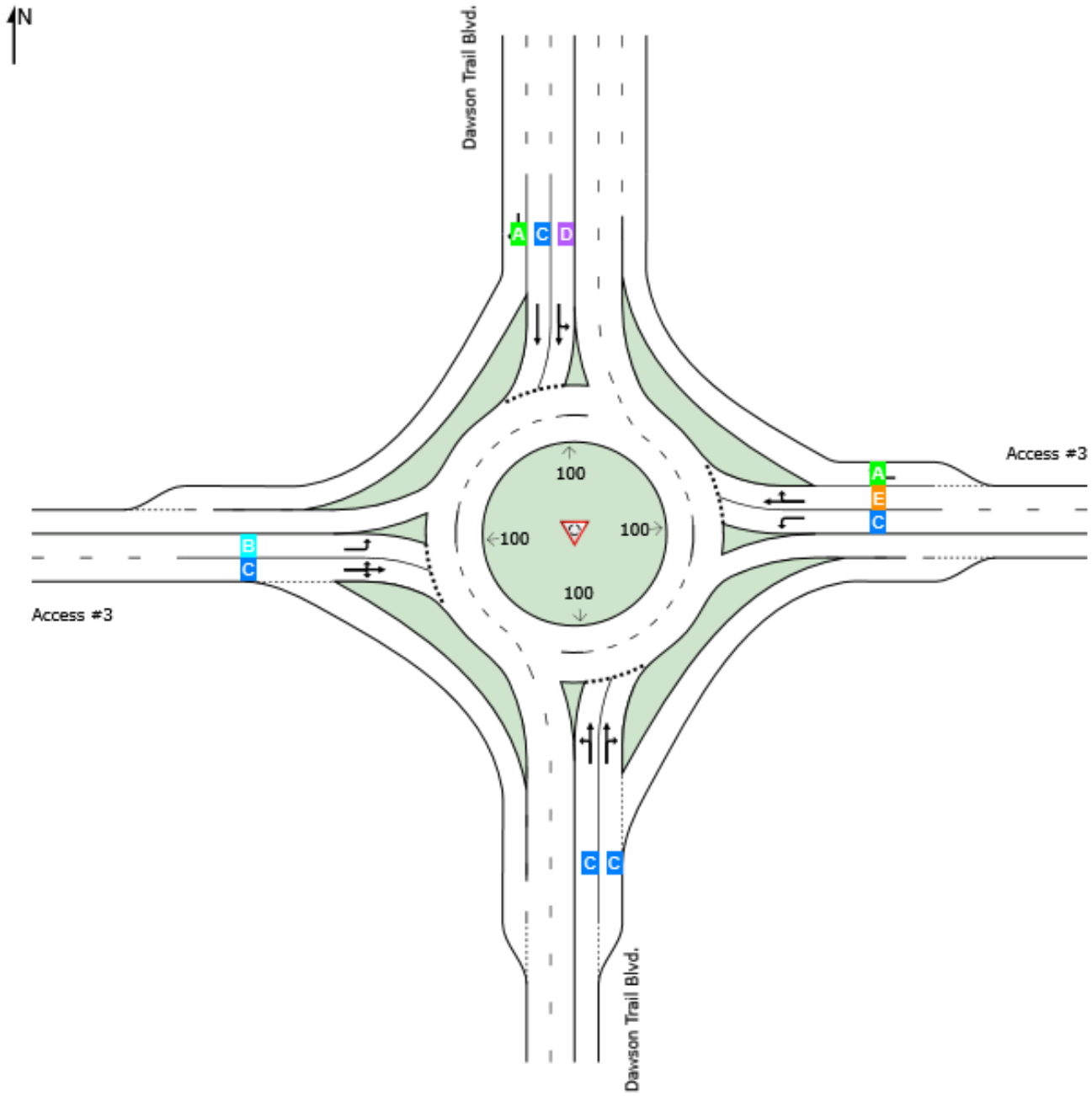
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 104 [Int#104_2040 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	C	C	C	C	C



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 9:28:38 AM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #104-mod.sip9

DELAY (CONTROL)

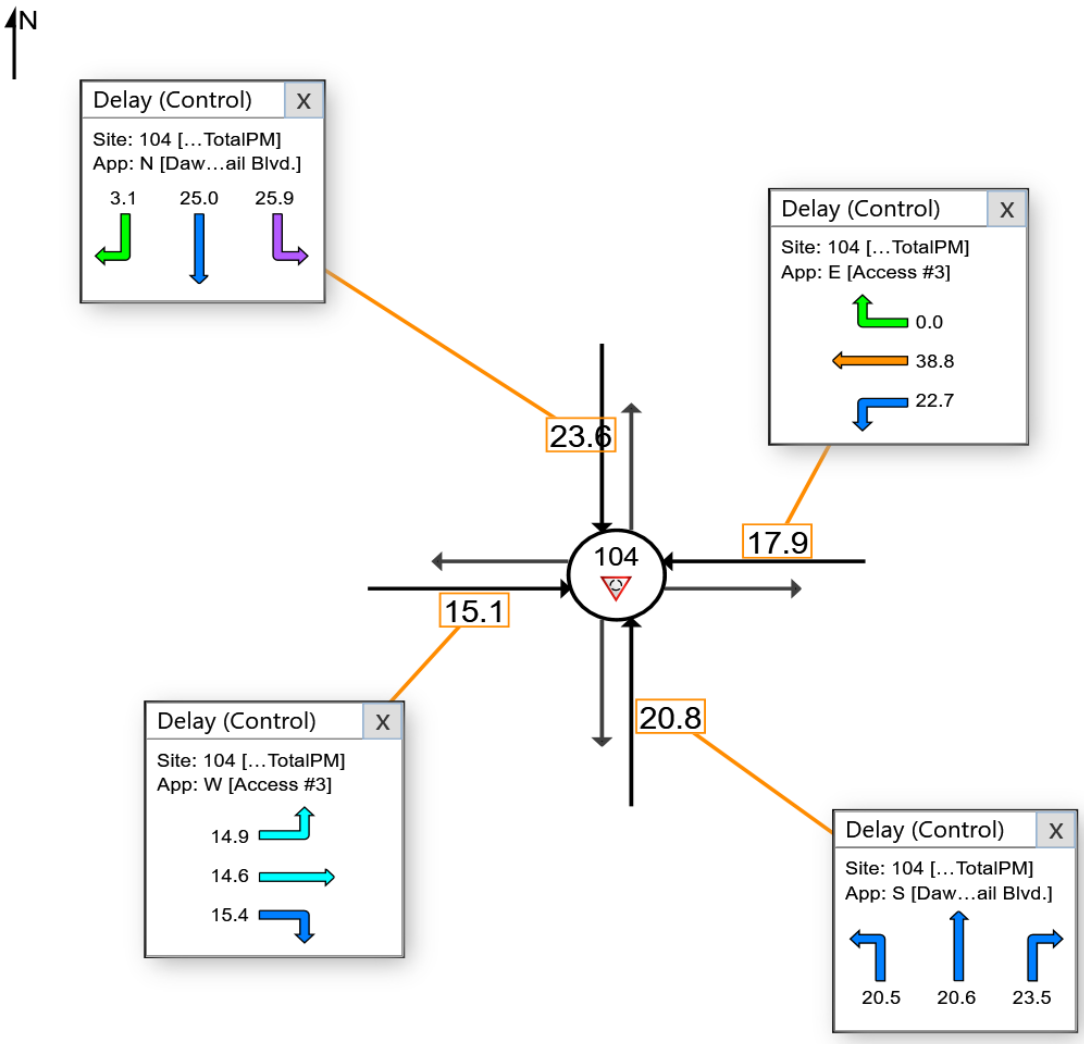
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 104 [Int#104_2040 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

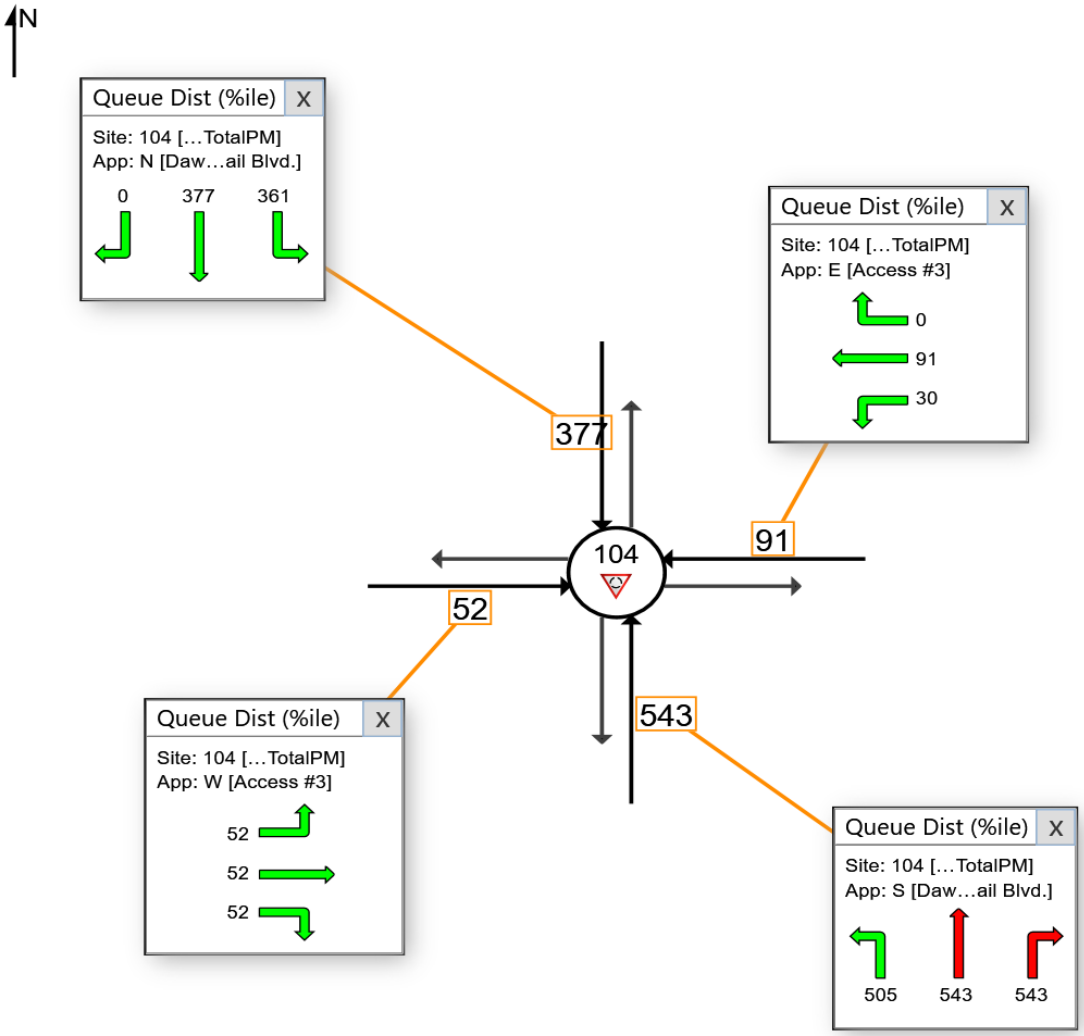
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 104 [Int#104_2040 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popups boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



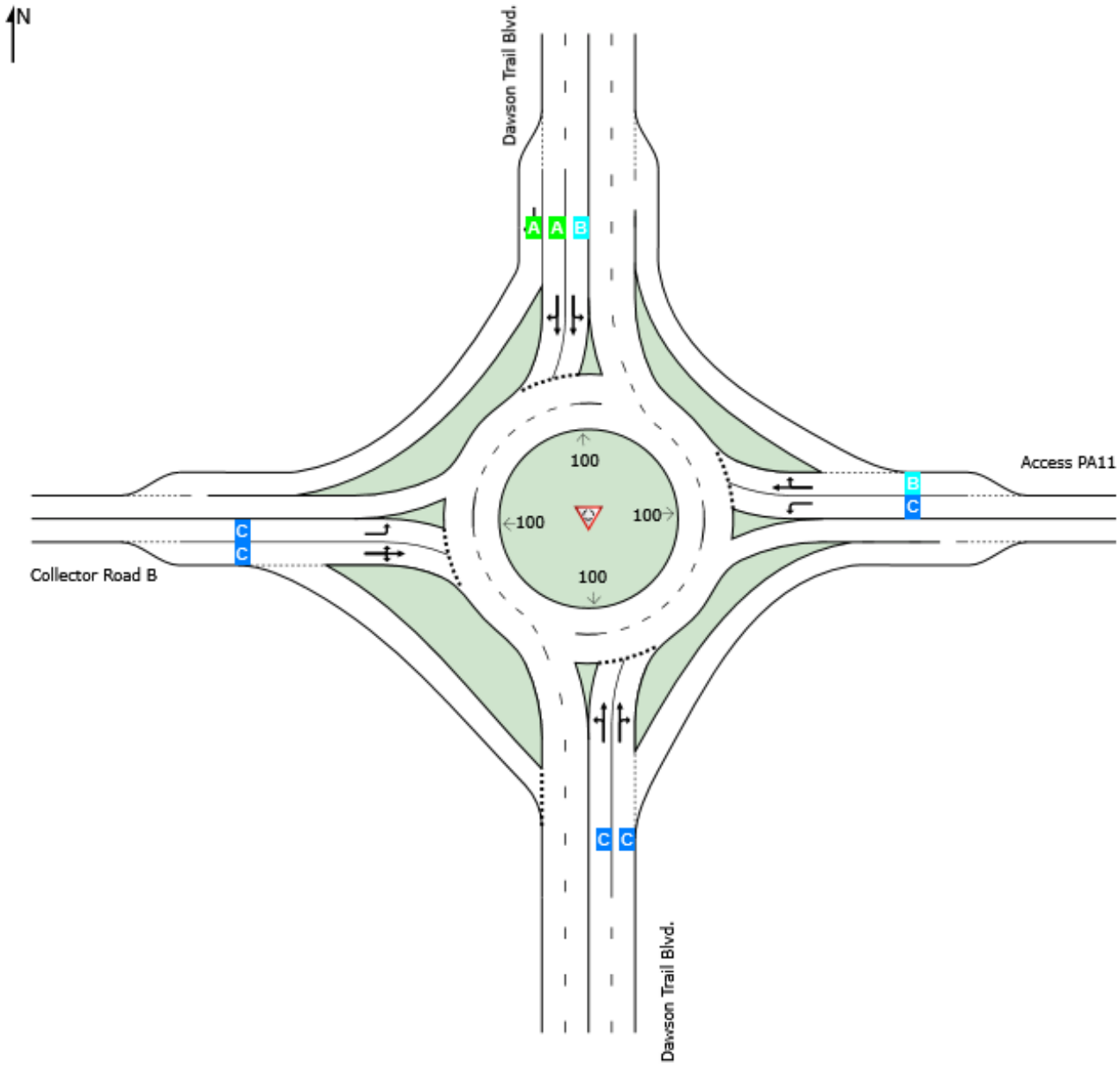
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 105 [Int#105_2040 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	C	C	A	C	B



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 9:36:25 AM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #105-mod.sip9

DELAY (CONTROL)

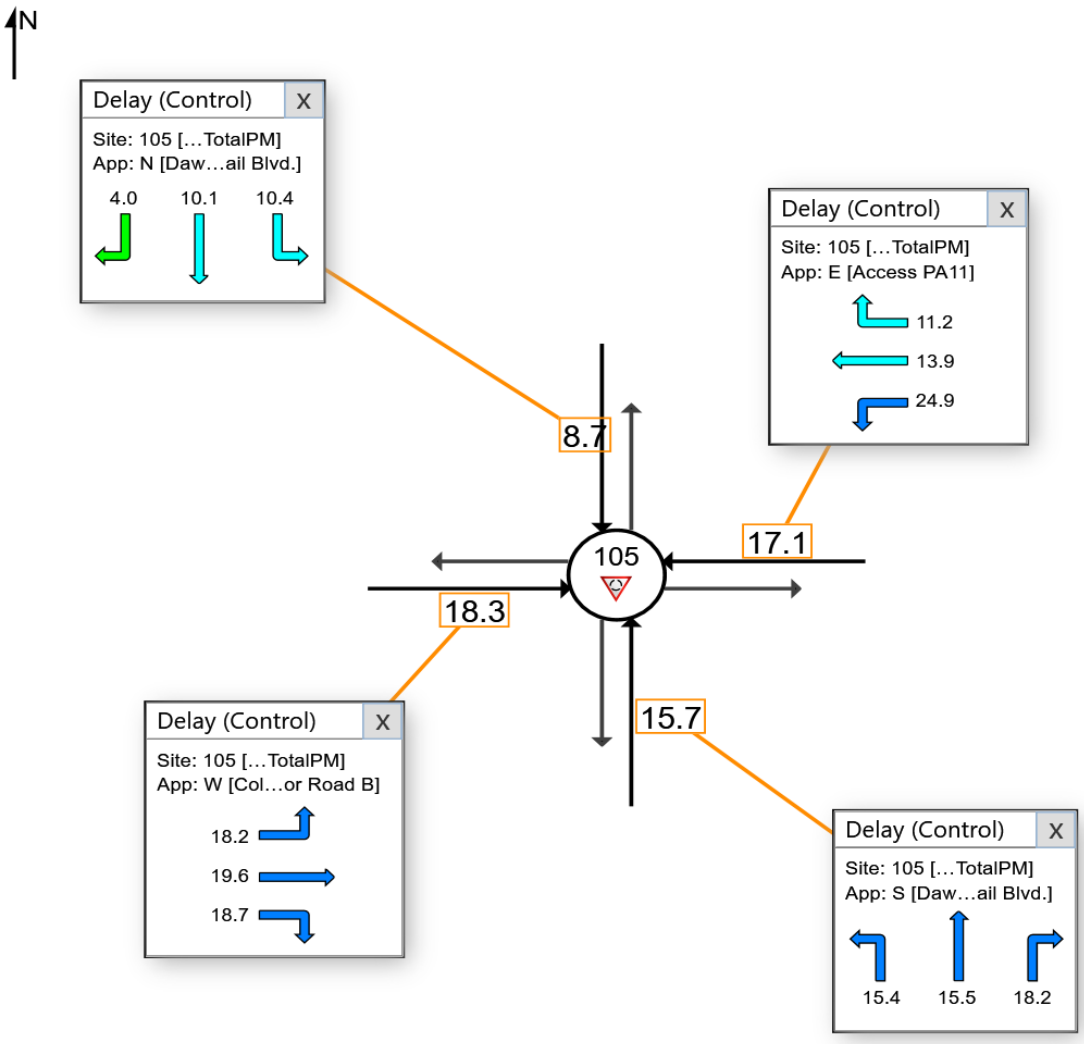
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 105 [Int#105_2040 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

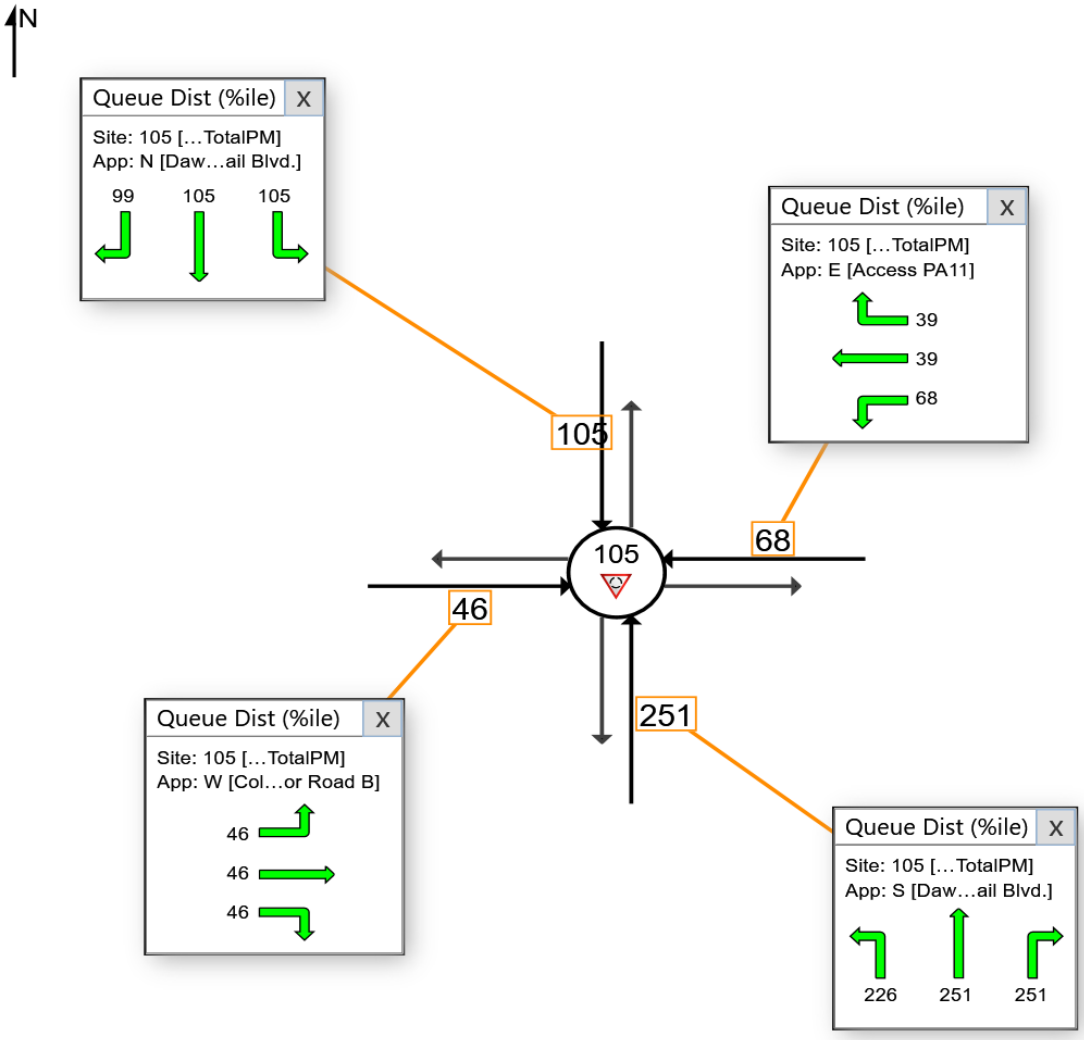
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 105 [Int#105_2040 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popups boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



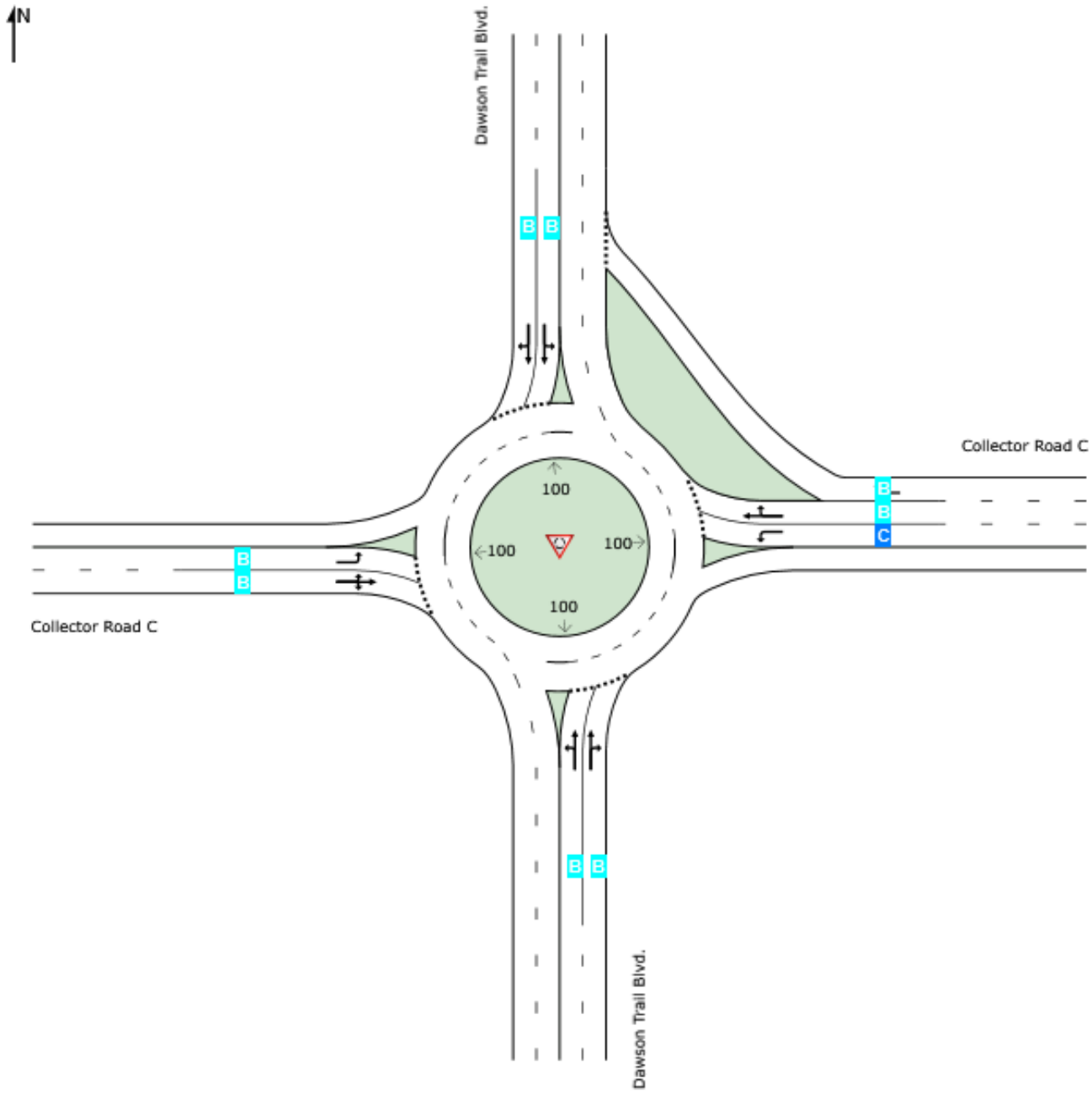
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 106 [Int#106_2040 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	B	B	B	B	B



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 9:50:34 AM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int#106-mod.sip9

DELAY (CONTROL)

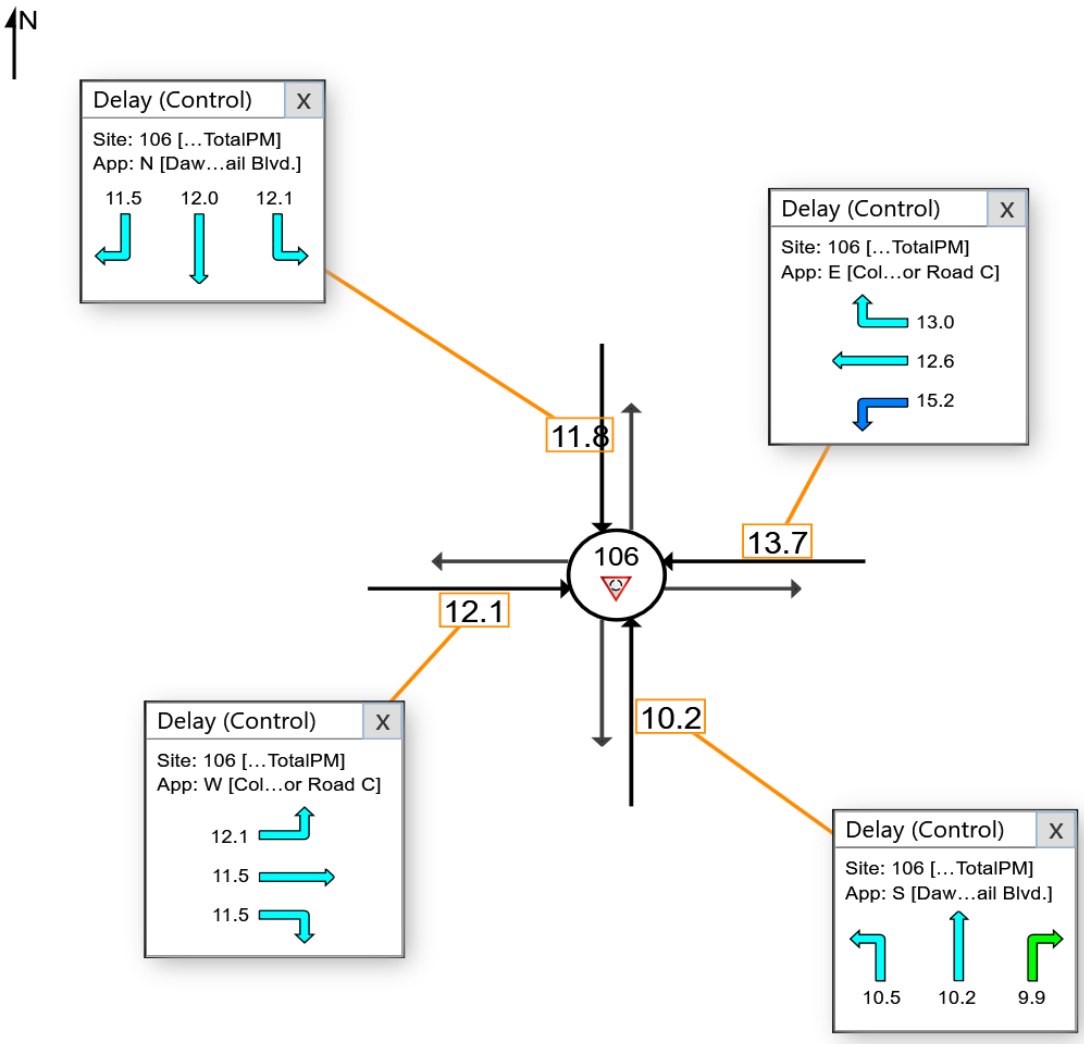
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 106 [Int#106_2040 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

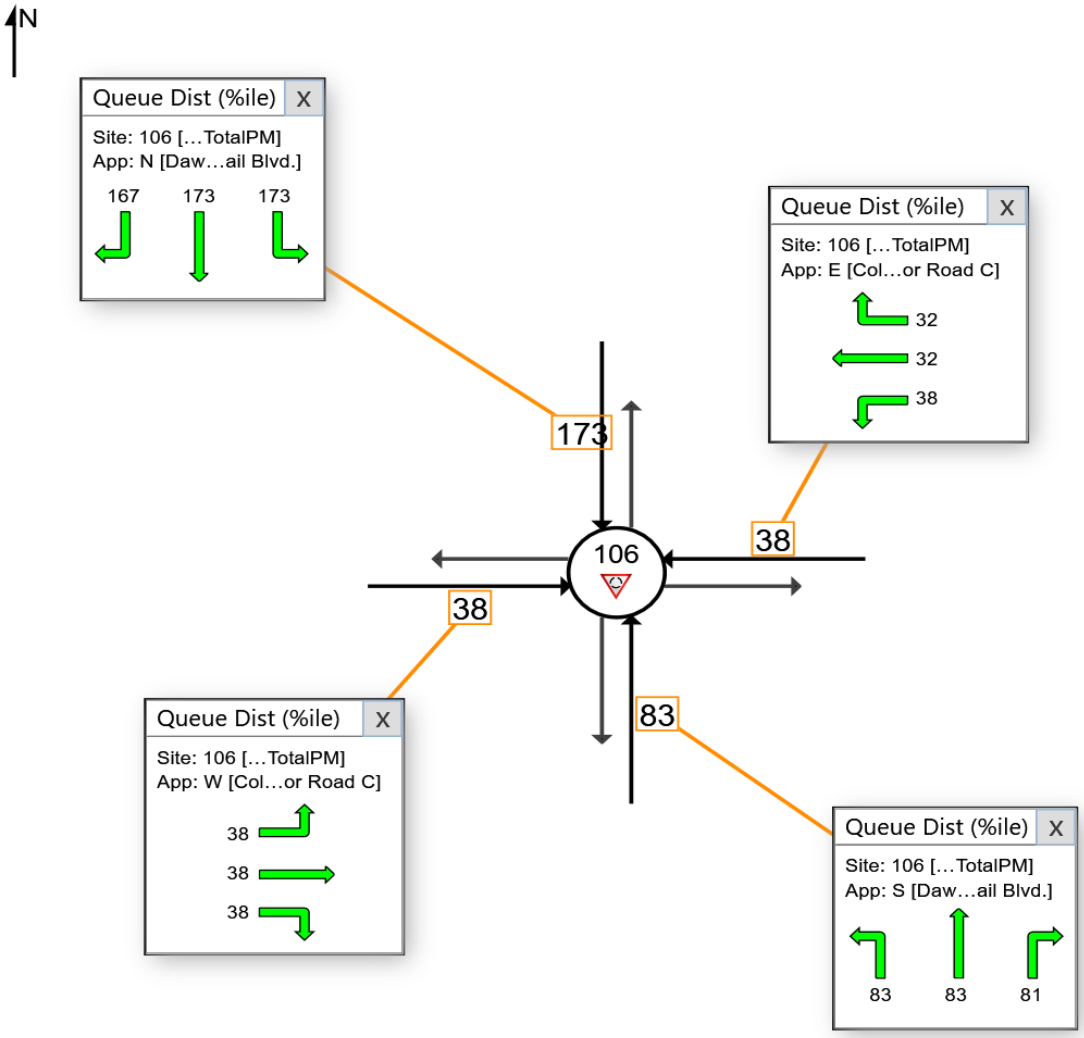
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 106 [Int#106_2040 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



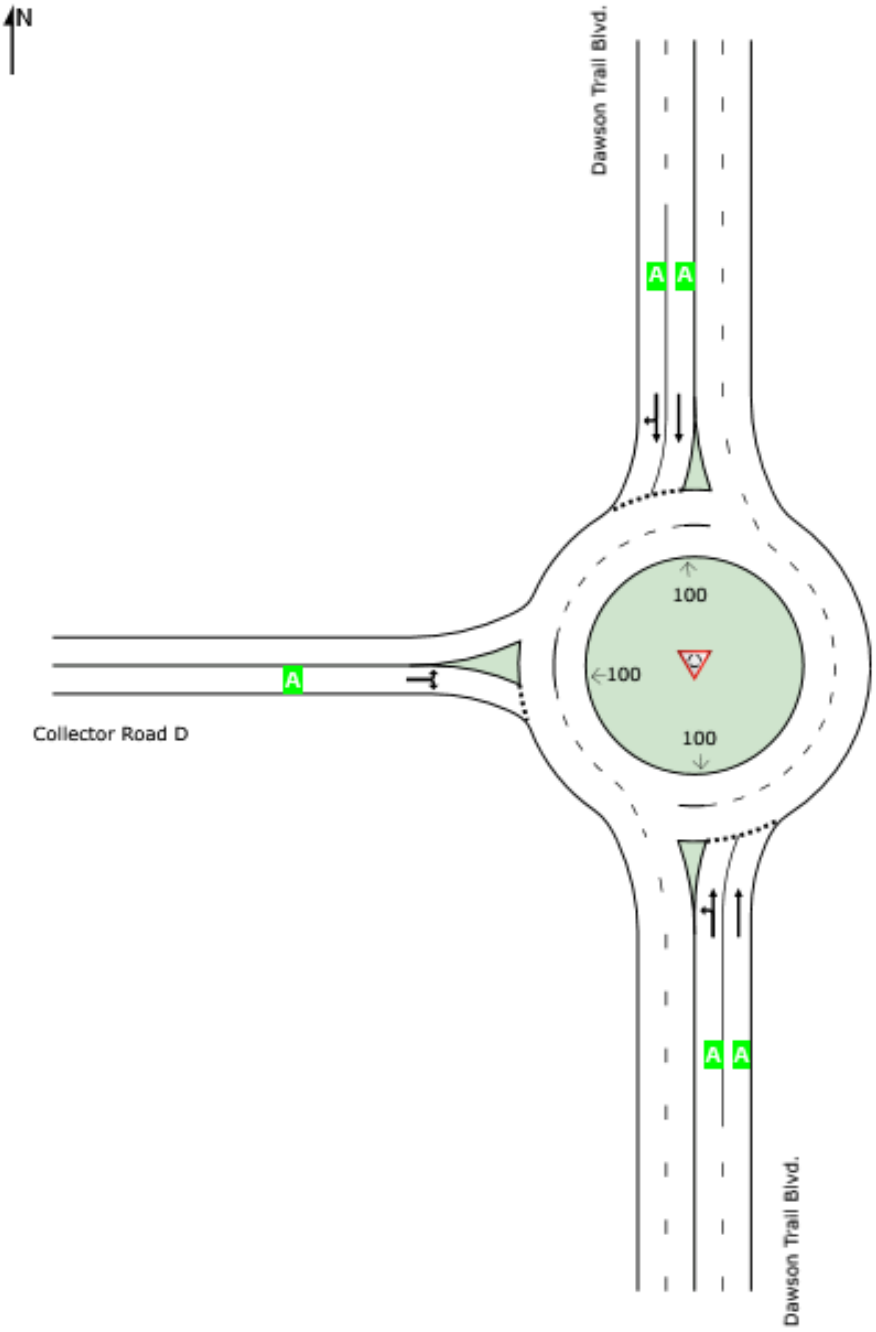
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 107 [Int#107_2040 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches			Intersection
	South	North	West	
LOS	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 10:01:02 AM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int#107.sip9

DELAY (CONTROL)

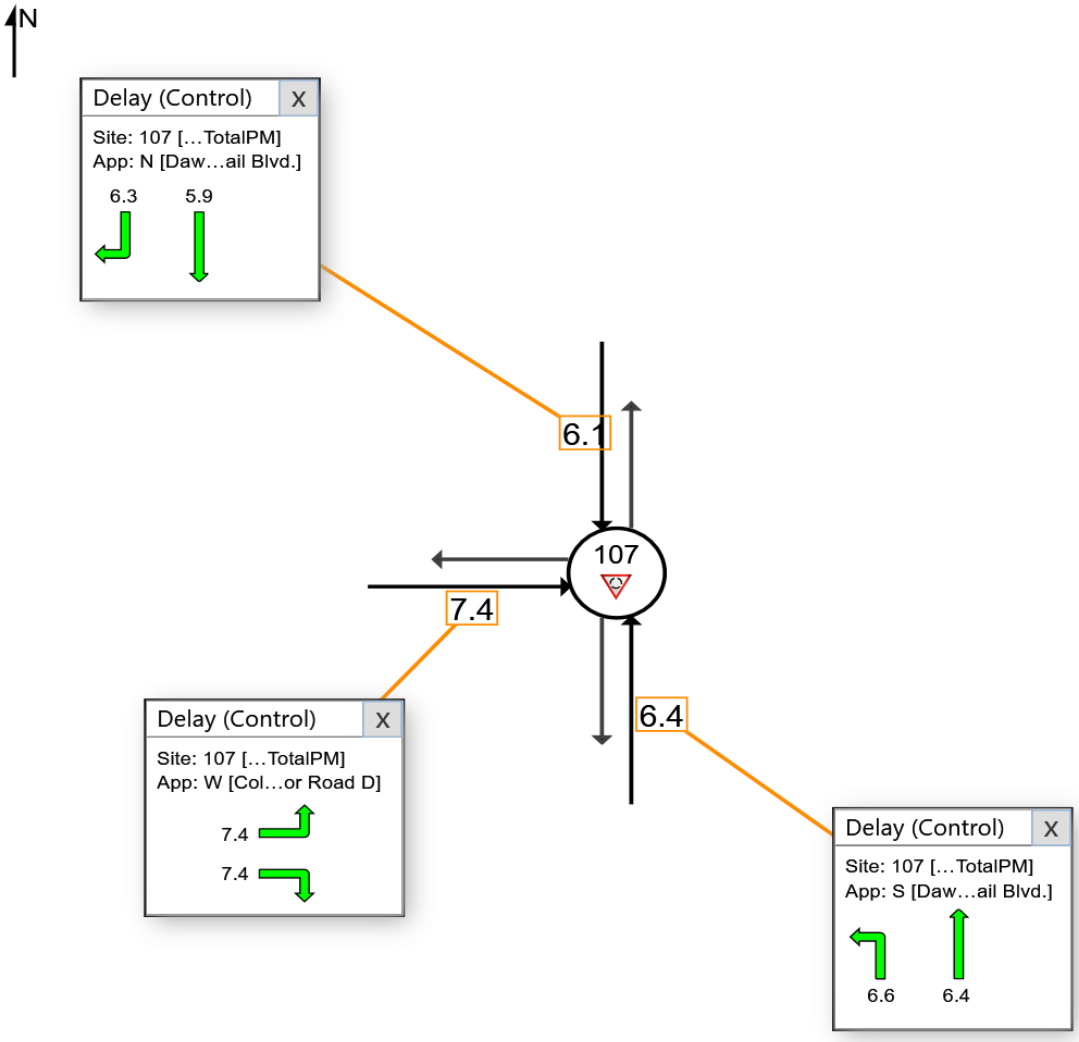
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 107 [Int#107_2040 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

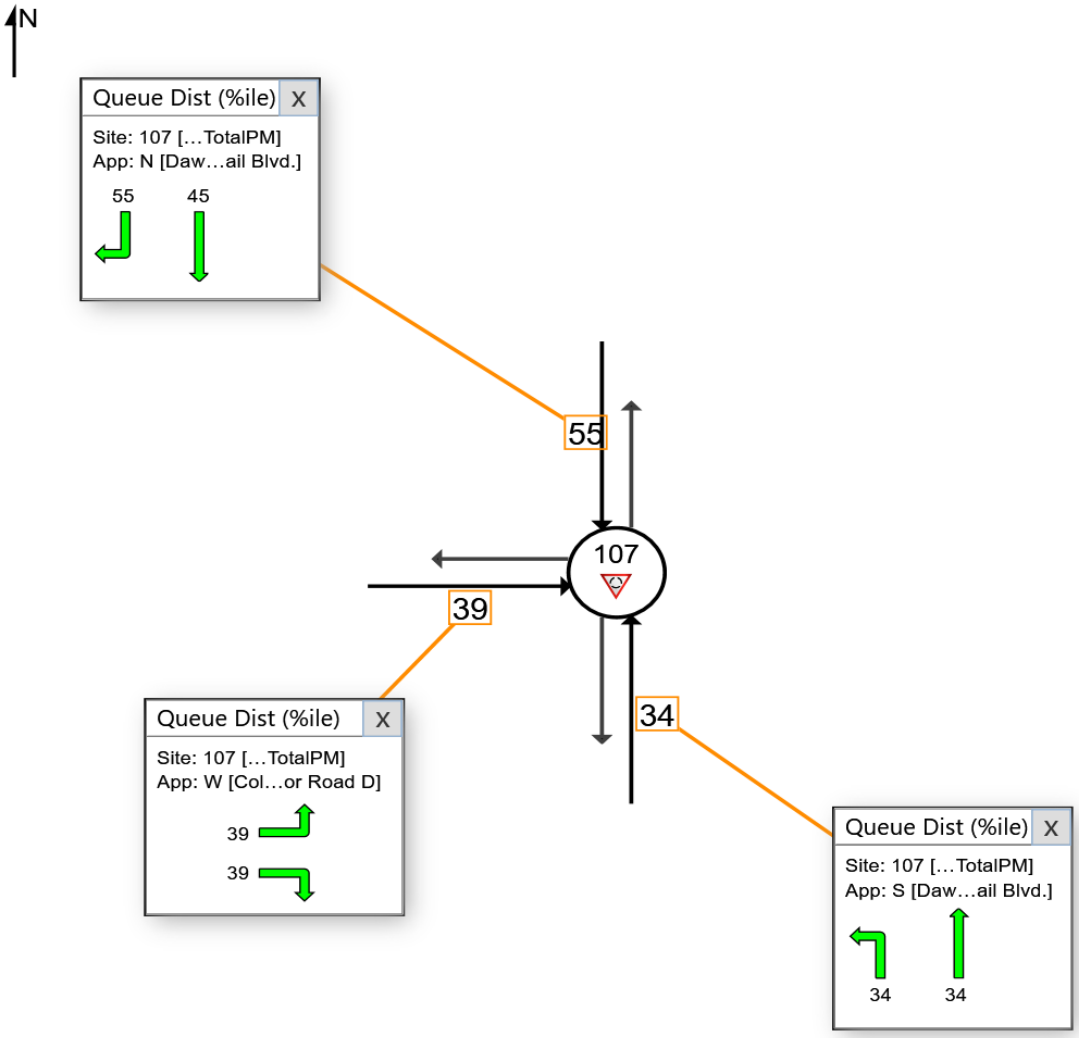
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 107 [Int#107_2040 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



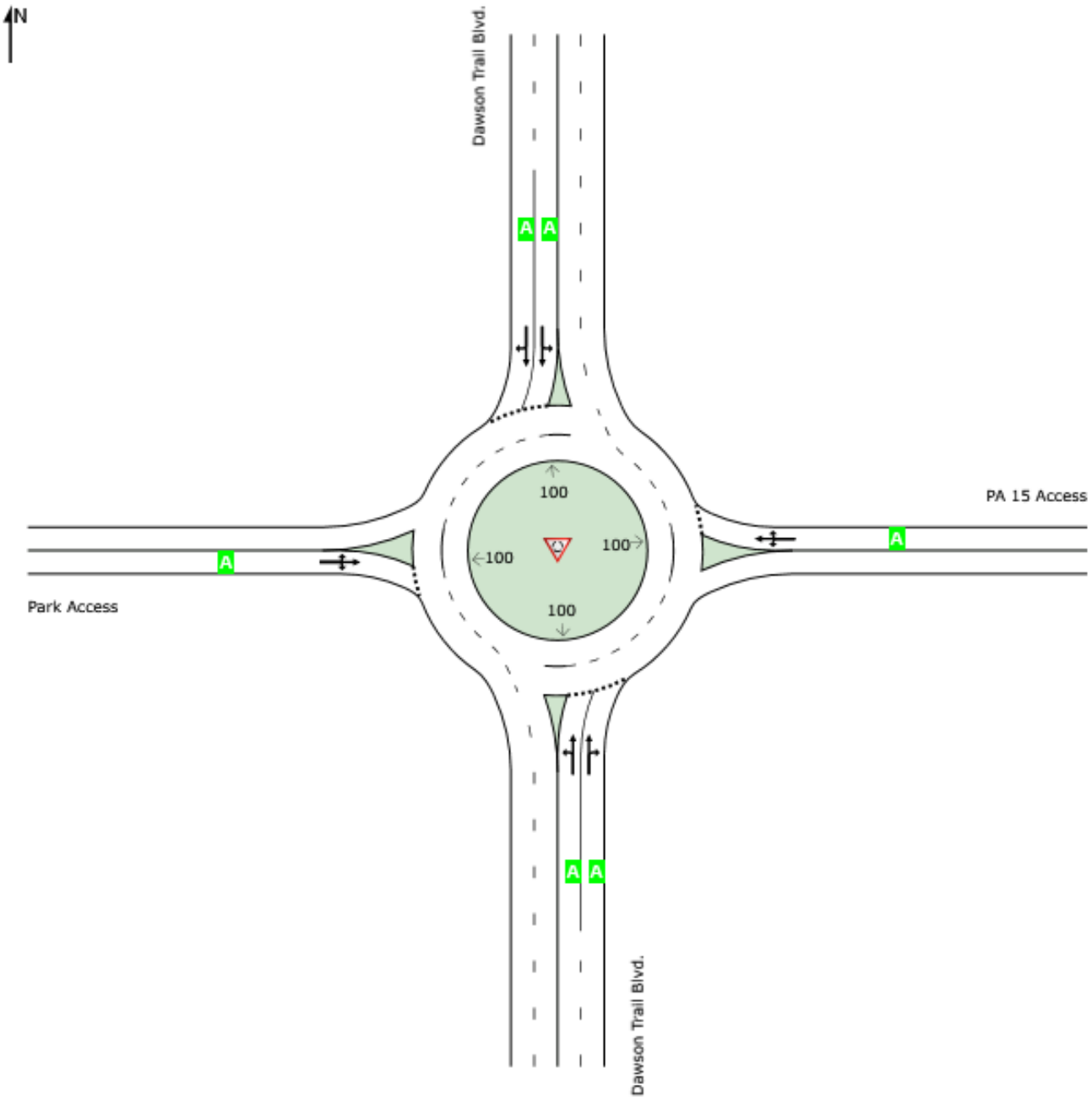
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 101 [Int#108_2040 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	A	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 12:52:31 PM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int#108.sip9

DELAY (CONTROL)

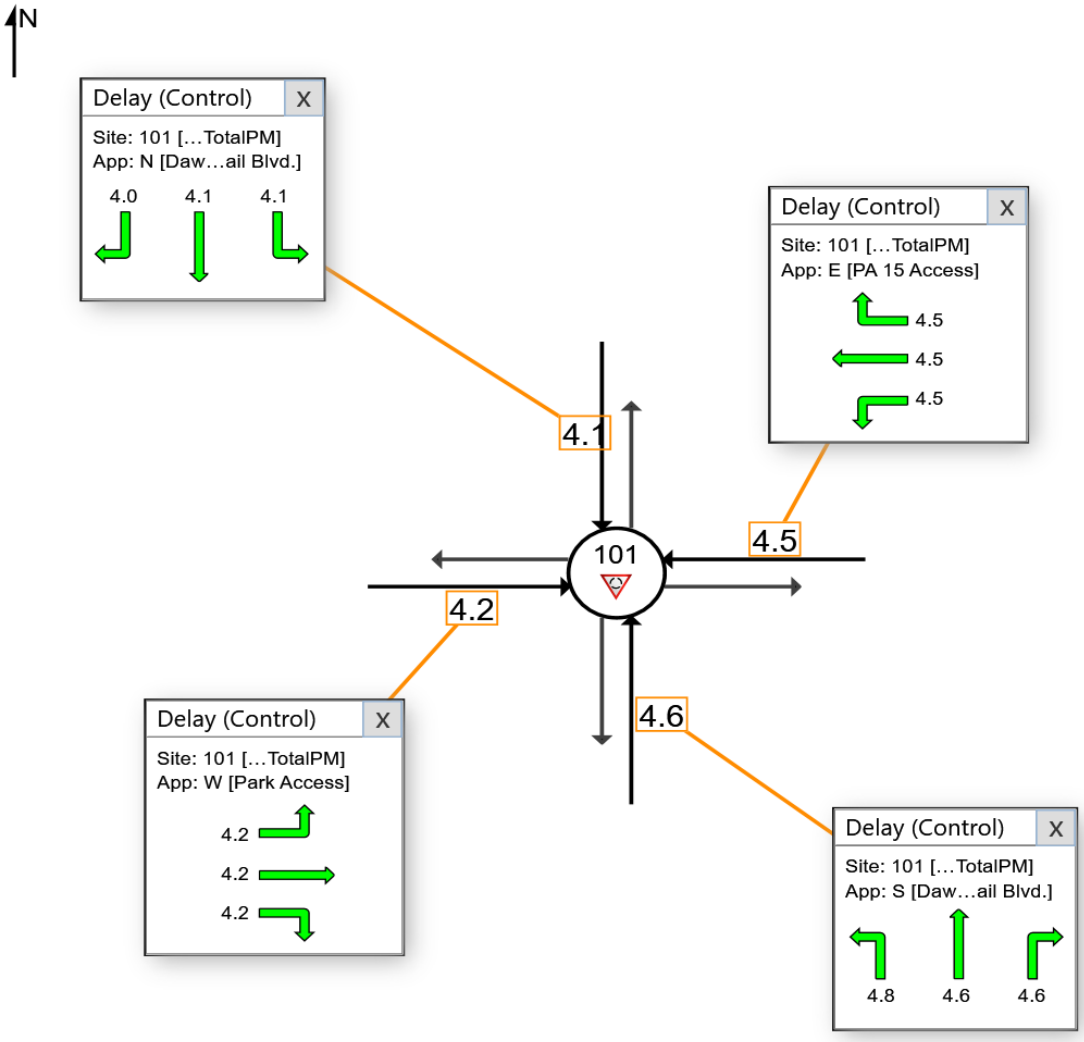
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 101 [Int#108_2040 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

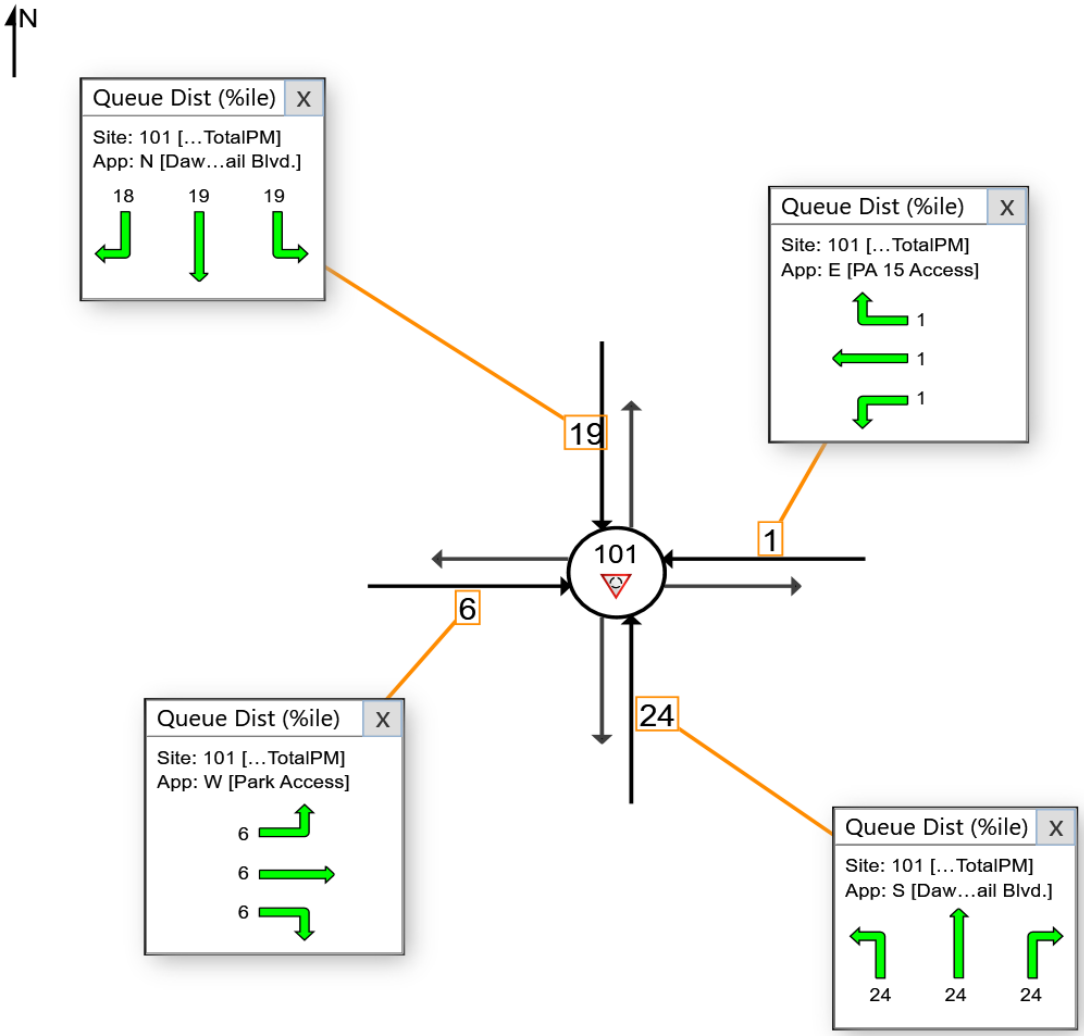
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 101 [Int#108_2040 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

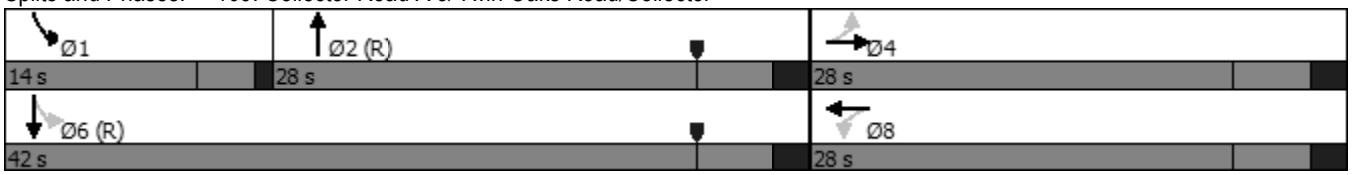
Close All Popups

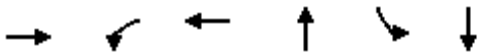


Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	10	5	159	5	780	278	1088
Future Volume (vph)	10	5	159	5	780	278	1088
Turn Type	Perm	NA	Perm	NA	NA	pm+pt	NA
Protected Phases		4		8	2	1	6
Permitted Phases	4		8			6	
Detector Phase	4	4	8	8	2	1	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	10.0	5.0	10.0
Minimum Split (s)	28.0	28.0	28.0	28.0	28.0	9.5	28.0
Total Split (s)	28.0	28.0	28.0	28.0	28.0	14.0	42.0
Total Split (%)	40.0%	40.0%	40.0%	40.0%	40.0%	20.0%	60.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	1.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.0	6.0	6.0	6.0	4.0	6.0
Lead/Lag					Lag	Lead	
Lead-Lag Optimize?					Yes	Yes	
Recall Mode	None	None	None	None	C-Max	None	C-Max
Act Effct Green (s)		14.4	14.4	14.4	28.3	45.6	43.6
Actuated g/C Ratio		0.21	0.21	0.21	0.40	0.65	0.62
v/c Ratio		0.06	0.61	0.52	0.63	0.66	0.55

Intersection Summary
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 15.0
Intersection Capacity Utilization 67.8%
Analysis Period (min) 15

Splits and Phases: 109: Collector Road A & Twin Oaks Road/Collector





Lane Group	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	17	173	282	897	302	1216
v/c Ratio	0.06	0.61	0.52	0.63	0.66	0.55
Control Delay	18.9	33.3	6.7	20.9	16.1	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.9	33.3	6.7	20.9	16.1	9.7
Queue Length 50th (ft)	6	69	2	157	46	135
Queue Length 95th (ft)	18	111	51	#257	#161	248
Internal Link Dist (ft)	237		171	1511		693
Turn Bay Length (ft)		150			250	
Base Capacity (vph)	438	436	689	1425	466	2197
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.40	0.41	0.63	0.65	0.55

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	5	1	159	5	255	0	780	45	278	1088	30
Future Volume (veh/h)	10	5	1	159	5	255	0	780	45	278	1088	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	0	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	11	5	1	173	5	277	0	848	49	302	1183	33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	0	2	2	2	2	2
Cap, veh/h	126	46	5	384	6	341	0	1490	86	466	2154	60
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.00	0.44	0.44	0.12	0.61	0.61
Sat Flow, veh/h	189	210	25	1410	28	1561	0	3508	197	1781	3531	98
Grp Volume(v), veh/h	17	0	0	173	0	282	0	441	456	302	595	621
Grp Sat Flow(s),veh/h/ln	424	0	0	1410	0	1589	0	1777	1835	1781	1777	1853
Q Serve(g_s), s	0.1	0.0	0.0	0.0	0.0	11.8	0.0	13.0	13.0	6.0	13.7	13.8
Cycle Q Clear(g_c), s	11.9	0.0	0.0	8.8	0.0	11.8	0.0	13.0	13.0	6.0	13.7	13.8
Prop In Lane	0.65		0.06	1.00		0.98	0.00		0.11	1.00		0.05
Lane Grp Cap(c), veh/h	177	0	0	384	0	347	0	775	801	466	1084	1130
V/C Ratio(X)	0.10	0.00	0.00	0.45	0.00	0.81	0.00	0.57	0.57	0.65	0.55	0.55
Avail Cap(c_a), veh/h	299	0	0	519	0	500	0	775	801	513	1084	1130
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.4	0.0	0.0	24.8	0.0	26.0	0.0	14.8	14.8	10.5	8.0	8.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.8	0.0	6.6	0.0	3.0	2.9	2.5	2.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.0	2.6	0.0	4.9	0.0	5.4	5.6	2.2	4.8	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.6	0.0	0.0	25.6	0.0	32.6	0.0	17.8	17.7	13.0	10.0	9.9
LnGrp LOS	C	A	A	C	A	C	A	B	B	B	B	A
Approach Vol, veh/h		17			455			897			1518	
Approach Delay, s/veh		22.6			29.9			17.8			10.6	
Approach LOS		C			C			B			B	

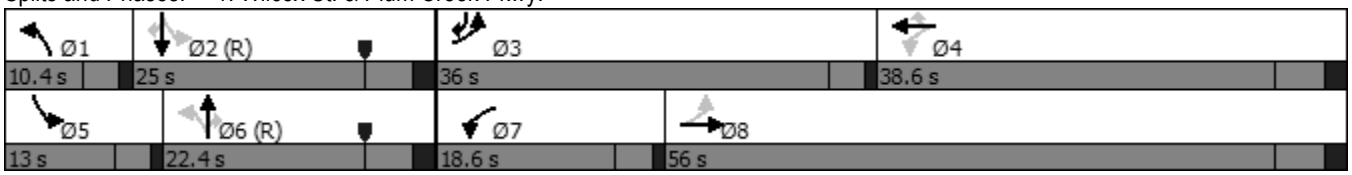
Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	12.2	36.5		21.3		48.7		21.3				
Change Period (Y+Rc), s	4.0	6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s	10.0	22.0		22.0		36.0		22.0				
Max Q Clear Time (g_c+I1), s	8.0	15.0		13.9		15.8		13.8				
Green Ext Time (p_c), s	0.2	3.2		0.0		8.6		1.5				

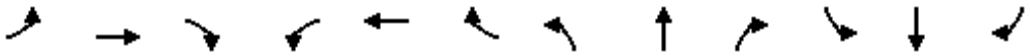
Intersection Summary			
HCM 6th Ctrl Delay		15.9	
HCM 6th LOS		B	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	430	1385	330	130	995	185	280	195	120	185	247	383
Future Volume (vph)	430	1385	330	130	995	185	280	195	120	185	247	383
Turn Type	pm+pt	NA	Free	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+ov
Protected Phases	3	8		7	4		1	6		5	2	3
Permitted Phases	8		Free	4		4	6		6	2		2
Detector Phase	3	8		7	4	4	1	6	6	5	2	3
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	5.0	10.0	10.0	5.0	4.0	5.0
Minimum Split (s)	9.5	31.0		14.5	31.0	31.0	9.5	16.0	16.0	9.5	10.0	9.5
Total Split (s)	36.0	56.0		18.6	38.6	38.6	10.4	22.4	22.4	13.0	25.0	36.0
Total Split (%)	32.7%	50.9%		16.9%	35.1%	35.1%	9.5%	20.4%	20.4%	11.8%	22.7%	32.7%
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	3.0
All-Red Time (s)	1.0	2.0		1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0		4.0	6.0	6.0	4.0	6.0	6.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	None
Act Effct Green (s)	69.5	52.7	110.0	50.3	37.6	37.6	26.3	17.6	17.6	30.7	19.8	51.7
Actuated g/C Ratio	0.63	0.48	1.00	0.46	0.34	0.34	0.24	0.16	0.16	0.28	0.18	0.47
v/c Ratio	0.93	0.86	0.22	0.58	0.89	0.31	0.72	0.72	0.35	0.73	0.80	0.53

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 35 (32%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 33.9
Intersection Capacity Utilization 103.2%
Analysis Period (min) 15

Splits and Phases: 1: Wilcox St. & Plum Creek Pkwy.





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	453	1458	347	141	1082	201	304	212	130	201	268	416
v/c Ratio	0.93	0.86	0.22	0.58	0.89	0.31	0.72	0.72	0.35	0.73	0.80	0.53
Control Delay	55.6	31.8	0.3	28.5	35.6	5.7	43.5	59.5	7.7	49.6	62.7	19.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.6	31.8	0.3	28.5	35.6	5.7	43.5	59.5	7.7	49.6	62.7	19.0
Queue Length 50th (ft)	253	447	0	53	224	7	86	146	0	114	185	166
Queue Length 95th (ft)	#381	586	0	m86	#546	m19	#134	#260	41	#209	#323	234
Internal Link Dist (ft)		553			473			812			658	
Turn Bay Length (ft)	280		250	185			190		195	130		130
Base Capacity (vph)	575	1703	1583	308	1220	653	422	294	372	275	334	863
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.86	0.22	0.46	0.89	0.31	0.72	0.72	0.35	0.73	0.80	0.48

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Twin Mesa Metropolitan District New Service Plan
SV2023-003
Planning Commission Supplemental Memo Page 908 of 1222

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	430	1385	330	130	995	185	280	195	120	185	247	383
Future Volume (veh/h)	430	1385	330	130	995	185	280	195	120	185	247	383
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1885	1885	1885	1856	1856	1856	1870	1870	1870
Adj Flow Rate, veh/h	453	1458	0	141	1082	201	304	212	130	201	268	416
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	1	1	1	3	3	3	2	2	2
Cap, veh/h	481	1572		246	1070	477	475	379	321	317	427	730
Arrive On Green	0.23	0.44	0.00	0.18	0.60	0.60	0.06	0.20	0.20	0.08	0.23	0.23
Sat Flow, veh/h	1781	3554	1585	1795	3582	1595	3428	1856	1568	1781	1870	1581
Grp Volume(v), veh/h	453	1458	0	141	1082	201	304	212	130	201	268	416
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1795	1791	1595	1714	1856	1568	1781	1870	1581
Q Serve(g_s), s	23.4	42.7	0.0	5.6	32.9	7.5	6.4	11.3	7.9	9.0	14.2	21.2
Cycle Q Clear(g_c), s	23.4	42.7	0.0	5.6	32.9	7.5	6.4	11.3	7.9	9.0	14.2	21.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	481	1572		246	1070	477	475	379	321	317	427	730
V/C Ratio(X)	0.94	0.93		0.57	1.01	0.42	0.64	0.56	0.41	0.63	0.63	0.57
Avail Cap(c_a), veh/h	584	1615		324	1070	477	475	379	321	317	427	730
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.64	0.64	0.64	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.5	29.0	0.0	24.1	22.1	17.0	35.8	39.3	38.0	32.9	38.3	21.7
Incr Delay (d2), s/veh	20.3	9.6	0.0	0.5	24.7	0.4	2.3	5.8	3.8	3.2	6.8	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.4	19.3	0.0	2.2	11.7	2.3	1.1	5.8	3.3	4.6	7.4	8.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.7	38.6	0.0	24.6	46.8	17.4	38.1	45.1	41.7	36.0	45.1	24.9
LnGrp LOS	D	D		C	D	B	D	D	D	D	D	C
Approach Vol, veh/h		1911	A		1424			646			885	
Approach Delay, s/veh		42.0			40.5			41.1			33.5	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.4	31.1	29.6	38.9	13.0	28.5	13.9	54.6
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	6.4	19.0	32.0	32.6	9.0	16.4	14.6	50.0
Max Q Clear Time (g_c+I1), s	8.4	23.2	25.4	34.9	11.0	13.3	7.6	44.7
Green Ext Time (p_c), s	0.0	0.0	0.3	0.0	0.0	0.7	0.1	4.0

Intersection Summary	
HCM 6th Ctrl Delay	39.9
HCM 6th LOS	D

Notes

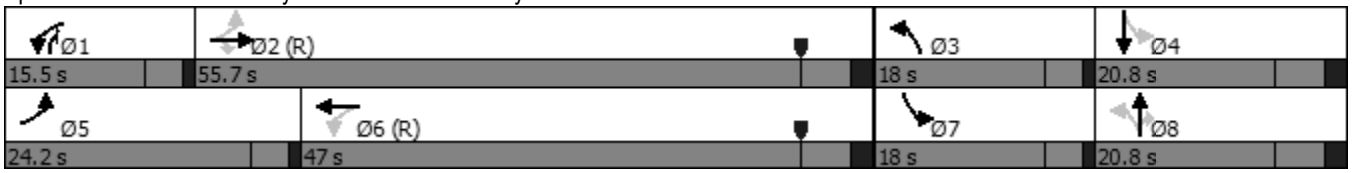
User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	330	1210	175	175	891	230	135	170	220	140	269
Future Volume (vph)	330	1210	175	175	891	230	135	170	220	140	269
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	pm+ov	pm+pt	NA	Free
Protected Phases	5	2		1	6	3	8	1	7	4	
Permitted Phases	2		2	6		8		8	4		Free
Detector Phase	5	2	2	1	6	3	8	1	7	4	
Switch Phase											
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0	3.0	5.0	3.0	3.0	5.0	
Minimum Split (s)	9.5	32.0	32.0	9.5	32.0	9.5	11.0	9.5	9.5	11.0	
Total Split (s)	24.2	55.7	55.7	15.5	47.0	18.0	20.8	15.5	18.0	20.8	
Total Split (%)	22.0%	50.6%	50.6%	14.1%	42.7%	16.4%	18.9%	14.1%	16.4%	18.9%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	4.0	3.0	3.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	1.0	2.0	1.0	1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0	4.0	6.0	4.0	4.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None	None	
Act Effct Green (s)	70.1	54.6	54.6	57.6	46.1	28.2	12.9	24.3	27.6	12.5	110.0
Actuated g/C Ratio	0.64	0.50	0.50	0.52	0.42	0.26	0.12	0.22	0.25	0.11	1.00
v/c Ratio	0.93	0.70	0.22	0.70	0.83	0.73	0.67	0.43	0.67	0.69	0.18

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 28.3
Intersection Capacity Utilization 87.7%
Analysis Period (min) 15

Splits and Phases: 2: Perry St. & Plum Creek Pkwy.



Twin Mesa Metropolitan District New Service Plan
SV2023-003
Planning Commission Supplemental Memo Page 910 of 1222



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	337	1235	179	190	1213	250	147	185	234	149	286
v/c Ratio	0.93	0.70	0.22	0.70	0.83	0.73	0.67	0.43	0.67	0.69	0.18
Control Delay	72.2	12.6	3.3	30.7	29.1	45.4	61.5	16.5	41.7	63.2	0.2
Queue Delay	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.2	12.9	3.3	30.7	29.1	45.4	61.5	16.5	41.7	63.2	0.2
Queue Length 50th (ft)	207	114	2	43	437	142	100	41	132	102	0
Queue Length 95th (ft)	m#272	187	m11	m112	#567	216	166	99	201	169	0
Internal Link Dist (ft)		473			1330		455			497	
Turn Bay Length (ft)	170		70	100		185		65	120		120
Base Capacity (vph)	399	1775	829	305	1465	353	253	462	366	255	1615
Starvation Cap Reductn	0	144	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.76	0.22	0.62	0.83	0.71	0.58	0.40	0.64	0.58	0.18

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	330	1210	175	175	891	225	230	135	170	220	140	269
Future Volume (veh/h)	330	1210	175	175	891	225	230	135	170	220	140	269
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	337	1235	179	190	968	245	250	147	185	234	149	0
Peak Hour Factor	0.98	0.98	0.98	0.92	0.92	0.92	0.92	0.92	0.92	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	0	0	0
Cap, veh/h	434	1746	777	373	1241	313	358	237	324	351	239	
Arrive On Green	0.25	0.97	0.97	0.16	0.88	0.88	0.13	0.13	0.13	0.13	0.13	0.00
Sat Flow, veh/h	1795	3582	1594	1795	2831	715	1795	1885	1586	1810	1900	1610
Grp Volume(v), veh/h	337	1235	179	190	611	602	250	147	185	234	149	0
Grp Sat Flow(s),veh/h/ln	1795	1791	1594	1795	1791	1755	1795	1885	1586	1810	1900	1610
Q Serve(g_s), s	11.8	3.1	0.4	6.5	14.6	14.8	13.3	8.1	11.6	12.2	8.2	0.0
Cycle Q Clear(g_c), s	11.8	3.1	0.4	6.5	14.6	14.8	13.3	8.1	11.6	12.2	8.2	0.0
Prop In Lane	1.00		1.00	1.00		0.41	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	434	1746	777	373	785	769	358	237	324	351	239	
V/C Ratio(X)	0.78	0.71	0.23	0.51	0.78	0.78	0.70	0.62	0.57	0.67	0.62	
Avail Cap(c_a), veh/h	536	1746	777	421	785	769	358	254	338	351	256	
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.49	0.49	0.49	0.82	0.82	0.82	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	13.1	0.7	0.7	13.2	4.7	4.7	36.0	45.6	39.5	35.6	45.6	0.0
Incr Delay (d2), s/veh	2.2	1.2	0.3	0.3	6.2	6.5	5.0	3.6	1.8	3.9	3.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	0.7	0.2	2.3	3.4	3.4	6.2	4.0	4.6	5.7	4.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.3	2.0	1.1	13.6	10.9	11.2	41.1	49.2	41.3	39.5	49.3	0.0
LnGrp LOS	B	A	A	B	B	B	D	D	D	D	D	
Approach Vol, veh/h		1751			1403			582			383	A
Approach Delay, s/veh		4.4			11.4			43.2			43.3	
Approach LOS		A			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.6	59.6	18.0	19.8	18.0	54.2	18.0	19.8
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	11.5	49.7	14.0	14.8	20.2	41.0	14.0	14.8
Max Q Clear Time (g_c+I1), s	8.5	5.1	15.3	10.2	13.8	16.8	14.2	13.6
Green Ext Time (p_c), s	0.0	13.1	0.0	0.2	0.2	9.0	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	15.9
HCM 6th LOS	B

Notes

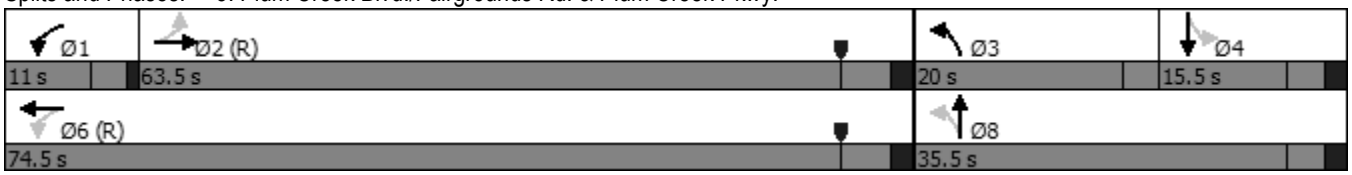
User approved pedestrian interval to be less than phase max green.

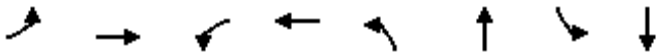
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	105	1120	71	916	325	0	5	5
Future Volume (vph)	105	1120	71	916	325	0	5	5
Turn Type	Perm	NA	pm+pt	NA	pm+pt	NA	Perm	NA
Protected Phases		2	1	6	3	8		4
Permitted Phases	2		6		8		4	
Detector Phase	2	2	1	6	3	8	4	4
Switch Phase								
Minimum Initial (s)	10.0	10.0	5.0	10.0	5.0	5.0	2.0	2.0
Minimum Split (s)	33.0	33.0	9.5	28.0	14.5	10.0	7.0	7.0
Total Split (s)	63.5	63.5	11.0	74.5	20.0	35.5	15.5	15.5
Total Split (%)	57.7%	57.7%	10.0%	67.7%	18.2%	32.3%	14.1%	14.1%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	1.0	2.0	0.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	4.0	6.0	3.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead		Lead		Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes		Yes		Yes	Yes
Recall Mode	C-Max	C-Max	None	C-Max	None	Max	Max	Max
Act Effct Green (s)	59.8	59.8	70.5	68.5	32.5	30.5	10.6	10.6
Actuated g/C Ratio	0.54	0.54	0.64	0.62	0.30	0.28	0.10	0.10
v/c Ratio	0.40	0.86	0.44	0.45	0.83	0.14	0.04	0.27

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 24.2
Intersection Capacity Utilization 84.2%
Analysis Period (min) 15

Splits and Phases: 3: Plum Creek Blvd./Fairgrounds Rd. & Plum Creek Pkwy.





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	114	1619	77	1001	353	77	5	54
v/c Ratio	0.40	0.86	0.44	0.45	0.83	0.14	0.04	0.27
Control Delay	23.9	27.3	17.6	11.7	52.7	0.5	46.0	18.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.9	27.3	17.6	11.7	52.7	0.5	46.0	18.8
Queue Length 50th (ft)	47	363	19	180	219	0	3	3
Queue Length 95th (ft)	m80	446	49	225	#373	0	15	42
Internal Link Dist (ft)		1330		637		613		434
Turn Bay Length (ft)	70		55				110	
Base Capacity (vph)	283	1886	182	2223	425	552	130	203
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.86	0.42	0.45	0.83	0.14	0.04	0.27

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	1120	370	71	916	5	325	0	71	5	5	45
Future Volume (veh/h)	105	1120	370	71	916	5	325	0	71	5	5	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	114	1217	402	77	996	5	353	0	77	5	5	49
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	0	0	0
Cap, veh/h	338	1451	467	203	2276	11	430	0	442	193	14	141
Arrive On Green	0.73	0.73	0.73	0.04	0.62	0.62	0.15	0.00	0.28	0.10	0.10	0.10
Sat Flow, veh/h	567	2661	857	1795	3654	18	1795	0	1596	1339	151	1478
Grp Volume(v), veh/h	114	809	810	77	488	513	353	0	77	5	0	54
Grp Sat Flow(s),veh/h/ln	567	1791	1727	1795	1791	1882	1795	0	1596	1339	0	1629
Q Serve(g_s), s	10.9	34.2	37.7	1.9	15.5	15.5	17.0	0.0	4.0	0.4	0.0	3.4
Cycle Q Clear(g_c), s	17.9	34.2	37.7	1.9	15.5	15.5	17.0	0.0	4.0	0.4	0.0	3.4
Prop In Lane	1.00		0.50	1.00		0.01	1.00		1.00	1.00		0.91
Lane Grp Cap(c), veh/h	338	976	942	203	1115	1172	430	0	442	193	0	155
V/C Ratio(X)	0.34	0.83	0.86	0.38	0.44	0.44	0.82	0.00	0.17	0.03	0.00	0.35
Avail Cap(c_a), veh/h	338	976	942	243	1115	1172	430	0	442	193	0	155
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.70	0.70	0.70	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.1	11.6	12.1	18.5	10.8	10.8	37.6	0.0	30.2	45.2	0.0	46.5
Incr Delay (d2), s/veh	1.9	5.8	7.4	1.2	1.3	1.2	11.2	0.0	0.9	0.2	0.0	6.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	10.2	11.1	0.9	6.0	6.3	2.1	0.0	1.7	0.1	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.9	17.4	19.4	19.6	12.0	12.0	48.8	0.0	31.0	45.4	0.0	52.6
LnGrp LOS	B	B	B	B	B	B	D	A	C	D	A	D
Approach Vol, veh/h		1733			1078			430			59	
Approach Delay, s/veh		18.0			12.5			45.6			52.0	
Approach LOS		B			B			D			D	

Timer - Assigned Phs	1	2	3	4		6		8				
Phs Duration (G+Y+Rc), s	8.5	66.0	20.0	15.5		74.5		35.5				
Change Period (Y+Rc), s	4.0	6.0	3.0	5.0		6.0		5.0				
Max Green Setting (Gmax), s	7.0	57.5	17.0	10.5		68.5		30.5				
Max Q Clear Time (g_c+I1), s	3.9	39.7	19.0	5.4		17.5		6.0				
Green Ext Time (p_c), s	0.0	12.0	0.0	0.1		7.8		0.3				

Intersection Summary	
HCM 6th Ctrl Delay	20.4
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

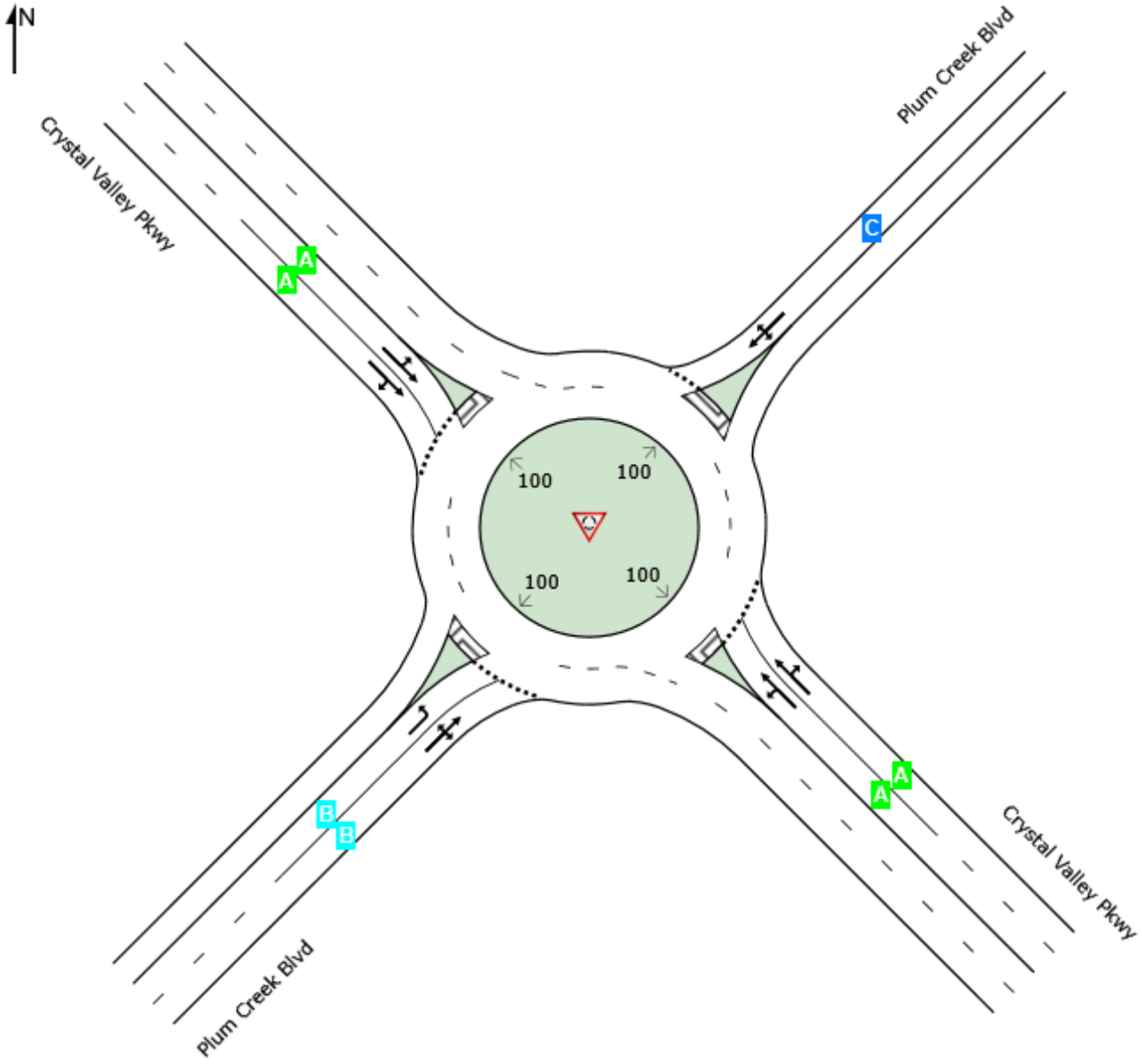
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 005 [Int #5_2040 Total_SAT (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
LOS	A	C	A	B	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 7:02:44 AM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #5.sip9

DELAY (CONTROL)

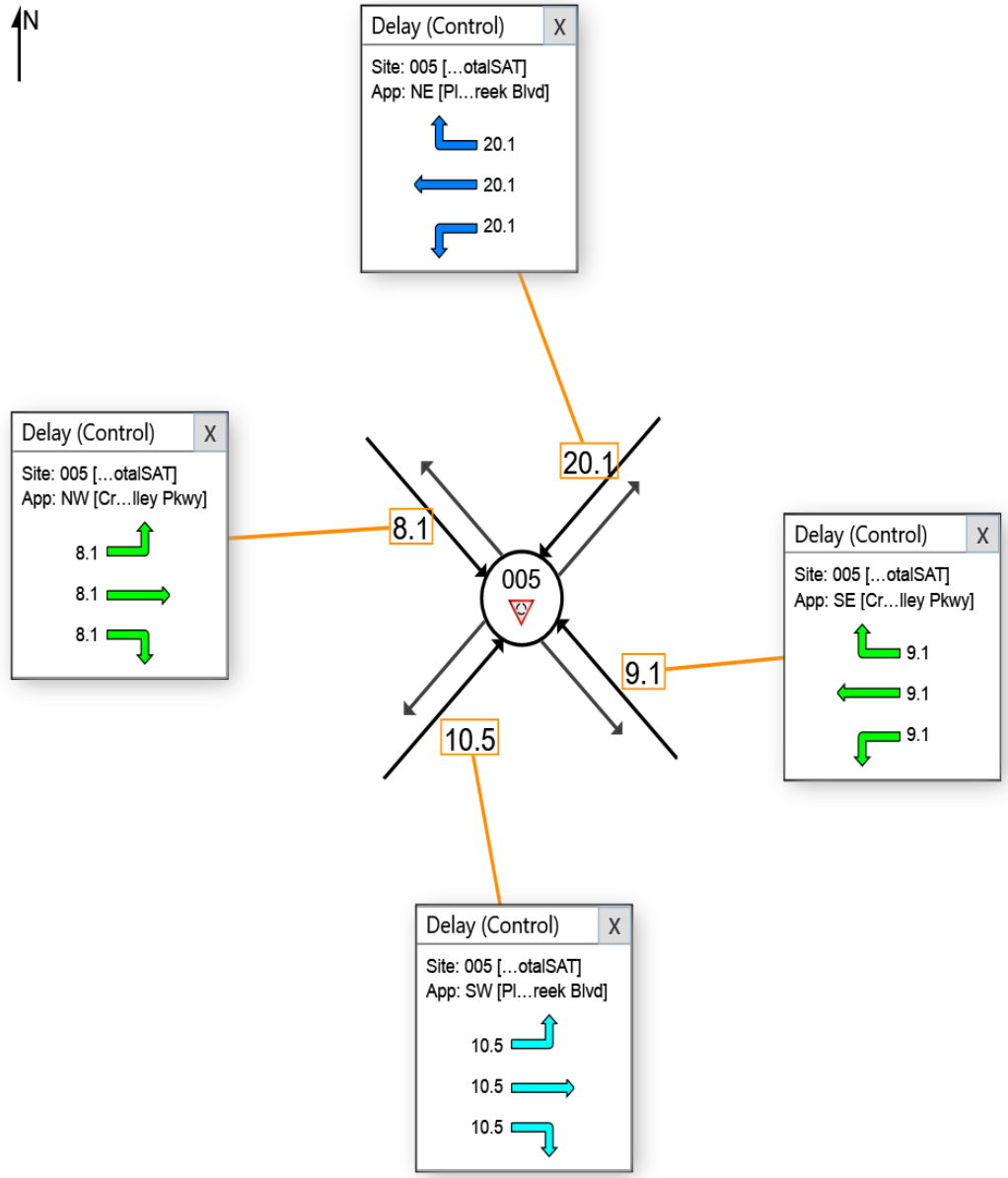
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 005 [Int #5_2040 Total_SAT (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



Colour code based on Level of Service



LOS A LOS B LOS C LOS D LOS E LOS F

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Roundabout Level of Service Method: Same as Sign Control
Delay Model: HCM Delay Formula (Geometric Delay is not included).

Approach values are flow-weighted average values for vehicle movements (pedestrian delays not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 7:02:44 AM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #5.sip9

QUEUE DISTANCE (PERCENTILE)

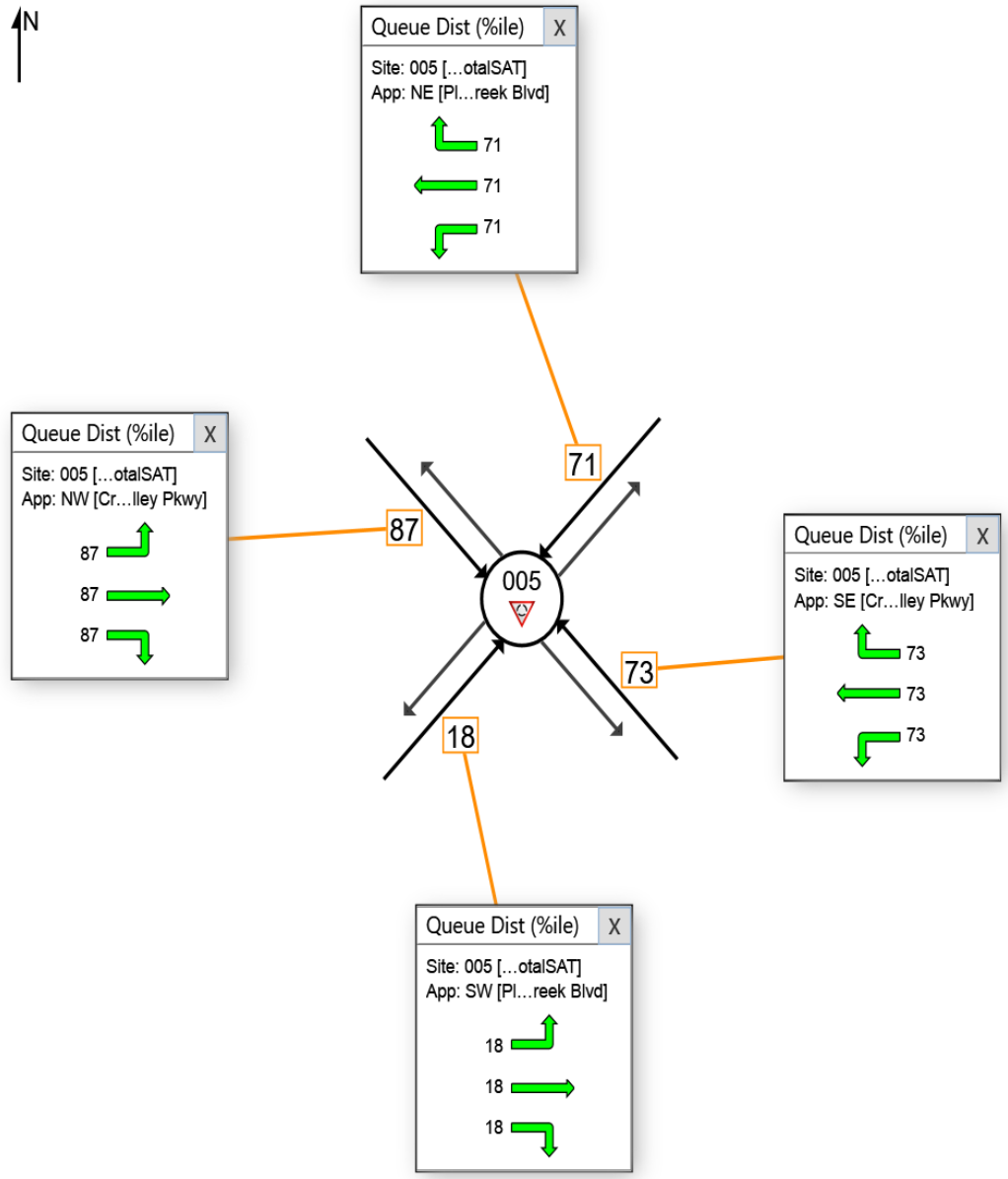
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 005 [Int #5_2040 Total_SAT (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



Colour code based on Queue Storage Ratio



[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0]

Queue Model: HCM Queue Formula.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

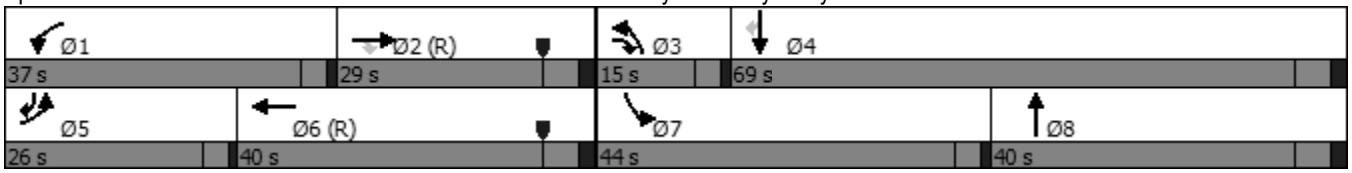
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 7:02:44 AM

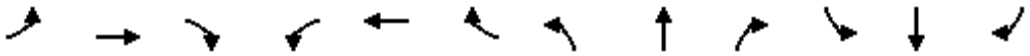
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #5.sip9

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	197	485	6	935	685	746	17	453	1014	835	752	348
Future Volume (vph)	197	485	6	935	685	746	17	453	1014	835	752	348
Turn Type	Prot	NA	pm+ov	Prot	NA	Free	Prot	NA	Free	Prot	NA	pm+ov
Protected Phases	5	2	3	1	6		3	8		7	4	5
Permitted Phases			2			Free			Free			4
Detector Phase	5	2	3	1	6		3	8		7	4	5
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0		5.0	10.0		5.0	10.0	5.0
Minimum Split (s)	11.0	23.0	11.0	11.0	33.0		11.0	32.0		11.0	33.0	11.0
Total Split (s)	26.0	29.0	15.0	37.0	40.0		15.0	40.0		44.0	69.0	26.0
Total Split (%)	17.3%	19.3%	10.0%	24.7%	26.7%		10.0%	26.7%		29.3%	46.0%	17.3%
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0		3.0	4.0		3.0	4.0	3.0
All-Red Time (s)	1.0	2.0	1.0	1.0	2.0		1.0	2.0		1.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	4.0	4.0	6.0		4.0	6.0		4.0	6.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	Max	C-Max	Max	None	C-Max		Max	Max		Max	Max	Max
Act Effct Green (s)	22.0	23.9	40.9	32.1	34.0	150.0	11.0	34.0	150.0	40.0	63.0	91.0
Actuated g/C Ratio	0.15	0.16	0.27	0.21	0.23	1.00	0.07	0.23	1.00	0.27	0.42	0.61
v/c Ratio	0.39	0.88	0.01	0.89	0.87	0.48	0.13	0.58	0.65	0.93	0.53	0.35

Intersection Summary
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 42.8
Intersection Capacity Utilization 84.2%
Analysis Period (min) 15

Splits and Phases: 7: Dawson Trails Blvd. & Collector Road A/Crystal Valley Pkwy.





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	201	495	6	954	699	761	17	462	1035	852	767	355
v/c Ratio	0.39	0.88	0.01	0.89	0.87	0.48	0.13	0.58	0.65	0.93	0.53	0.35
Control Delay	60.5	79.3	0.0	68.5	68.5	1.0	67.6	54.9	2.1	70.7	34.2	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.5	79.3	0.0	68.5	68.5	1.0	67.6	54.9	2.1	70.7	34.2	5.7
Queue Length 50th (ft)	93	254	0	322	350	0	16	213	0	422	292	51
Queue Length 95th (ft)	135	#358	0	378	#448	0	43	274	0	#543	356	105
Internal Link Dist (ft)		1283			1733			1960			1008	
Turn Bay Length (ft)	200		200	500			500		1000	500		500
Base Capacity (vph)	513	562	519	1097	802	1583	129	802	1583	915	1443	1023
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.88	0.01	0.87	0.87	0.48	0.13	0.58	0.65	0.93	0.53	0.35

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	197	485	6	935	685	746	17	453	1014	835	752	348
Future Volume (veh/h)	197	485	6	935	685	746	17	453	1014	835	752	348
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900	1870	1870	1870	1870	1870	1870	1870	1826	1826
Adj Flow Rate, veh/h	201	495	6	954	699	0	17	462	0	852	767	355
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	2	0	2	2	2	2	2	2	2	5	5
Cap, veh/h	515	588	385	1044	806		131	806		922	1457	877
Arrive On Green	0.15	0.17	0.17	0.21	0.23	0.00	0.07	0.23	0.00	0.27	0.42	0.42
Sat Flow, veh/h	3510	3554	1610	5023	3554	1585	1781	3554	1585	3456	3469	1547
Grp Volume(v), veh/h	201	495	6	954	699	0	17	462	0	852	767	355
Grp Sat Flow(s),veh/h/ln	1755	1777	1610	1674	1777	1585	1781	1777	1585	1728	1735	1547
Q Serve(g_s), s	7.8	20.3	0.4	27.9	28.4	0.0	1.3	17.3	0.0	36.0	24.7	19.4
Cycle Q Clear(g_c), s	7.8	20.3	0.4	27.9	28.4	0.0	1.3	17.3	0.0	36.0	24.7	19.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	515	588	385	1044	806		131	806		922	1457	877
V/C Ratio(X)	0.39	0.84	0.02	0.91	0.87		0.13	0.57		0.92	0.53	0.40
Avail Cap(c_a), veh/h	515	588	385	1105	806		131	806		922	1457	877
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.70	0.70	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.9	60.7	43.6	58.1	55.8	0.0	65.0	51.6	0.0	53.5	32.4	18.3
Incr Delay (d2), s/veh	2.2	13.7	0.1	8.3	8.9	0.0	2.1	3.0	0.0	16.2	1.4	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	10.3	0.2	12.6	13.8	0.0	0.7	8.1	0.0	17.7	10.7	7.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.2	74.4	43.7	66.4	64.8	0.0	67.1	54.5	0.0	69.7	33.8	19.7
LnGrp LOS	E	E	D	E	E		E	D		E	C	B
Approach Vol, veh/h		702			1653	A		479	A		1974	
Approach Delay, s/veh		70.0			65.7			55.0			46.8	
Approach LOS		E			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	35.2	30.8	15.0	69.0	26.0	40.0	44.0	40.0
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0
Max Green Setting (Gmax), s	33.0	23.0	11.0	63.0	22.0	34.0	40.0	34.0
Max Q Clear Time (g_c+I1), s	29.9	22.3	3.3	26.7	9.8	30.4	38.0	19.3
Green Ext Time (p_c), s	1.3	0.3	0.0	8.0	0.5	1.6	0.8	2.6

Intersection Summary	
HCM 6th Ctrl Delay	57.5
HCM 6th LOS	E

Notes

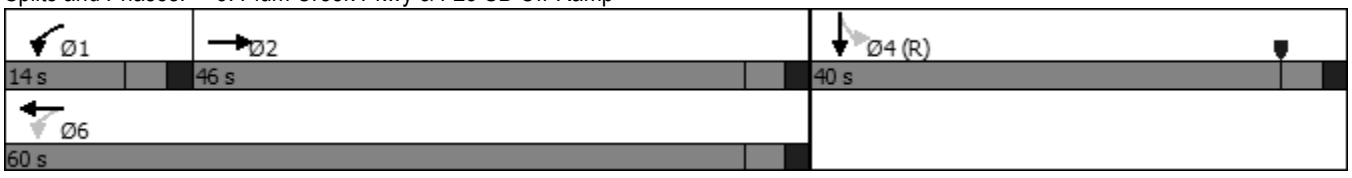
User approved pedestrian interval to be less than phase max green.

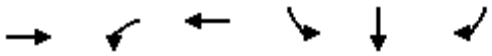
Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	945	145	753	590	5	517
Future Volume (vph)	945	145	753	590	5	517
Turn Type	NA	pm+pt	NA	Perm	NA	Free
Protected Phases	2	1	6		4	
Permitted Phases		6		4		Free
Detector Phase	2	1	6	4	4	
Switch Phase						
Minimum Initial (s)	10.0	5.0	10.0	5.0	5.0	
Minimum Split (s)	30.0	10.0	30.0	10.0	10.0	
Total Split (s)	46.0	14.0	60.0	40.0	40.0	
Total Split (%)	46.0%	14.0%	60.0%	40.0%	40.0%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes				
Recall Mode	Max	None	Max	C-Max	C-Max	
Act Effct Green (s)	42.5	56.0	56.0	36.0	36.0	100.0
Actuated g/C Ratio	0.42	0.56	0.56	0.36	0.36	1.00
v/c Ratio	0.53	0.51	0.40	0.36	0.36	0.34

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 40 (40%), Referenced to phase 4:SBTL, Start of Yellow
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.53
Intersection Signal Delay: 15.9
Intersection Capacity Utilization 78.5%
Analysis Period (min) 15

Splits and Phases: 8: Plum Creek Pkwy & I-25 SB Off-Ramp





Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1140	151	784	412	208	539
v/c Ratio	0.53	0.51	0.40	0.36	0.36	0.34
Control Delay	25.6	17.9	3.6	24.6	25.7	0.6
Queue Delay	0.2	0.2	0.8	0.1	0.2	0.0
Total Delay	25.8	18.1	4.4	24.7	26.0	0.6
Queue Length 50th (ft)	263	11	23	104	105	0
Queue Length 95th (ft)	294	m36	m43	147	173	0
Internal Link Dist (ft)	437		181		388	
Turn Bay Length (ft)						160
Base Capacity (vph)	2139	304	1981	1159	581	1583
Starvation Cap Reductn	0	11	813	0	0	0
Spillback Cap Reductn	277	0	0	147	73	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.52	0.67	0.41	0.41	0.34

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	945	150	145	753	0	0	0	0	590	5	517
Future Volume (veh/h)	0	945	150	145	753	0	0	0	0	590	5	517
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	984	156	151	784	0				619	0	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1990	315	344	1990	0				1924	0	
Arrive On Green	0.00	0.45	0.44	0.02	0.18	0.00				0.36	0.00	0.00
Sat Flow, veh/h	0	4613	703	1781	3647	0				5344	0	1585
Grp Volume(v), veh/h	0	753	387	151	784	0				619	0	0
Grp Sat Flow(s),veh/h/ln	0	1702	1744	1781	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	15.7	15.8	4.2	19.4	0.0				8.4	0.0	0.0
Cycle Q Clear(g_c), s	0.0	15.7	15.8	4.2	19.4	0.0				8.4	0.0	0.0
Prop In Lane	0.00		0.40	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1524	781	344	1990	0				1924	0	
V/C Ratio(X)	0.00	0.49	0.50	0.44	0.39	0.00				0.32	0.00	
Avail Cap(c_a), veh/h	0	1524	781	393	1990	0				1924	0	
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.54	0.54	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	19.6	19.8	14.6	25.8	0.0				23.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.1	2.2	0.5	0.3	0.0				0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.3	6.7	1.8	9.3	0.0				3.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	20.7	22.0	15.1	26.2	0.0				23.6	0.0	0.0
LnGrp LOS	A	C	C	B	C	A				C	A	
Approach Vol, veh/h		1140			935						619	A
Approach Delay, s/veh		21.2			24.4						23.6	
Approach LOS		C			C						C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	11.2	48.8		40.0		60.0
Change Period (Y+Rc), s	5.0	5.0		5.0		5.0
Max Green Setting (Gmax), s	9.0	41.0		35.0		55.0
Max Q Clear Time (g_c+I1), s	6.2	17.8		10.4		21.4
Green Ext Time (p_c), s	0.1	8.5		2.4		6.4

Intersection Summary		
HCM 6th Ctrl Delay		22.8
HCM 6th LOS		C

Notes

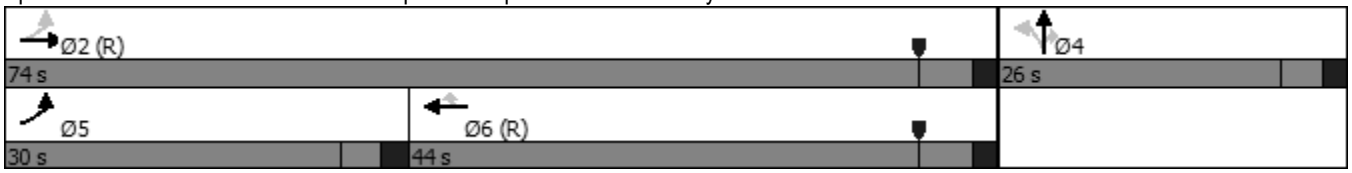
User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	514	1021	723	870	175	5	145
Future Volume (vph)	514	1021	723	870	175	5	145
Turn Type	pm+pt	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6			4	
Permitted Phases	2			6	4		4
Detector Phase	5	2	6	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0	5.0
Minimum Split (s)	10.0	31.0	24.0	24.0	40.0	40.0	40.0
Total Split (s)	30.0	74.0	44.0	44.0	26.0	26.0	26.0
Total Split (%)	30.0%	74.0%	44.0%	44.0%	26.0%	26.0%	26.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-2.0	-2.0	-2.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max
Act Effct Green (s)	70.0	70.0	40.0	40.0	22.0	22.0	22.0
Actuated g/C Ratio	0.70	0.70	0.40	0.40	0.22	0.22	0.22
v/c Ratio	0.98	0.29	0.83	0.58	0.36	0.29	0.22

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 83 (83%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 29.4
Intersection Capacity Utilization 78.5%
Analysis Period (min) 15

Splits and Phases: 9: I-25 NB Off-Ramp/On-Ramp & Plum Creek Pkwy





Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	524	1042	1111	515	134	108	90
v/c Ratio	0.98	0.29	0.83	0.58	0.36	0.29	0.22
Control Delay	64.7	3.7	30.9	4.8	36.4	19.8	8.6
Queue Delay	39.5	0.4	0.0	0.0	0.0	0.0	0.0
Total Delay	104.2	4.2	30.9	4.8	36.4	19.8	8.6
Queue Length 50th (ft)	321	16	317	0	76	30	0
Queue Length 95th (ft)	#505	81	410	71	135	82	42
Internal Link Dist (ft)		181	431			480	
Turn Bay Length (ft)					350		150
Base Capacity (vph)	536	3559	1344	885	369	378	401
Starvation Cap Reductn	106	1867	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.22	0.62	0.83	0.58	0.36	0.29	0.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	514	1021	0	0	723	870	175	5	145	0	0	0
Future Volume (veh/h)	514	1021	0	0	723	870	175	5	145	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	524	1042	0	0	715	903	227	0	100			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	541	3574	0	0	748	1268	784	0	349			
Arrive On Green	0.52	1.00	0.00	0.00	0.40	0.40	0.22	0.00	0.22			
Sat Flow, veh/h	1781	5274	0	0	1870	3170	3563	0	1585			
Grp Volume(v), veh/h	524	1042	0	0	715	903	227	0	100			
Grp Sat Flow(s),veh/h/ln	1781	1702	0	0	1870	1585	1781	0	1585			
Q Serve(g_s), s	23.7	0.0	0.0	0.0	37.1	23.9	5.3	0.0	5.3			
Cycle Q Clear(g_c), s	23.7	0.0	0.0	0.0	37.1	23.9	5.3	0.0	5.3			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	541	3574	0	0	748	1268	784	0	349			
V/C Ratio(X)	0.97	0.29	0.00	0.00	0.96	0.71	0.29	0.00	0.29			
Avail Cap(c_a), veh/h	541	3574	0	0	748	1268	784	0	349			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.87	0.87	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	16.8	0.0	0.0	0.0	29.1	25.2	32.5	0.0	32.5			
Incr Delay (d2), s/veh	28.3	0.2	0.0	0.0	23.7	3.4	0.9	0.0	2.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	7.1	0.1	0.0	0.0	20.9	9.3	2.4	0.0	5.1			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.1	0.2	0.0	0.0	52.8	28.6	33.4	0.0	34.5			
LnGrp LOS	D	A	A	A	D	C	C	A	C			
Approach Vol, veh/h		1566			1618			327				
Approach Delay, s/veh		15.2			39.3			33.8				
Approach LOS		B			D			C				

Timer - Assigned Phs		2		4	5	6						
Phs Duration (G+Y+Rc), s		74.0		26.0	30.0	44.0						
Change Period (Y+Rc), s		6.0		5.0	5.0	6.0						
Max Green Setting (Gmax), s		68.0		21.0	25.0	38.0						
Max Q Clear Time (g_c+I1), s		2.0		7.3	25.7	39.1						
Green Ext Time (p_c), s		9.9		0.9	0.0	0.0						

Intersection Summary												
HCM 6th Ctrl Delay			28.0									
HCM 6th LOS			C									

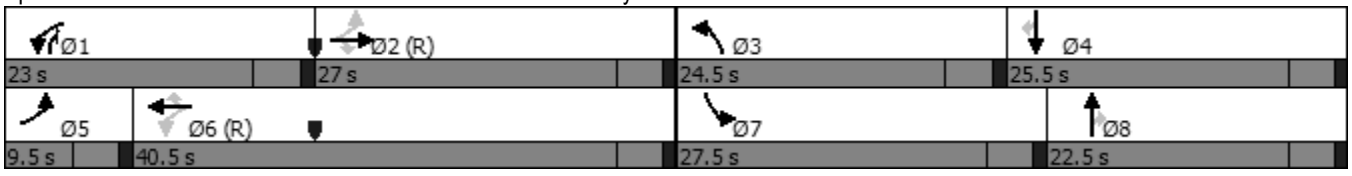
Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	635	277	415	750	105	134	497	290	170	504	60
Future Volume (vph)	45	635	277	415	750	105	134	497	290	170	504	60
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases	2		2	6		6			8			4
Detector Phase	5	2	2	1	6	6	3	8	1	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	9.5	9.5	22.5	22.5
Total Split (s)	9.5	27.0	27.0	23.0	40.5	40.5	24.5	22.5	23.0	27.5	25.5	25.5
Total Split (%)	9.5%	27.0%	27.0%	23.0%	40.5%	40.5%	24.5%	22.5%	23.0%	27.5%	25.5%	25.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	Max	Max
Act Effct Green (s)	28.5	23.0	23.0	46.0	38.4	38.4	14.0	30.8	53.8	11.2	28.0	28.0
Actuated g/C Ratio	0.28	0.23	0.23	0.46	0.38	0.38	0.14	0.31	0.54	0.11	0.28	0.28
v/c Ratio	0.21	0.85	0.51	1.10	0.60	0.17	0.59	0.50	0.33	0.48	0.55	0.12

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.10
Intersection Signal Delay: 35.5
Intersection Capacity Utilization 75.2%
Analysis Period (min) 15

Splits and Phases: 10: Prairie Hawk Drive & Plum Creek Pkwy

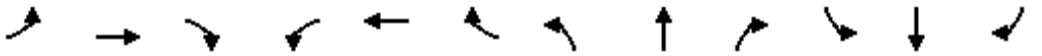


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	49	690	301	451	815	114	146	540	315	185	548	65
v/c Ratio	0.21	0.85	0.51	1.10	0.60	0.17	0.59	0.50	0.33	0.48	0.55	0.12
Control Delay	18.9	48.2	7.1	99.4	19.2	1.7	49.5	30.7	6.1	45.5	34.1	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.9	48.2	7.1	99.4	19.2	1.7	49.5	30.7	6.1	45.5	34.1	0.4
Queue Length 50th (ft)	17	222	0	~268	198	2	88	147	36	58	156	0
Queue Length 95th (ft)	38	#313	66	#465	249	8	144	208	91	89	227	0
Internal Link Dist (ft)		832			922			624			893	
Turn Bay Length (ft)	230		230	230		230	230		230	230		250
Base Capacity (vph)	237	813	595	410	1358	678	362	1089	941	806	990	561
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.85	0.51	1.10	0.60	0.17	0.40	0.50	0.33	0.23	0.55	0.12

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	635	277	415	750	105	134	497	290	170	504	60
Future Volume (veh/h)	45	635	277	415	750	105	134	497	290	170	504	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	49	690	301	451	815	0	146	540	315	185	548	65
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	363	1197	534	498	1696		188	849	668	282	764	341
Arrive On Green	0.04	0.34	0.34	0.18	0.48	0.00	0.11	0.24	0.24	0.08	0.22	0.22
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	49	690	301	451	815	0	146	540	315	185	548	65
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1777	1585	1728	1777	1585
Q Serve(g_s), s	1.8	16.0	15.5	15.6	15.6	0.0	8.0	13.6	14.3	5.2	14.3	3.4
Cycle Q Clear(g_c), s	1.8	16.0	15.5	15.6	15.6	0.0	8.0	13.6	14.3	5.2	14.3	3.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	363	1197	534	498	1696		188	849	668	282	764	341
V/C Ratio(X)	0.14	0.58	0.56	0.91	0.48		0.78	0.64	0.47	0.66	0.72	0.19
Avail Cap(c_a), veh/h	386	1197	534	511	1696		365	849	668	812	764	341
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.8	27.3	27.1	18.6	17.7	0.0	43.6	34.1	20.9	44.6	36.4	32.1
Incr Delay (d2), s/veh	0.2	2.0	4.3	19.4	1.0	0.0	6.7	1.6	0.5	2.6	5.7	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	6.7	6.3	8.2	6.0	0.0	3.8	5.9	5.2	2.3	6.7	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.0	29.3	31.4	38.0	18.7	0.0	50.3	35.7	21.4	47.2	42.1	33.4
LnGrp LOS	C	C	C	D	B		D	D	C	D	D	C
Approach Vol, veh/h		1040			1266	A		1001			798	
Approach Delay, s/veh		29.5			25.6			33.3			42.6	
Approach LOS		C			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.3	37.7	14.6	25.5	8.2	51.7	12.2	27.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	18.5	22.5	20.0	21.0	5.0	36.0	23.0	18.0
Max Q Clear Time (g_c+I1), s	17.6	18.0	10.0	16.3	3.8	17.6	7.2	16.3
Green Ext Time (p_c), s	0.2	2.2	0.2	1.6	0.0	5.0	0.5	0.8

Intersection Summary	
HCM 6th Ctrl Delay	31.8
HCM 6th LOS	C

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

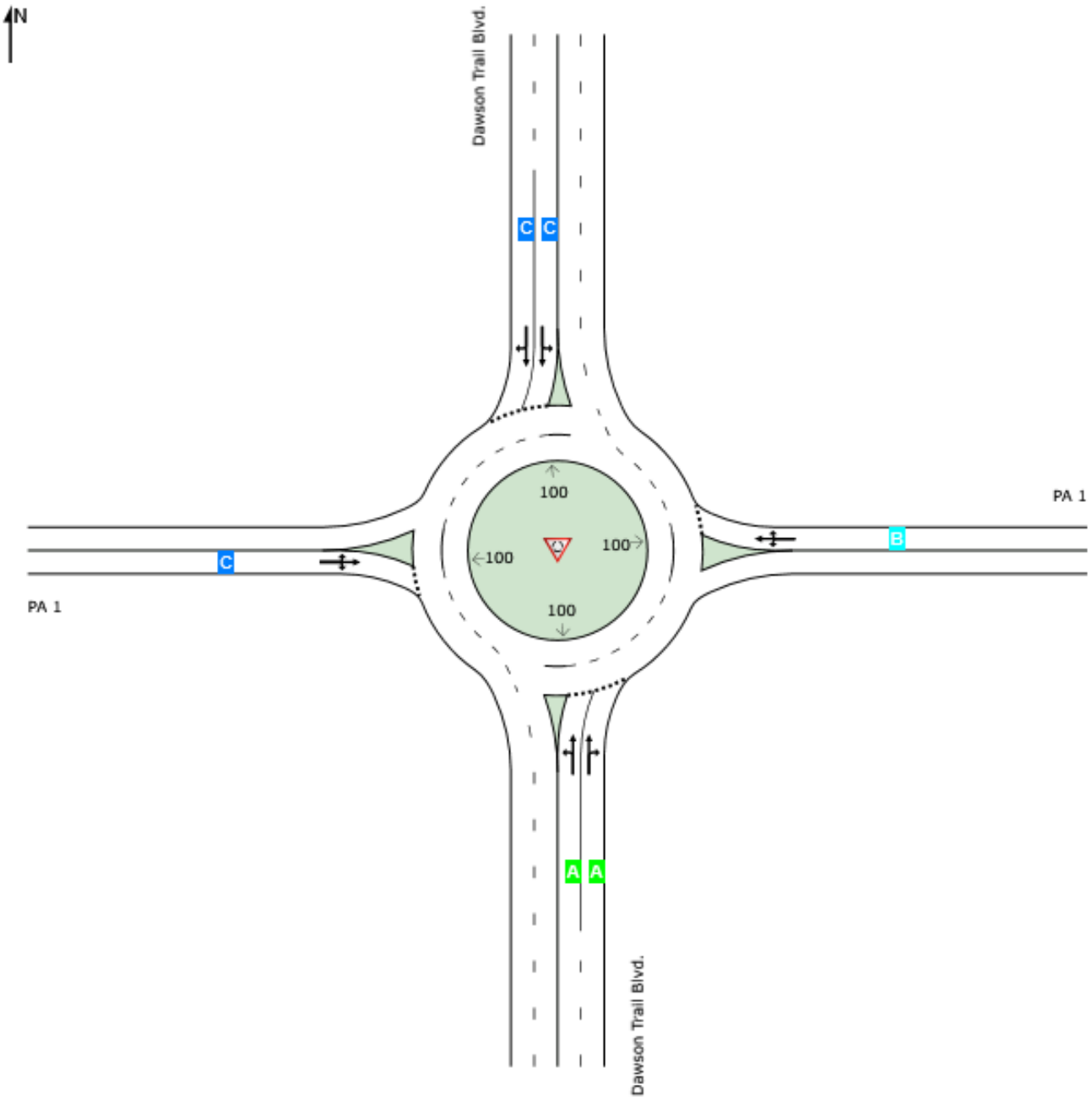
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 101 [Int#101_2040 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	A	B	C	C	B



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 8:53:56 AM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int#101.sip9

DELAY (CONTROL)

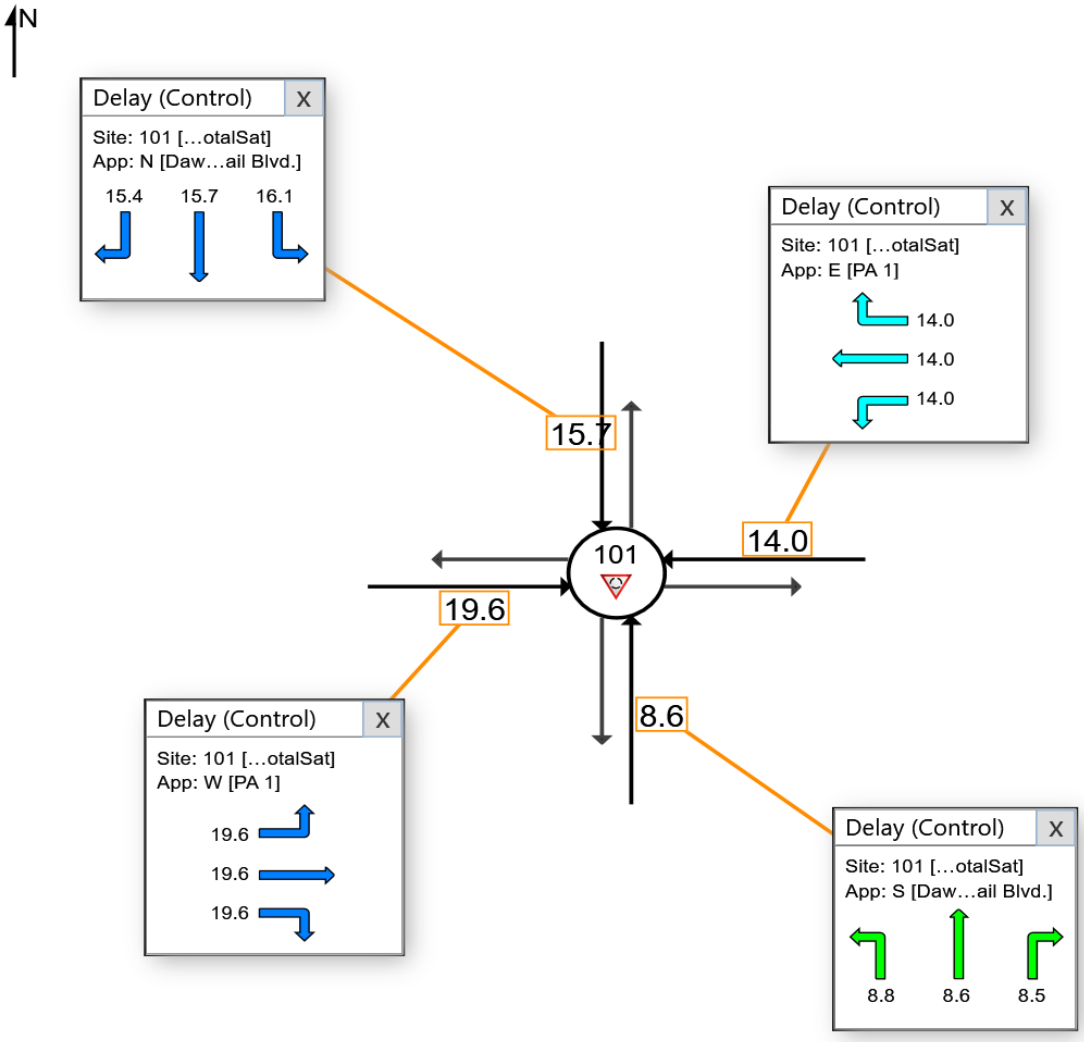
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 101 [Int#101_2040 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

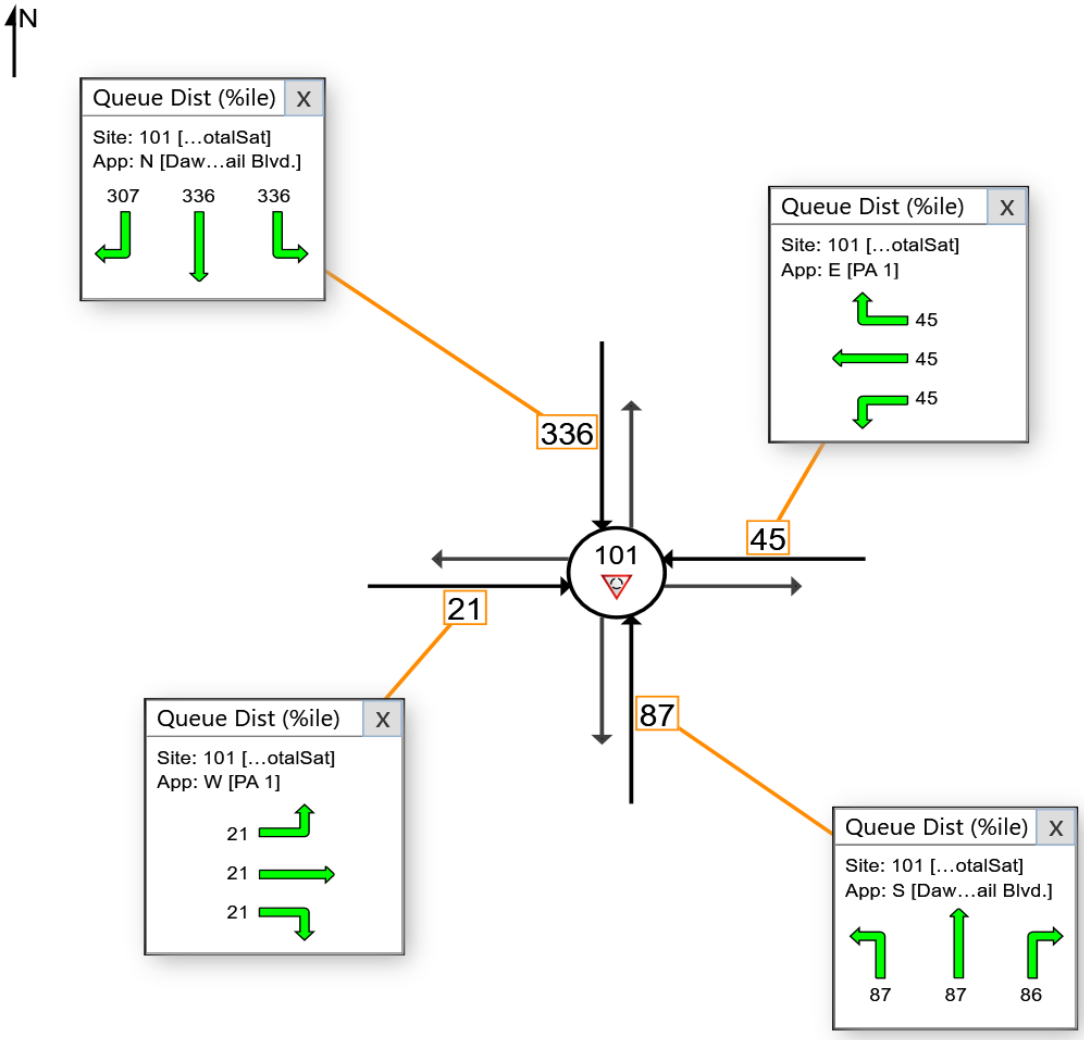
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 101 [Int#101_2040 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



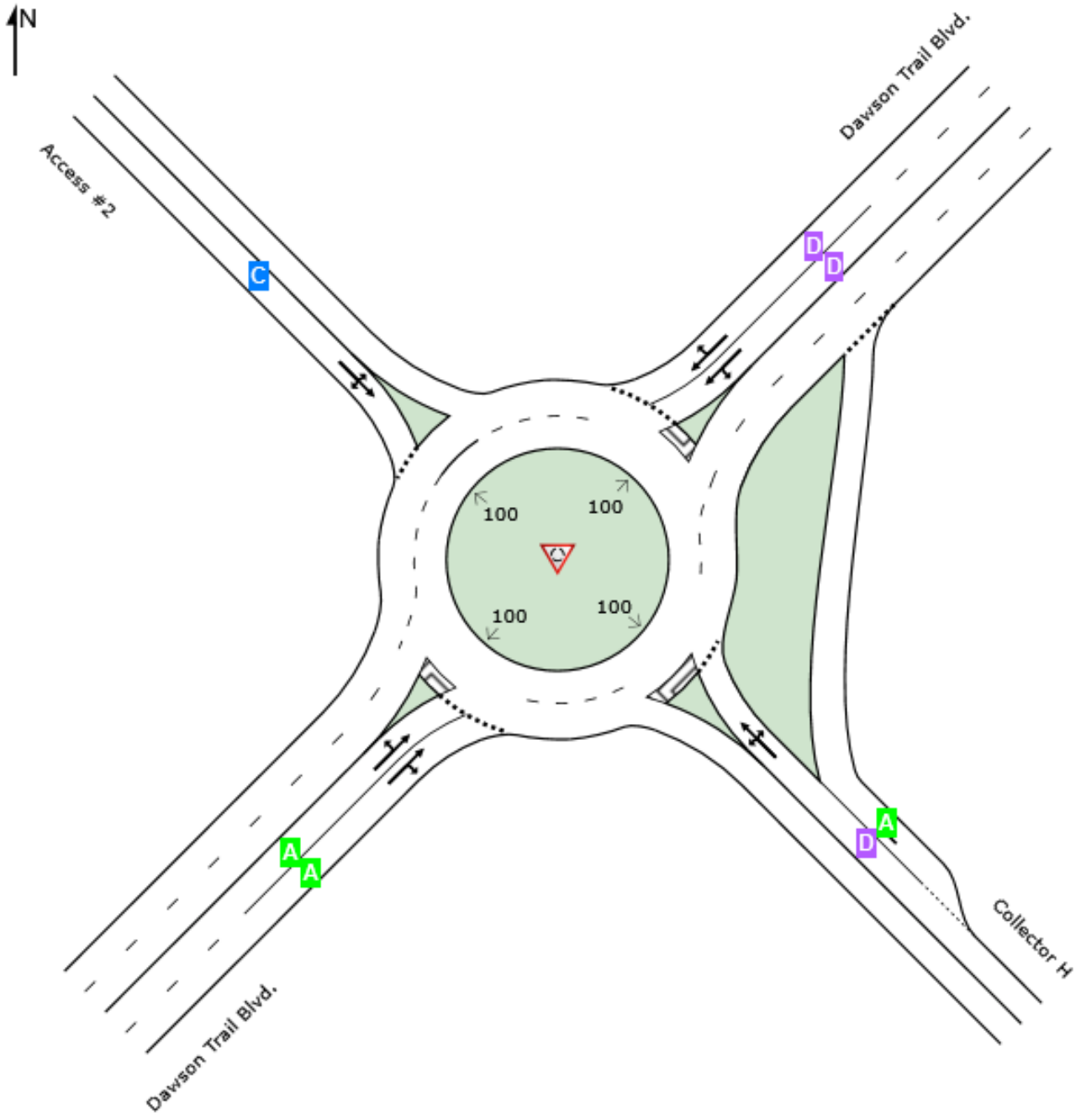
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 102 [Int #102_2040 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
LOS	D	D	C	A	C



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 9:08:09 AM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #102-mod.sip9

DELAY (CONTROL)

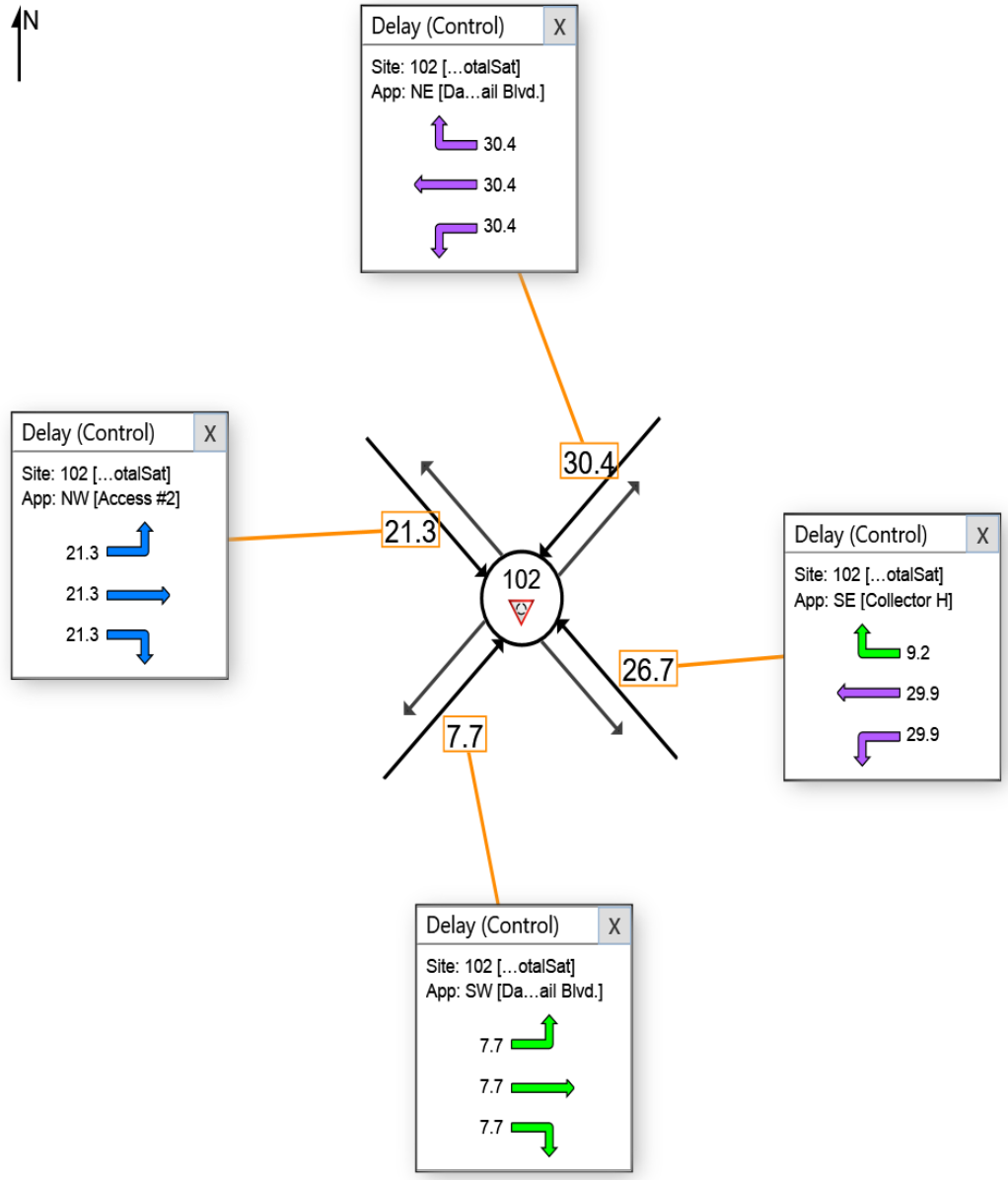
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 102 [Int #102_2040 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

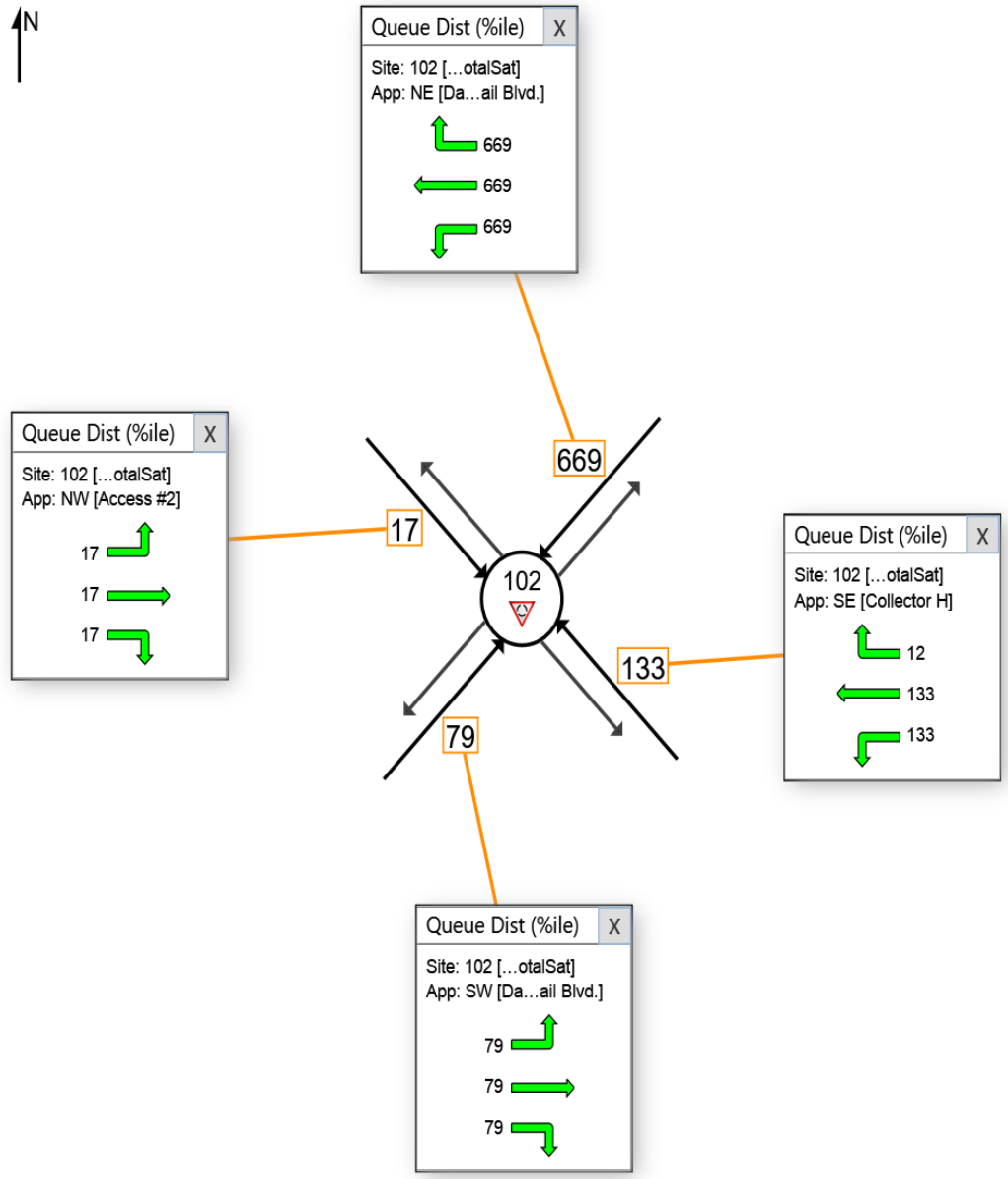
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 102 [Int #102_2040 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↱			↱	↰	↑↑	↱	↰	↑↑	↱
Traffic Vol, veh/h	0	0	42	0	0	91	38	1103	255	87	1893	12
Future Vol, veh/h	0	0	42	0	0	91	38	1103	255	87	1893	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	200	-	200	200	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	46	0	0	99	39	1126	260	89	1932	12

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	966	-	-	563	1944	0	0	1386	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	254	0	0	470	298	-	-	490	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	254	-	-	470	298	-	-	490	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	22.3	14.7	0.5	0.6
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	298	-	-	254	470	490	-	-
HCM Lane V/C Ratio	0.13	-	-	0.18	0.21	0.181	-	-
HCM Control Delay (s)	18.9	-	-	22.3	14.7	14	-	-
HCM Lane LOS	C	-	-	C	B	B	-	-
HCM 95th %tile Q(veh)	0.4	-	-	0.6	0.8	0.7	-	-

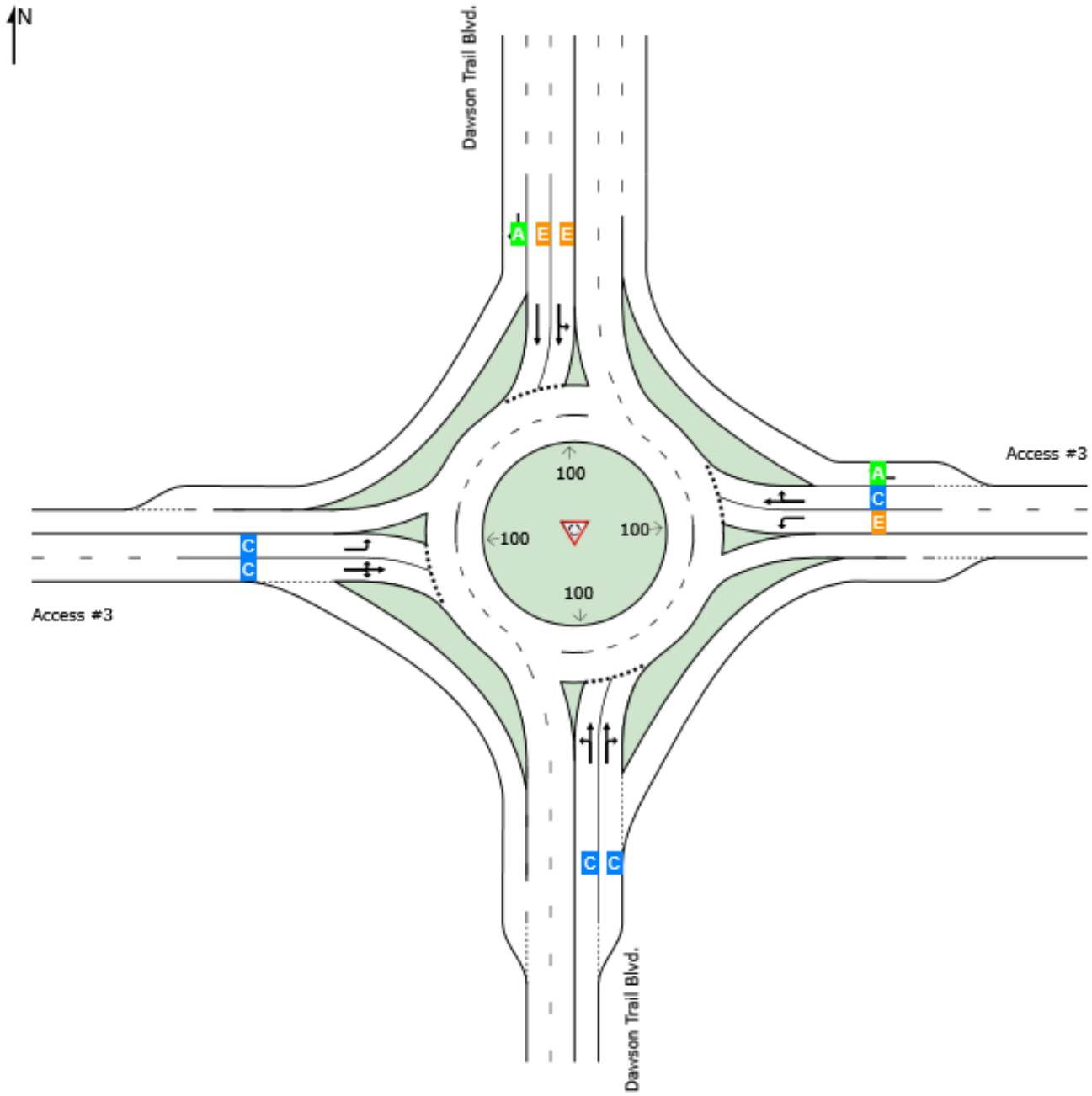
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 104 [Int#104_2040 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	C	D	D	C	D



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 9:28:39 AM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #104-mod.sip9

DELAY (CONTROL)

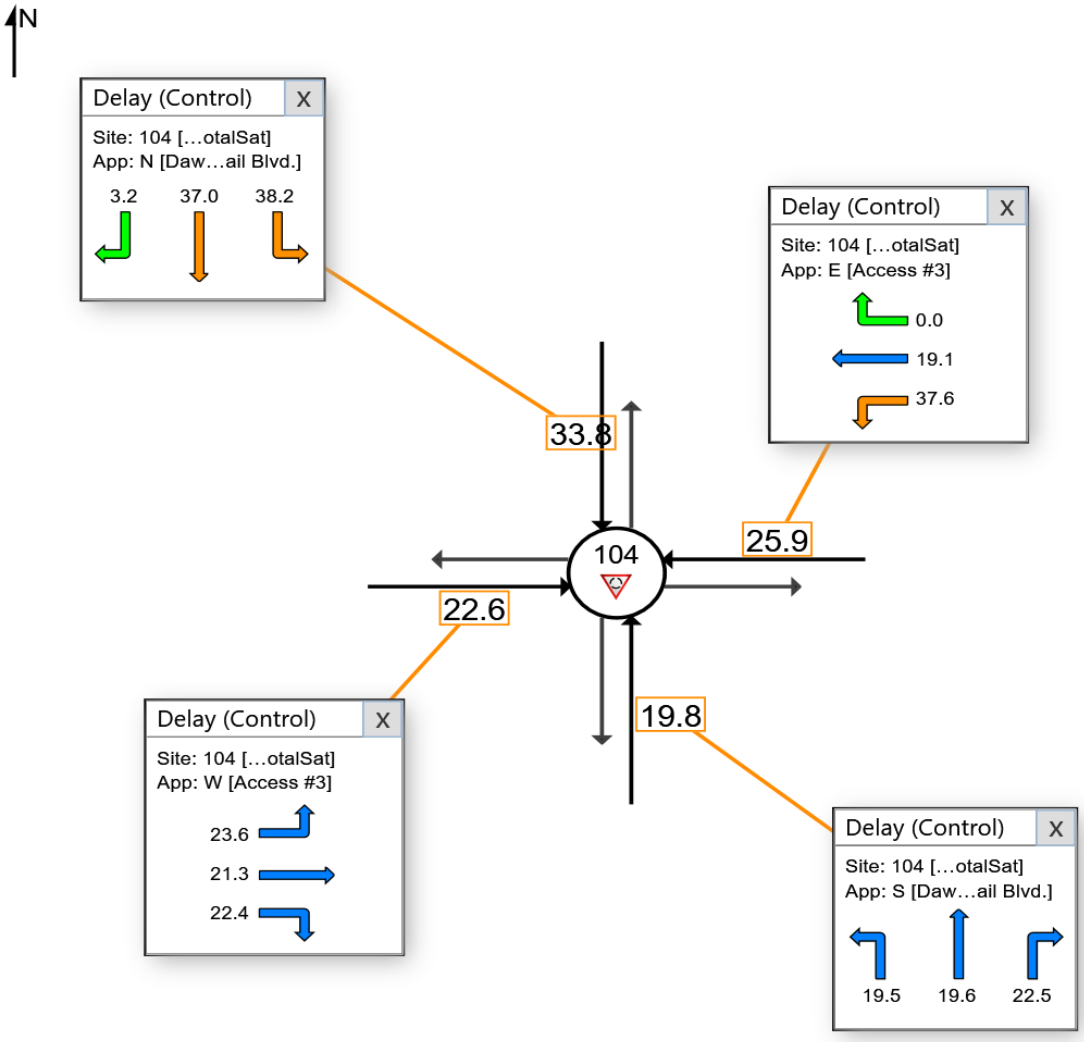
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 104 [Int#104_2040 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

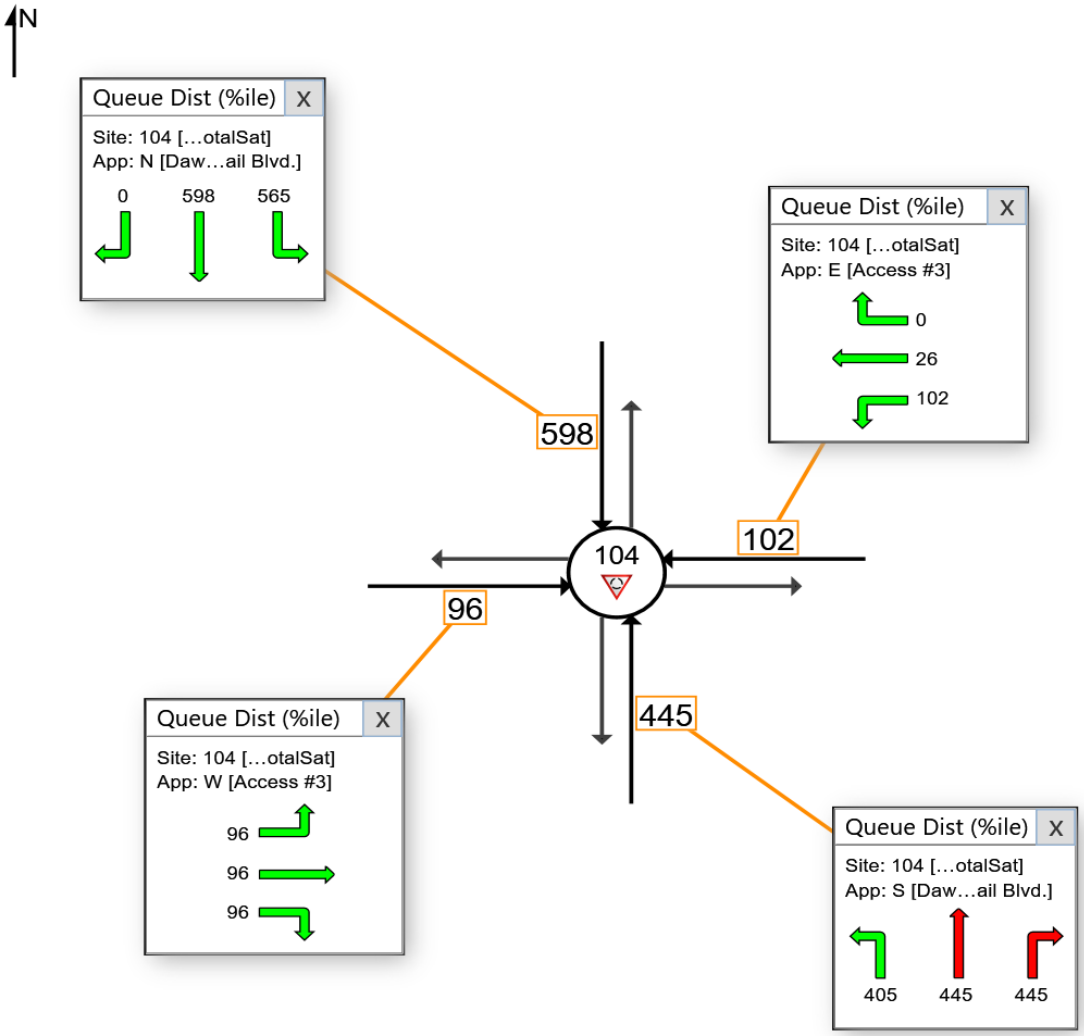
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 104 [Int#104_2040 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popups. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



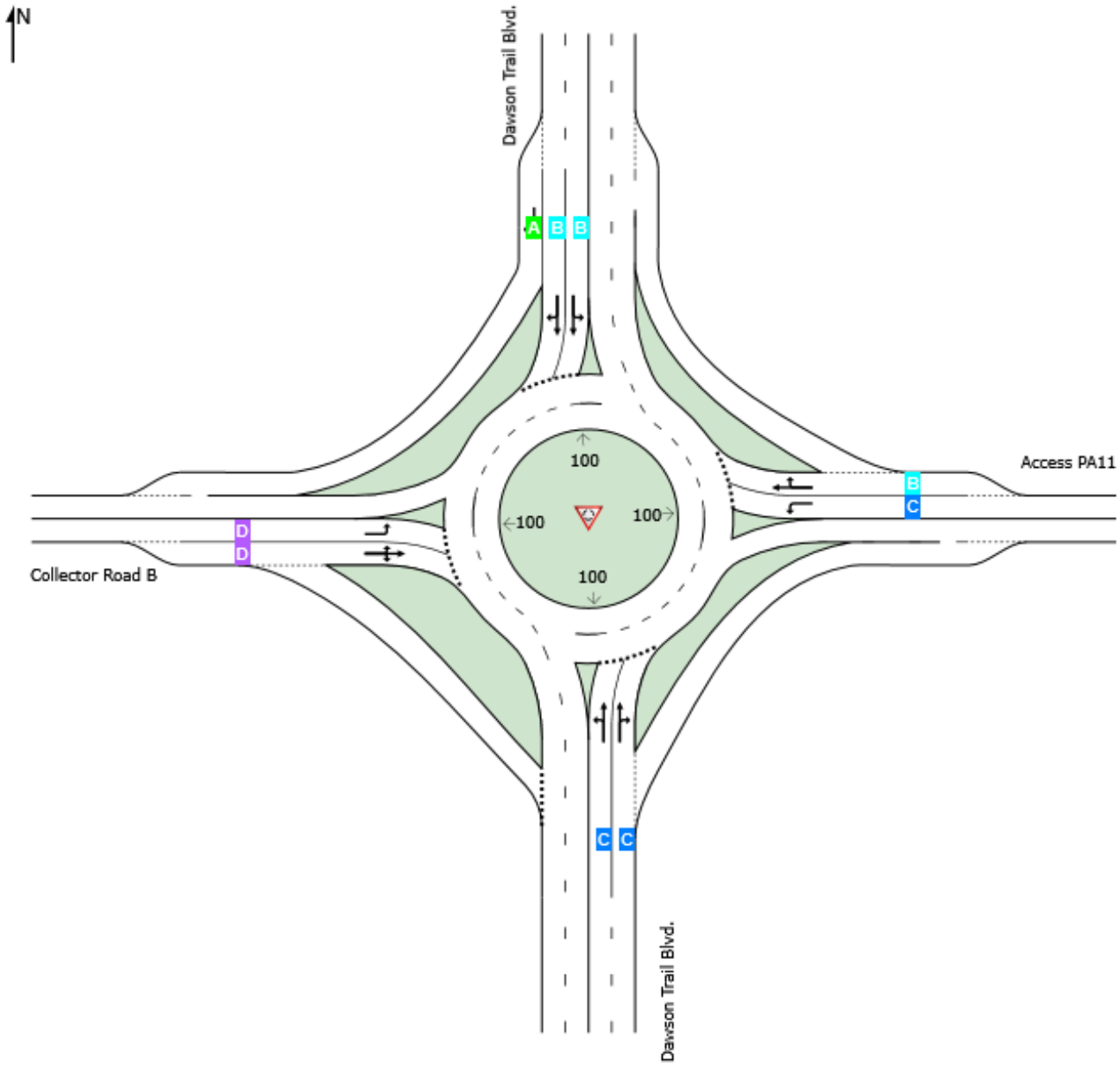
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 105 [Int#105_2040 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	C	B	B	D	C



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 9:36:26 AM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #105-mod.sip9

DELAY (CONTROL)

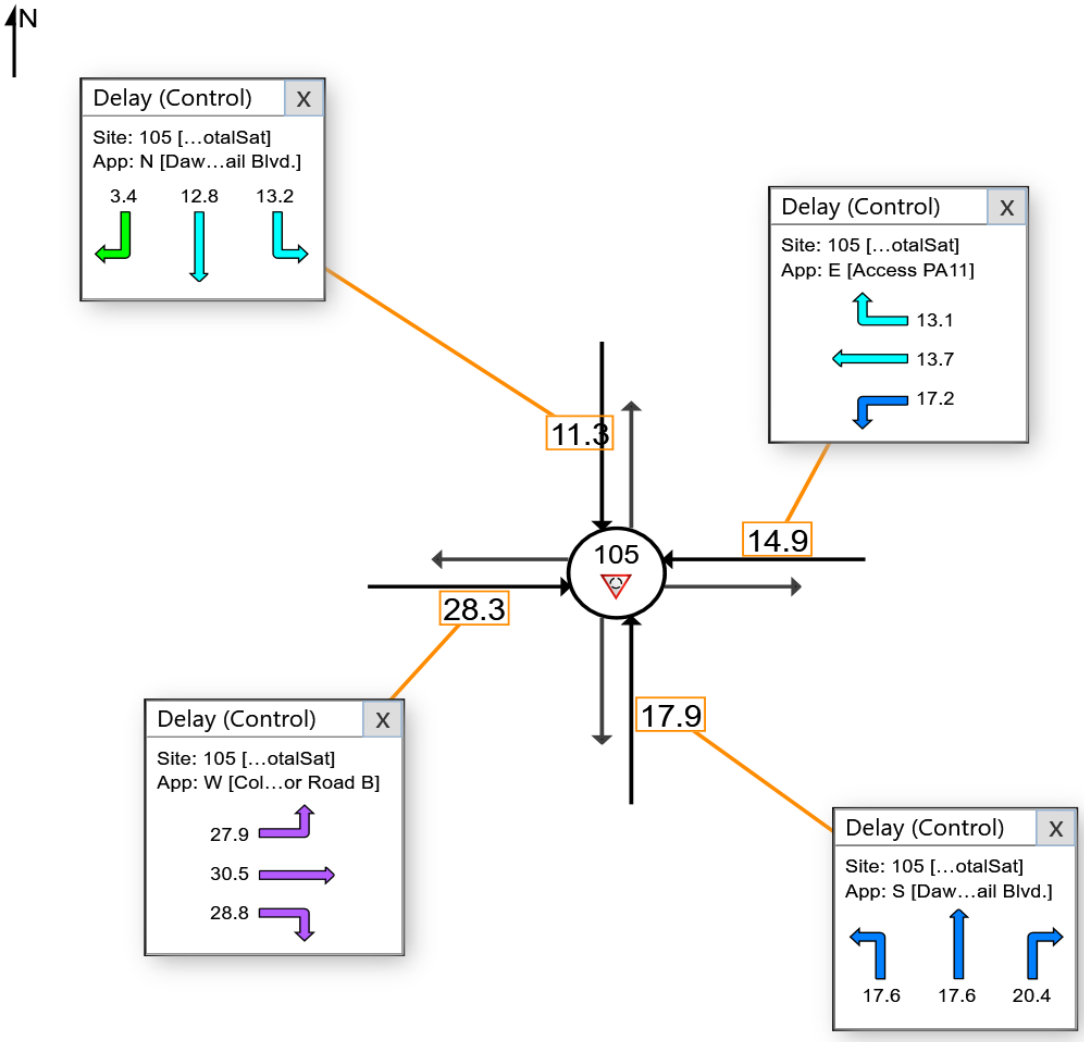
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 105 [Int#105_2040 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

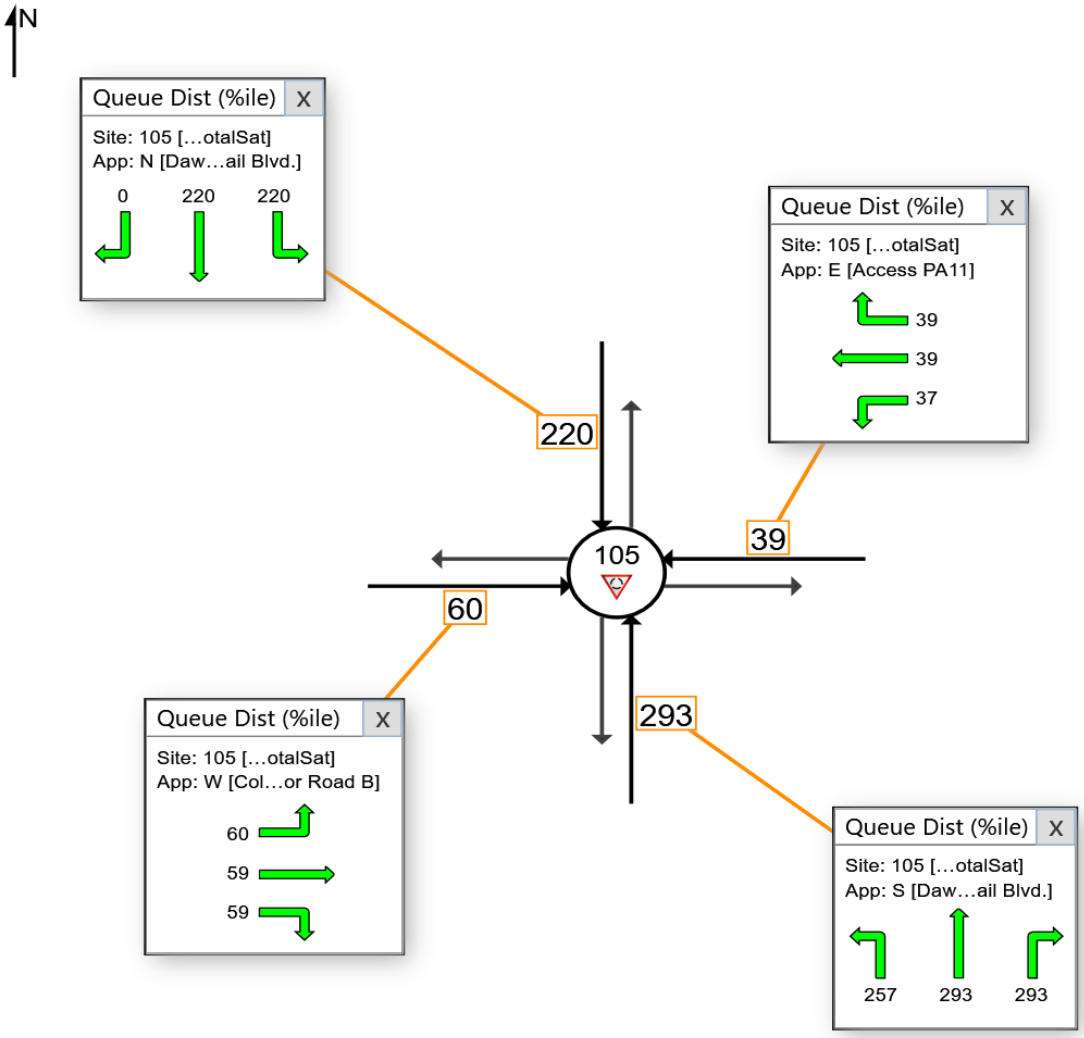
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 105 [Int#105_2040 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



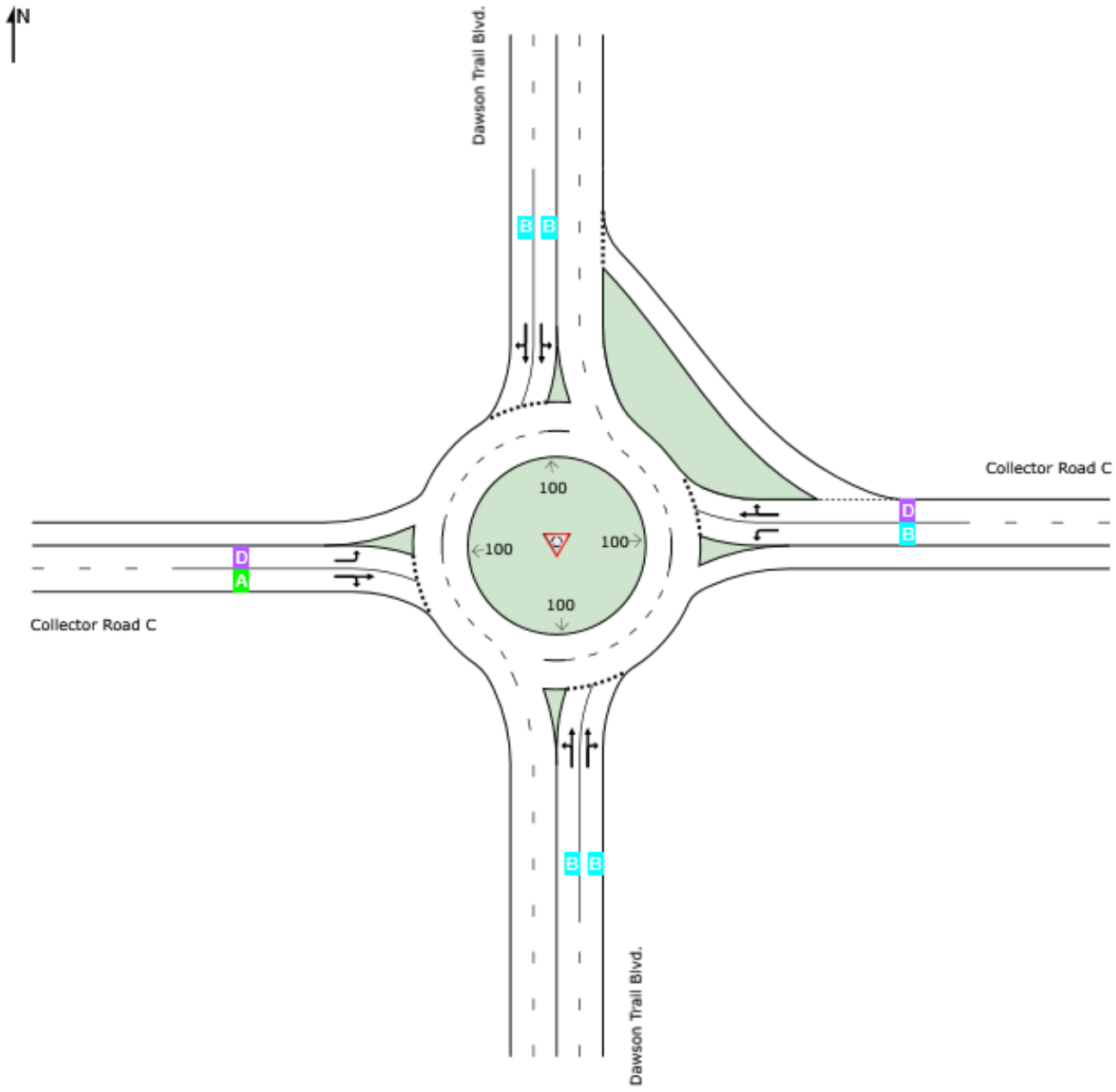
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 106 [Int#106_2040 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	B	C	B	D	C



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 9:50:35 AM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int#106-mod.sip9

DELAY (CONTROL)

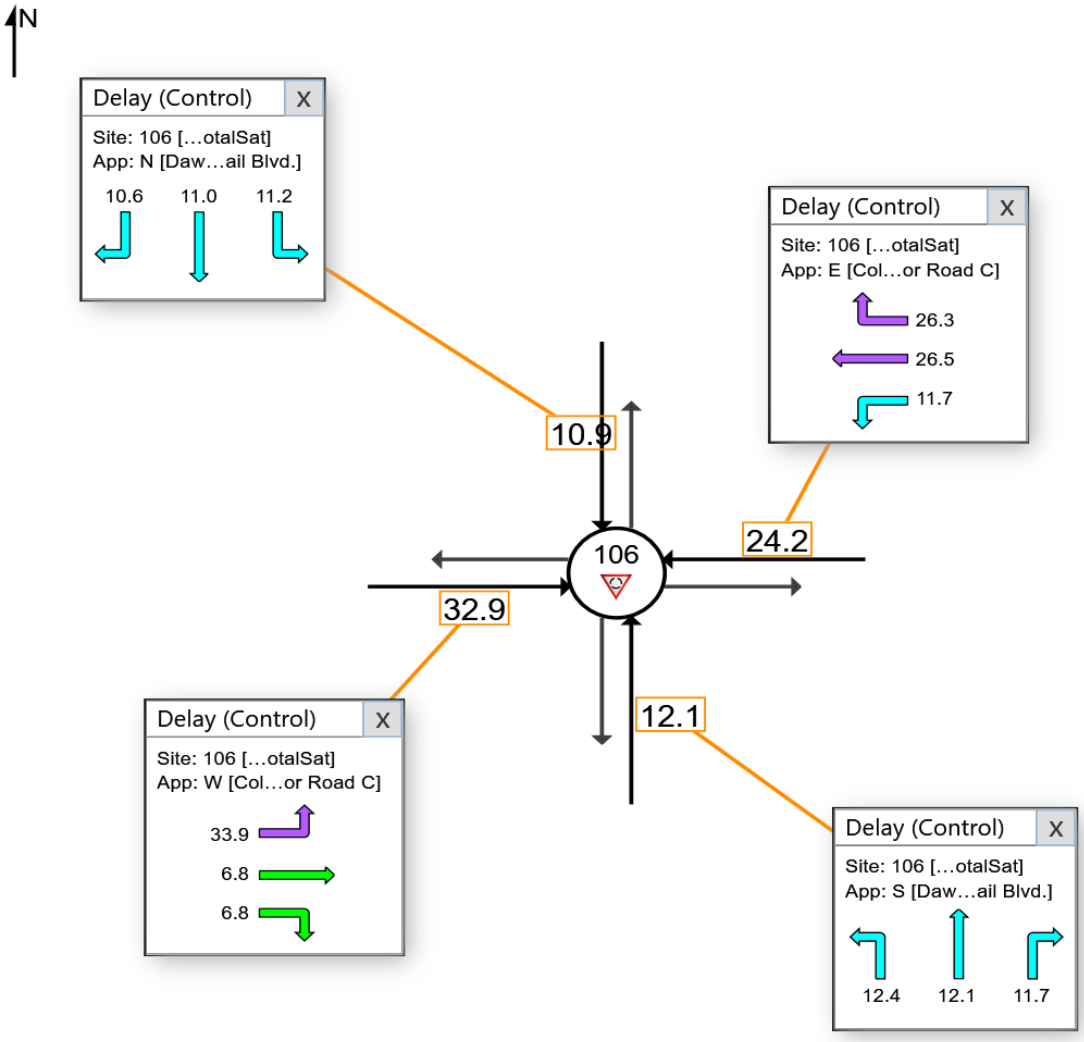
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 106 [Int#106_2040 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

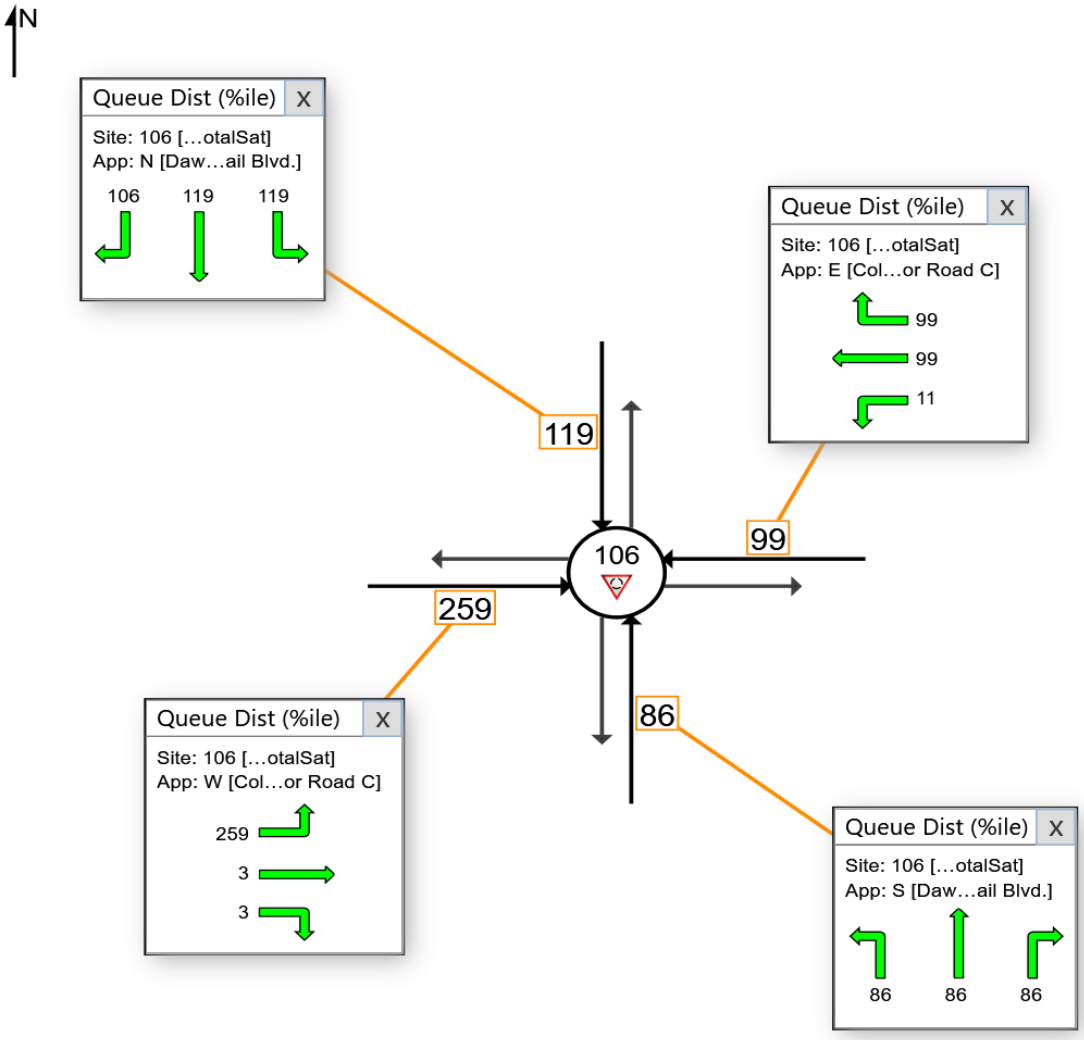
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 106 [Int#106_2040 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



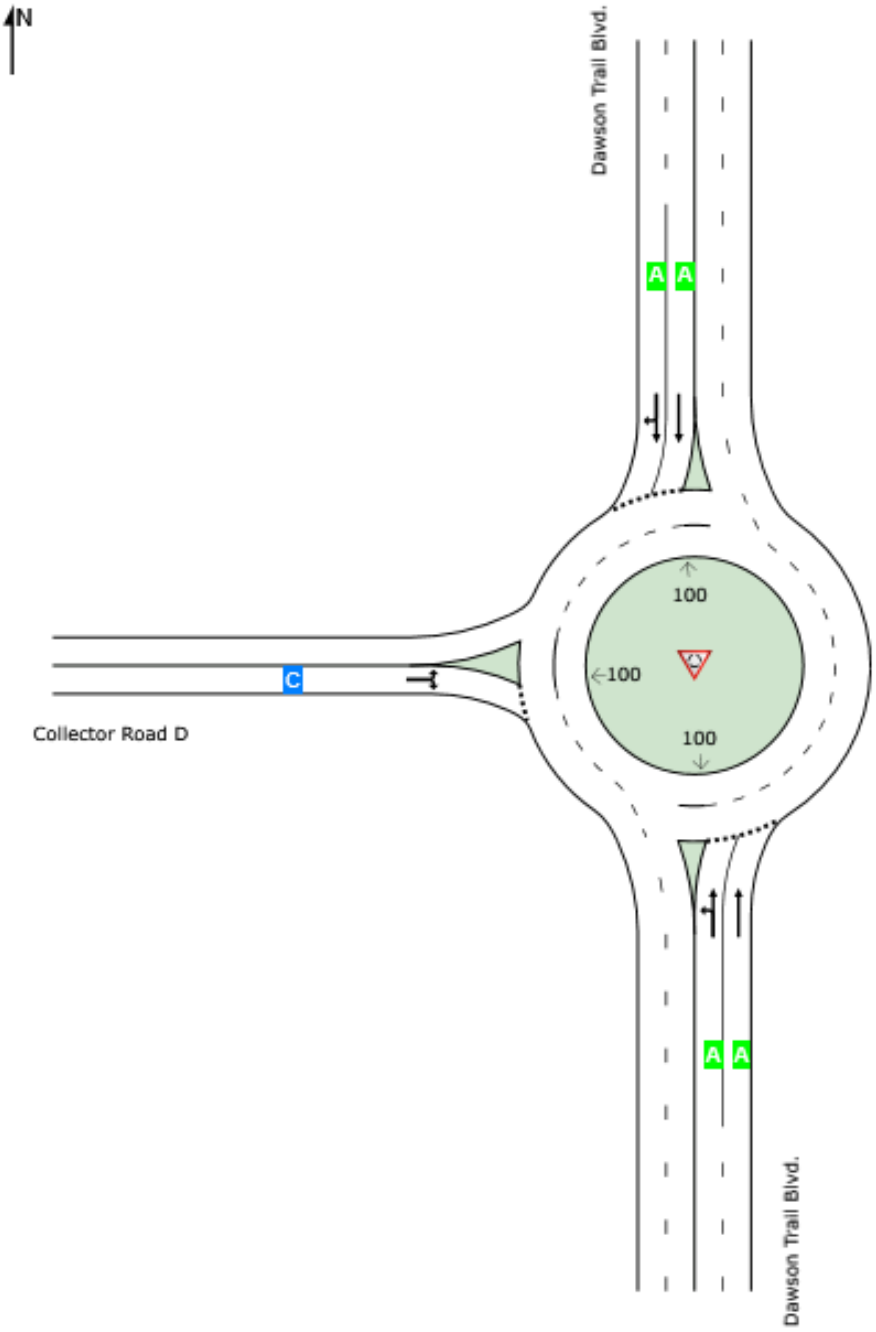
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 107 [Int#107_2040 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches			Intersection
	South	North	West	
LOS	A	A	C	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 10:01:02 AM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int#107.sip9

DELAY (CONTROL)

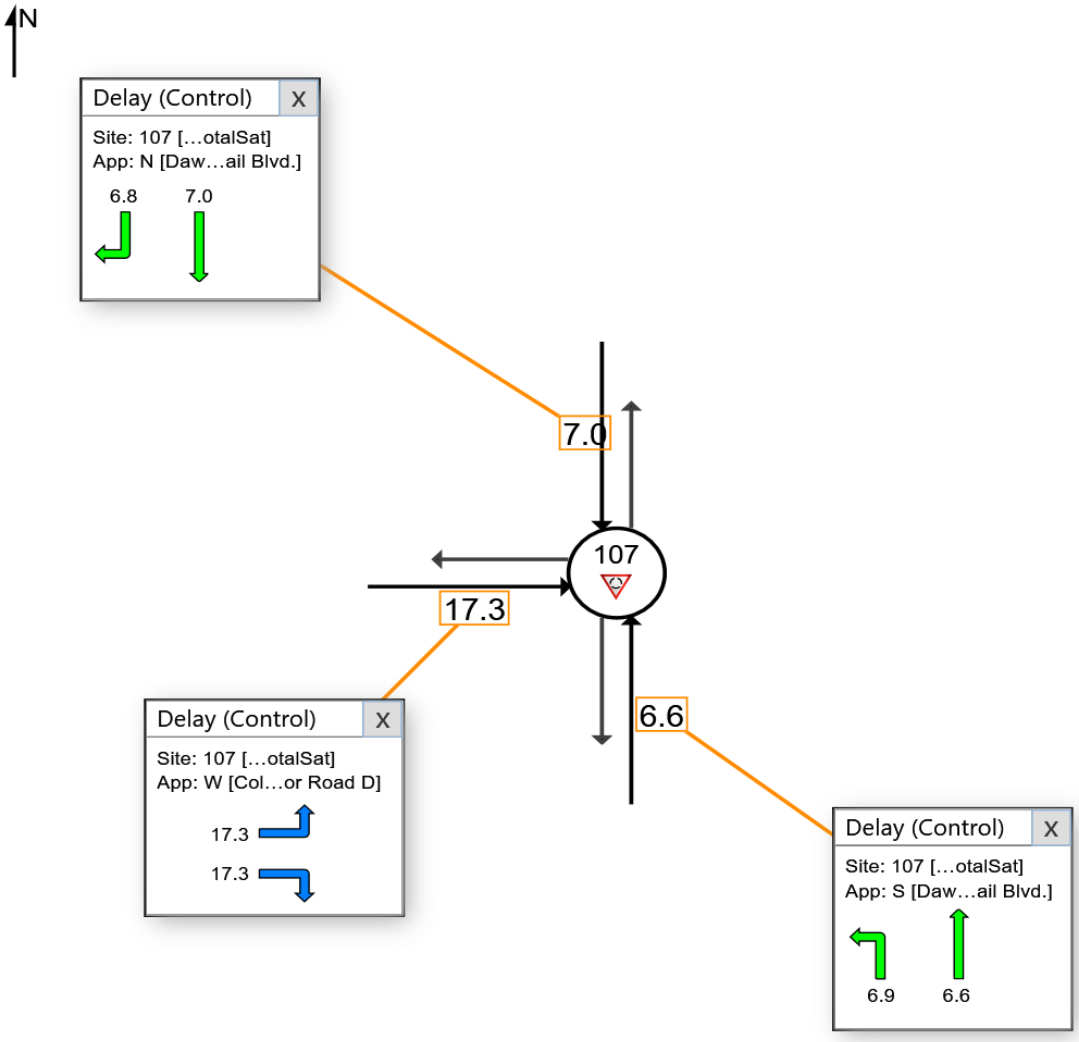
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 107 [Int#107_2040 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

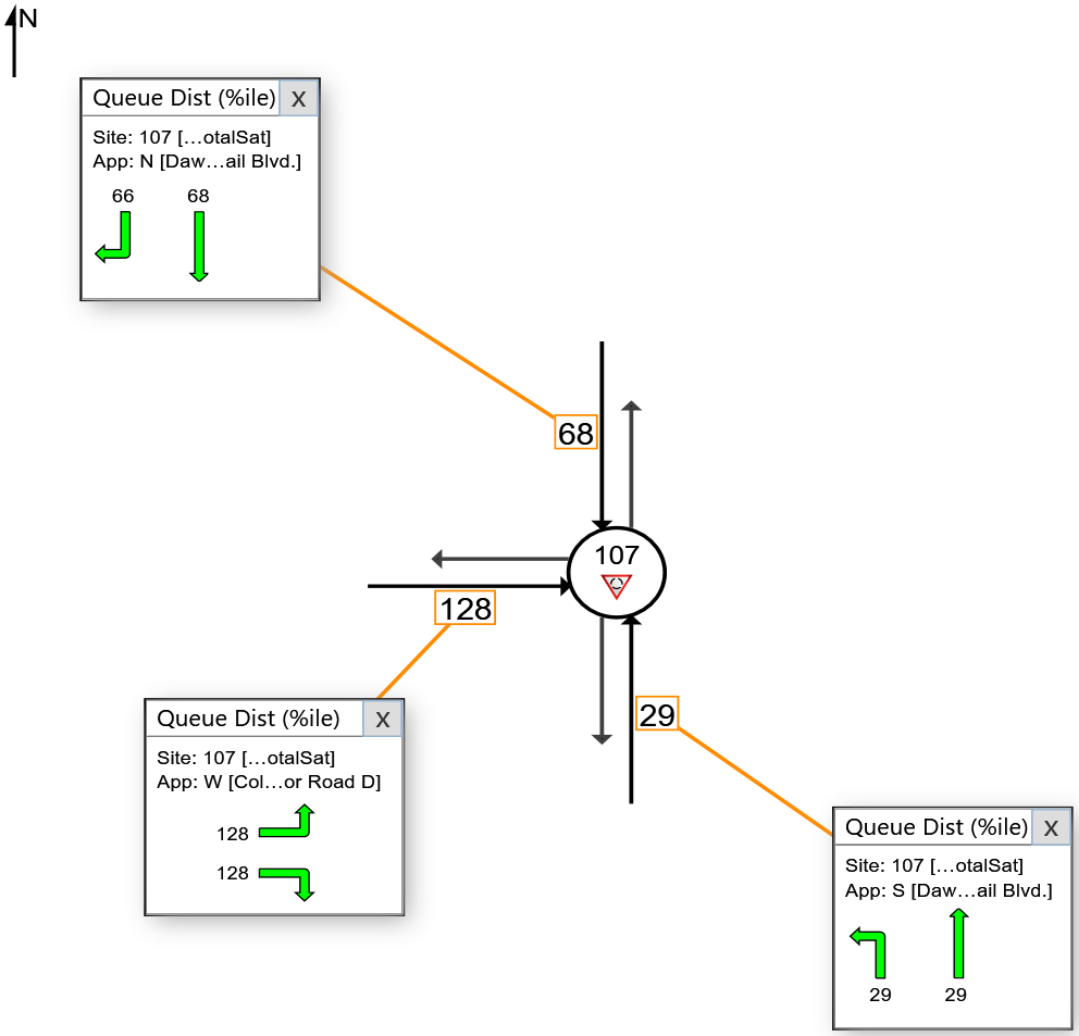
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 107 [Int#107_2040 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



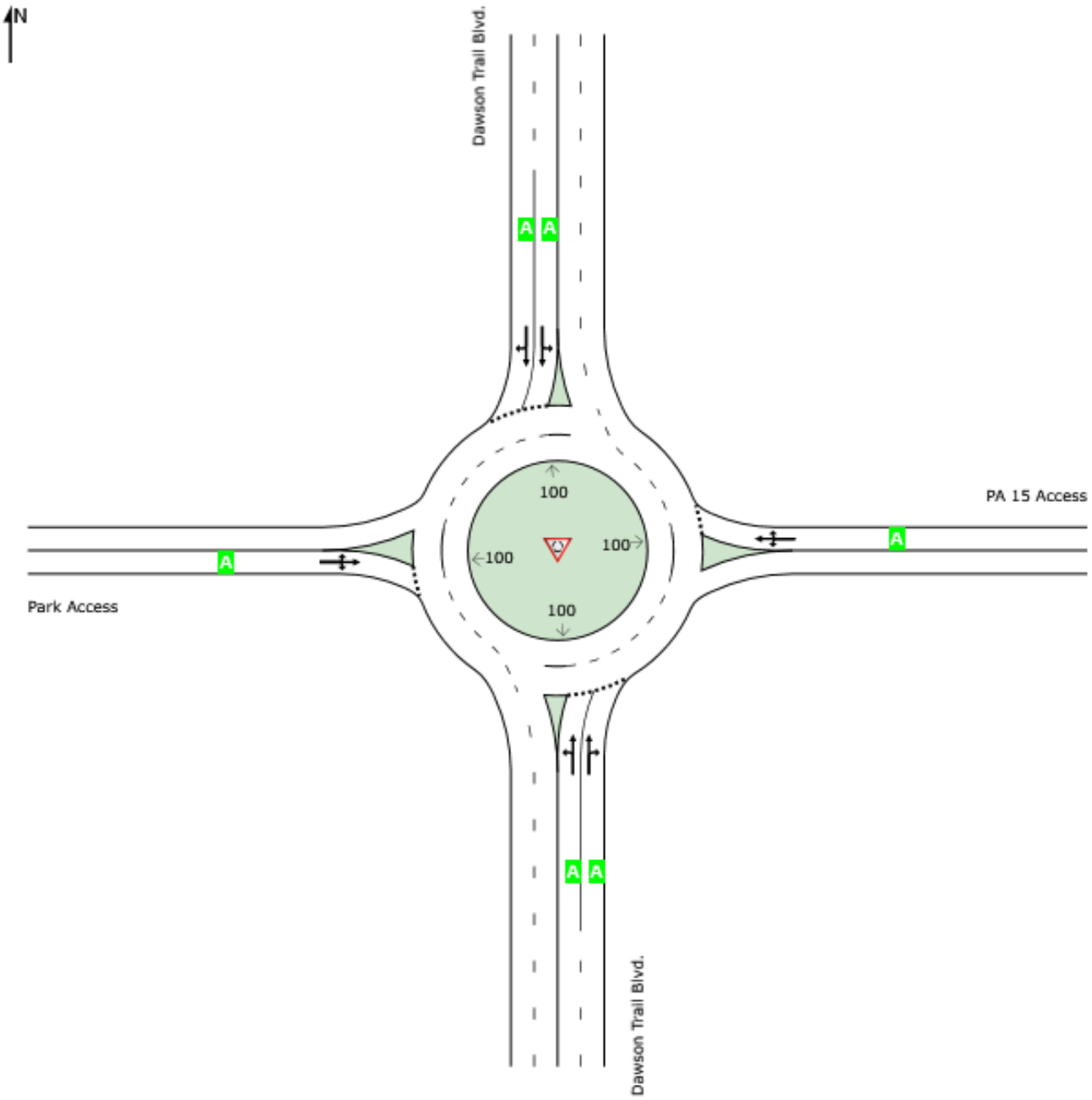
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 101 [Int#108_2040 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	A	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 12:52:32 PM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int#108.sip9

DELAY (CONTROL)

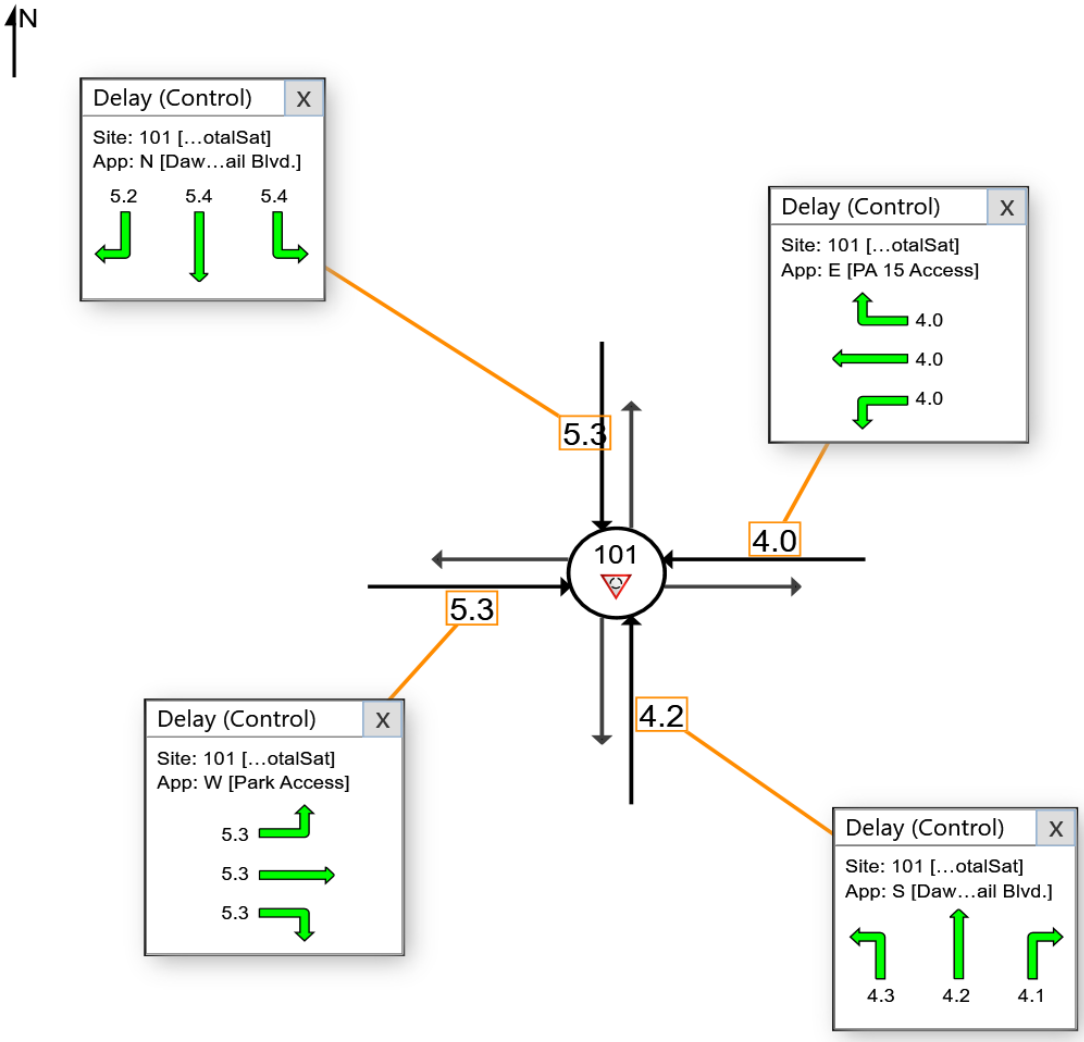
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 101 [Int#108_2040 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

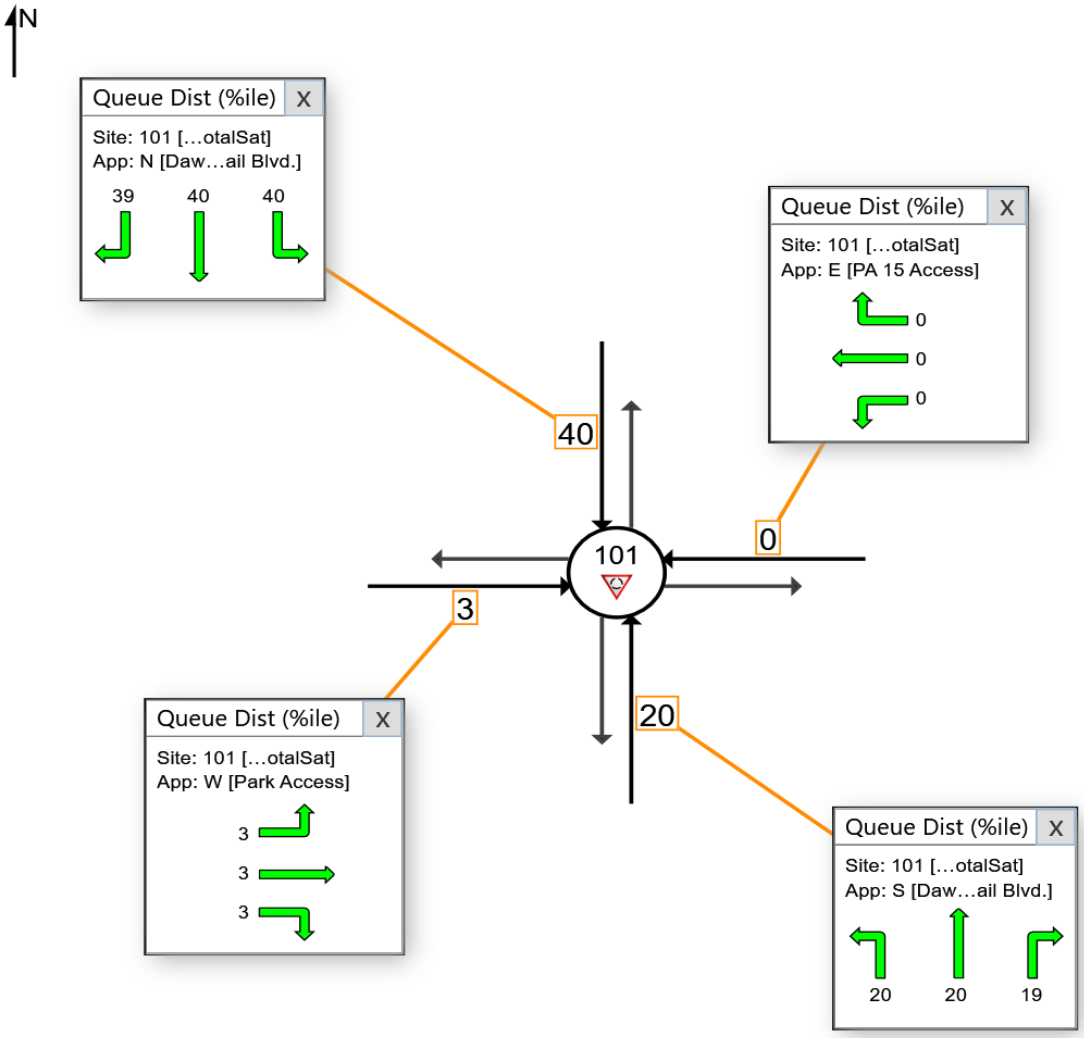
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 101 [Int#108_2040 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

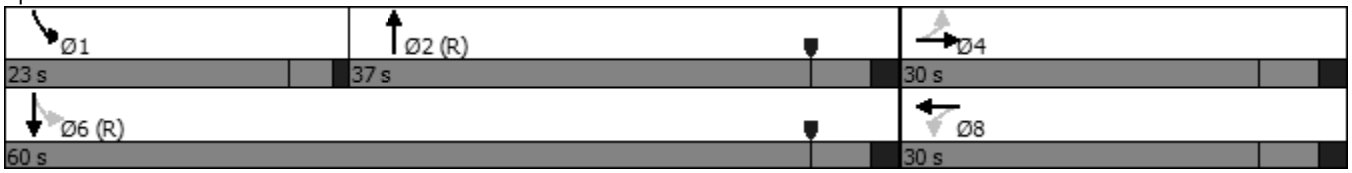
Close All Popups

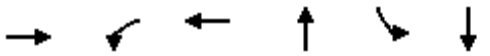


Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	12	5	229	5	804	329	1127
Future Volume (vph)	12	5	229	5	804	329	1127
Turn Type	Perm	NA	Perm	NA	NA	pm+pt	NA
Protected Phases		4		8	2	1	6
Permitted Phases	4		8			6	
Detector Phase	4	4	8	8	2	1	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	10.0	5.0	10.0
Minimum Split (s)	28.0	28.0	28.0	28.0	28.0	9.5	28.0
Total Split (s)	30.0	30.0	30.0	30.0	37.0	23.0	60.0
Total Split (%)	33.3%	33.3%	33.3%	33.3%	41.1%	25.6%	66.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	1.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.0	6.0	6.0	6.0	4.0	6.0
Lead/Lag					Lag	Lead	
Lead-Lag Optimize?					Yes	Yes	
Recall Mode	None	None	None	None	C-Max	None	C-Max
Act Effct Green (s)		20.3	20.3	20.3	38.0	59.7	57.7
Actuated g/C Ratio		0.23	0.23	0.23	0.42	0.66	0.64
v/c Ratio		0.06	0.80	0.44	0.63	0.76	0.55

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 19.5
Intersection Capacity Utilization 72.9%
Analysis Period (min) 15

Splits and Phases: 109: Collector Road A & Twin Oaks Road/Collector





Lane Group	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	19	249	237	937	358	1253
v/c Ratio	0.06	0.80	0.44	0.63	0.76	0.55
Control Delay	24.7	51.3	6.8	24.5	22.9	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.7	51.3	6.8	24.5	22.9	10.8
Queue Length 50th (ft)	8	130	2	231	91	198
Queue Length 95th (ft)	25	#214	57	320	197	272
Internal Link Dist (ft)	316		159	1511		693
Turn Bay Length (ft)		150			250	
Base Capacity (vph)	385	370	593	1482	522	2264
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.67	0.40	0.63	0.69	0.55

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	5	1	229	5	213	0	804	58	329	1127	26
Future Volume (veh/h)	12	5	1	229	5	213	0	804	58	329	1127	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	0	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	13	5	1	249	5	232	0	874	63	358	1225	28
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	0	2	2	2	2	2
Cap, veh/h	137	45	6	370	7	336	0	1620	117	480	2311	53
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.00	0.48	0.48	0.12	0.65	0.65
Sat Flow, veh/h	323	208	29	1410	34	1557	0	3455	242	1781	3551	81
Grp Volume(v), veh/h	19	0	0	249	0	237	0	462	475	358	613	640
Grp Sat Flow(s),veh/h/ln	560	0	0	1410	0	1590	0	1777	1827	1781	1777	1856
Q Serve(g_s), s	0.2	0.0	0.0	3.8	0.0	12.4	0.0	16.4	16.4	8.4	16.5	16.6
Cycle Q Clear(g_c), s	12.5	0.0	0.0	16.3	0.0	12.4	0.0	16.4	16.4	8.4	16.5	16.6
Prop In Lane	0.68		0.05	1.00		0.98	0.00		0.13	1.00		0.04
Lane Grp Cap(c), veh/h	188	0	0	370	0	344	0	857	881	480	1156	1207
V/C Ratio(X)	0.10	0.00	0.00	0.67	0.00	0.69	0.00	0.54	0.54	0.75	0.53	0.53
Avail Cap(c_a), veh/h	254	0	0	441	0	424	0	857	881	635	1156	1207
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.7	0.0	0.0	34.1	0.0	32.5	0.0	16.3	16.3	12.5	8.4	8.4
Incr Delay (d2), s/veh	0.2	0.0	0.0	3.1	0.0	3.5	0.0	2.4	2.4	3.4	1.7	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	5.5	0.0	5.0	0.0	6.9	7.0	3.3	6.0	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.9	0.0	0.0	37.3	0.0	36.0	0.0	18.7	18.7	15.8	10.1	10.1
LnGrp LOS	C	A	A	D	A	D	A	B	B	B	B	B
Approach Vol, veh/h		19			486			937			1611	
Approach Delay, s/veh		28.9			36.7			18.7			11.4	
Approach LOS		C			D			B			B	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	15.2	49.4		25.4		64.6		25.4				
Change Period (Y+Rc), s	4.0	6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s	19.0	31.0		24.0		54.0		24.0				
Max Q Clear Time (g_c+I1), s	10.4	18.4		14.5		18.6		18.3				
Green Ext Time (p_c), s	0.8	4.9		0.0		11.1		1.2				

Intersection Summary			
HCM 6th Ctrl Delay		17.8	
HCM 6th LOS		B	

Collector A at Twin Oaks Road Roundabout Worksheets

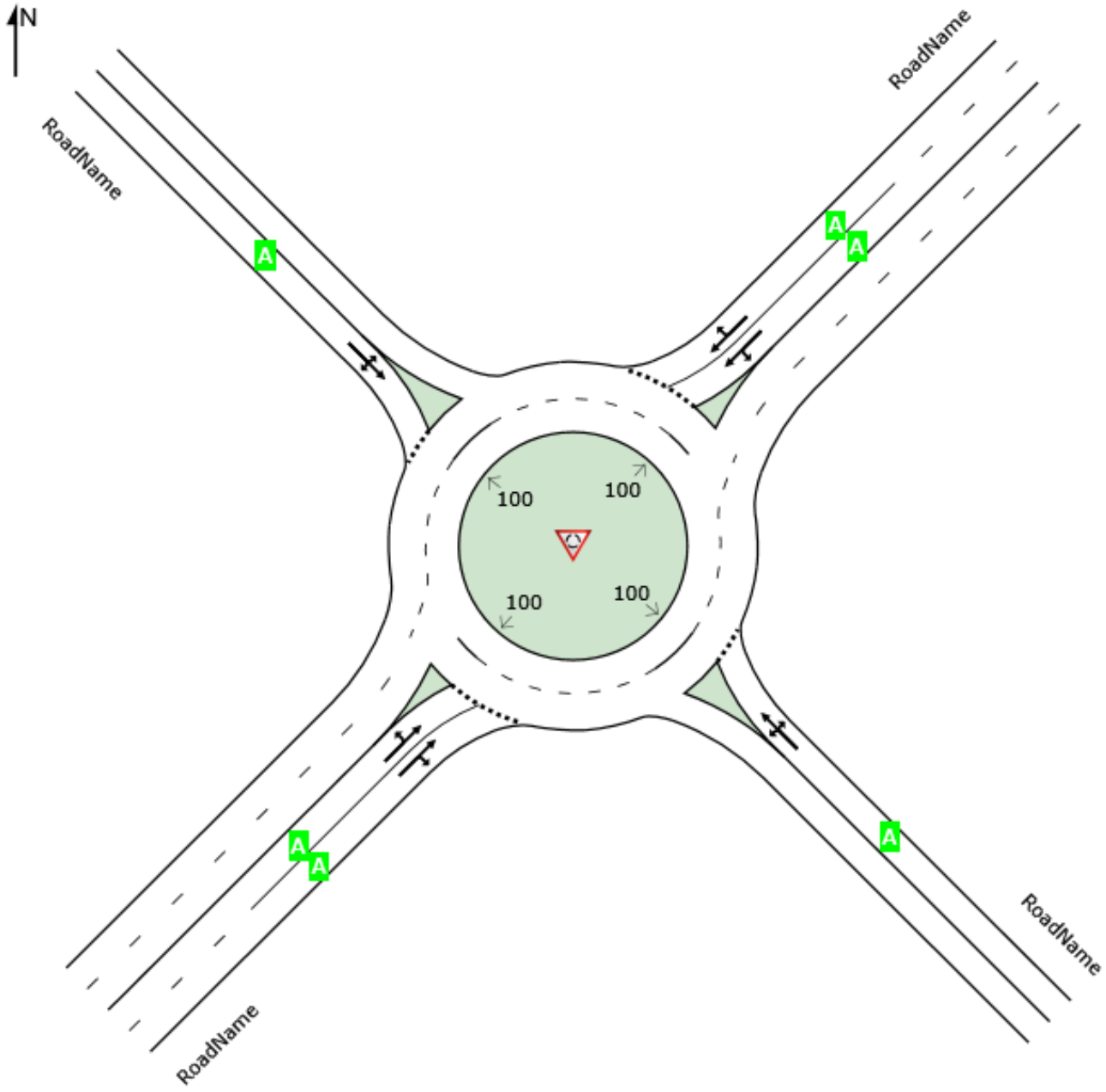
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 109 [#109_2030 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
LOS	A	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 1:00:14 PM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #109.sip9

DELAY (CONTROL)

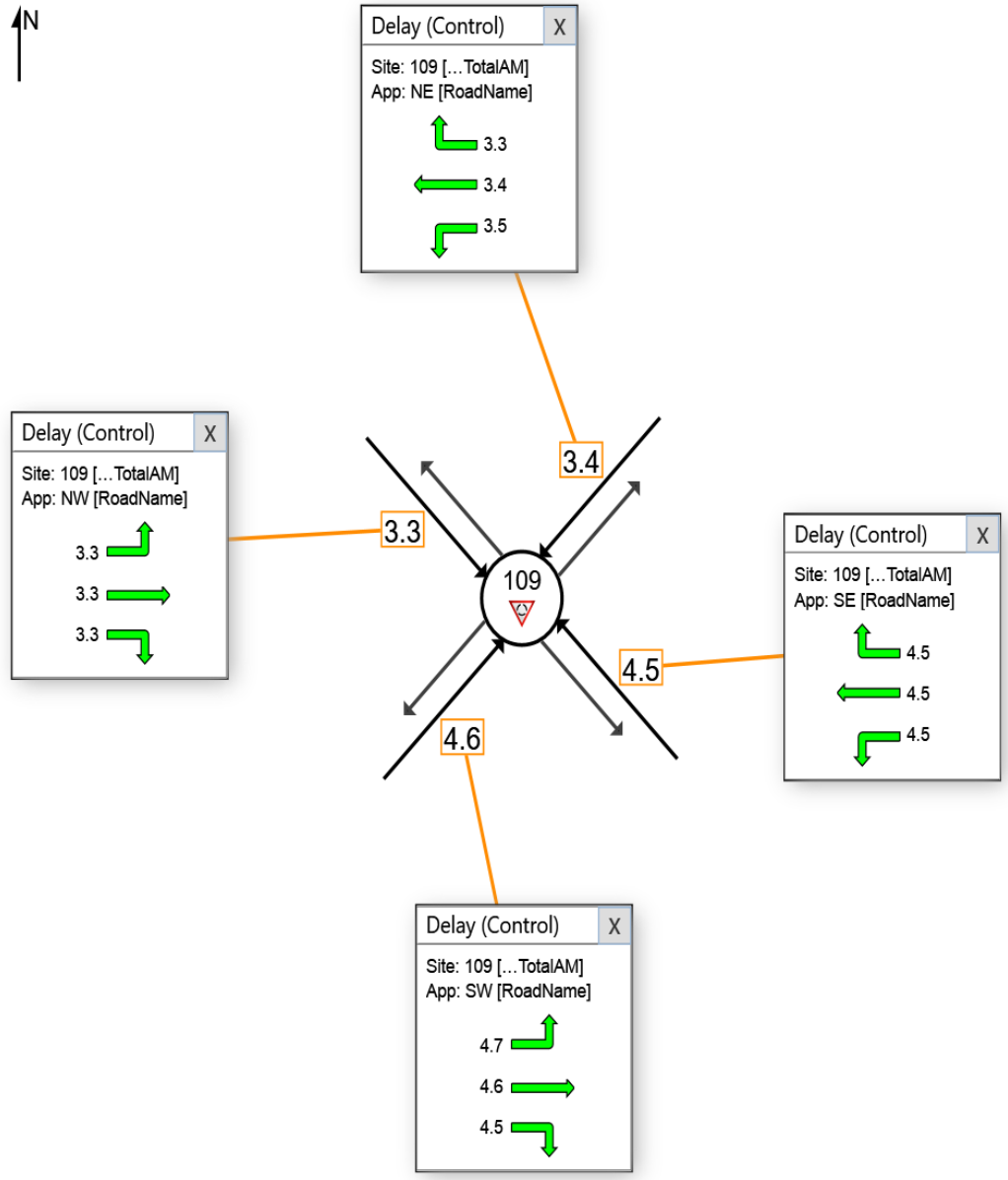
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 109 [#109_2030 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

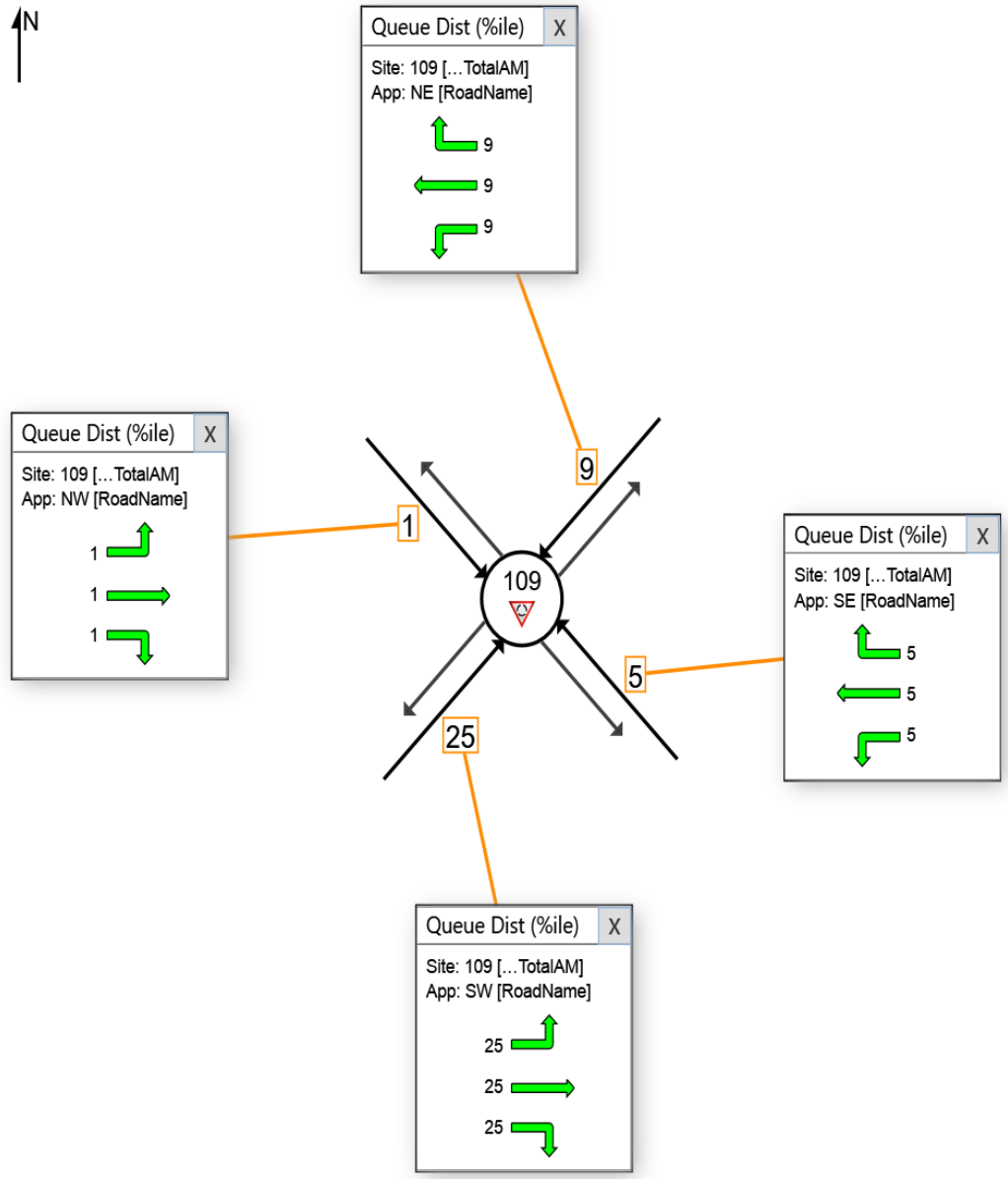
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 109 [#109_2030 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



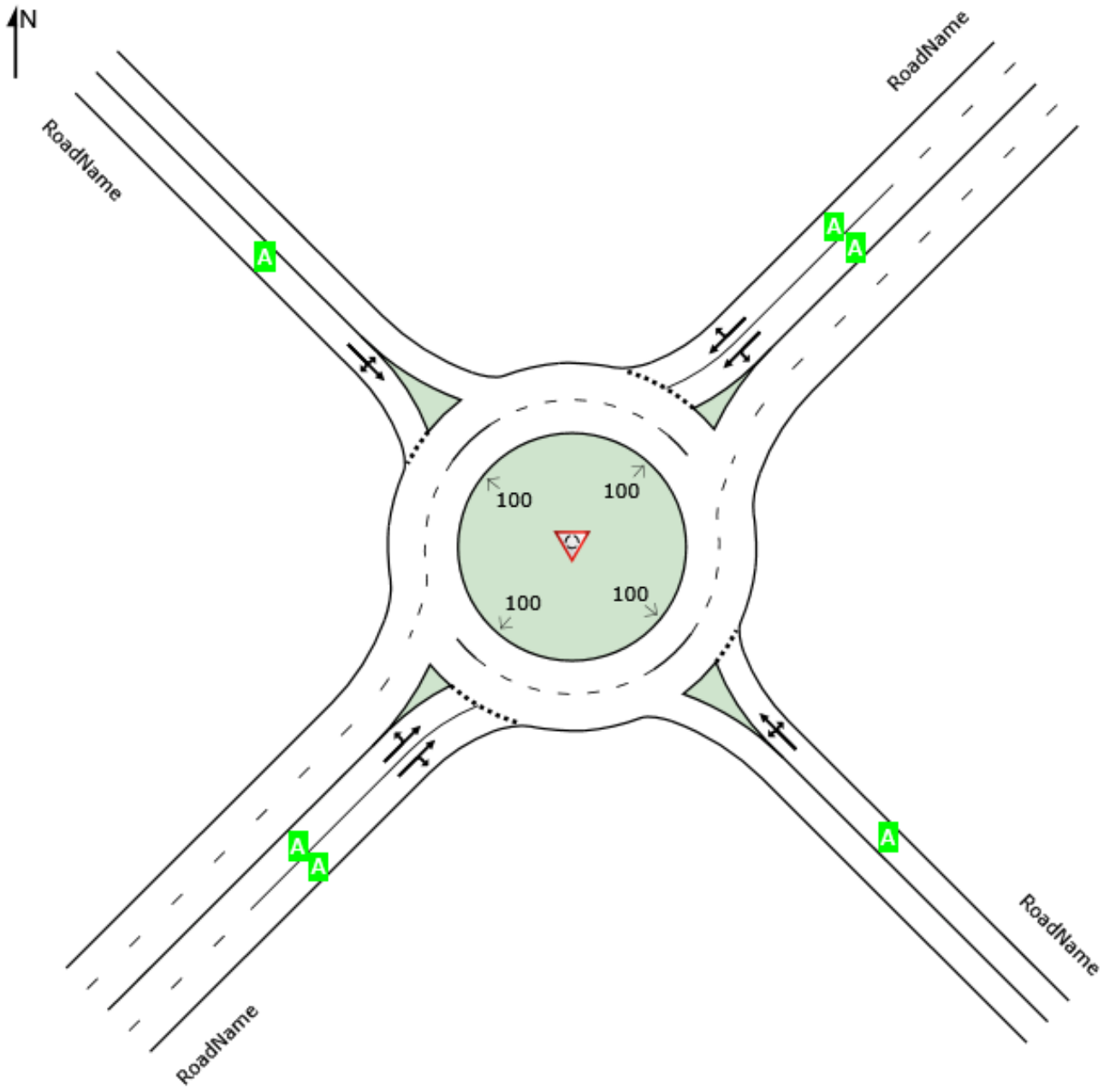
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 109 [#109_2030 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
LOS	A	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 1:00:15 PM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #109.sip9

DELAY (CONTROL)

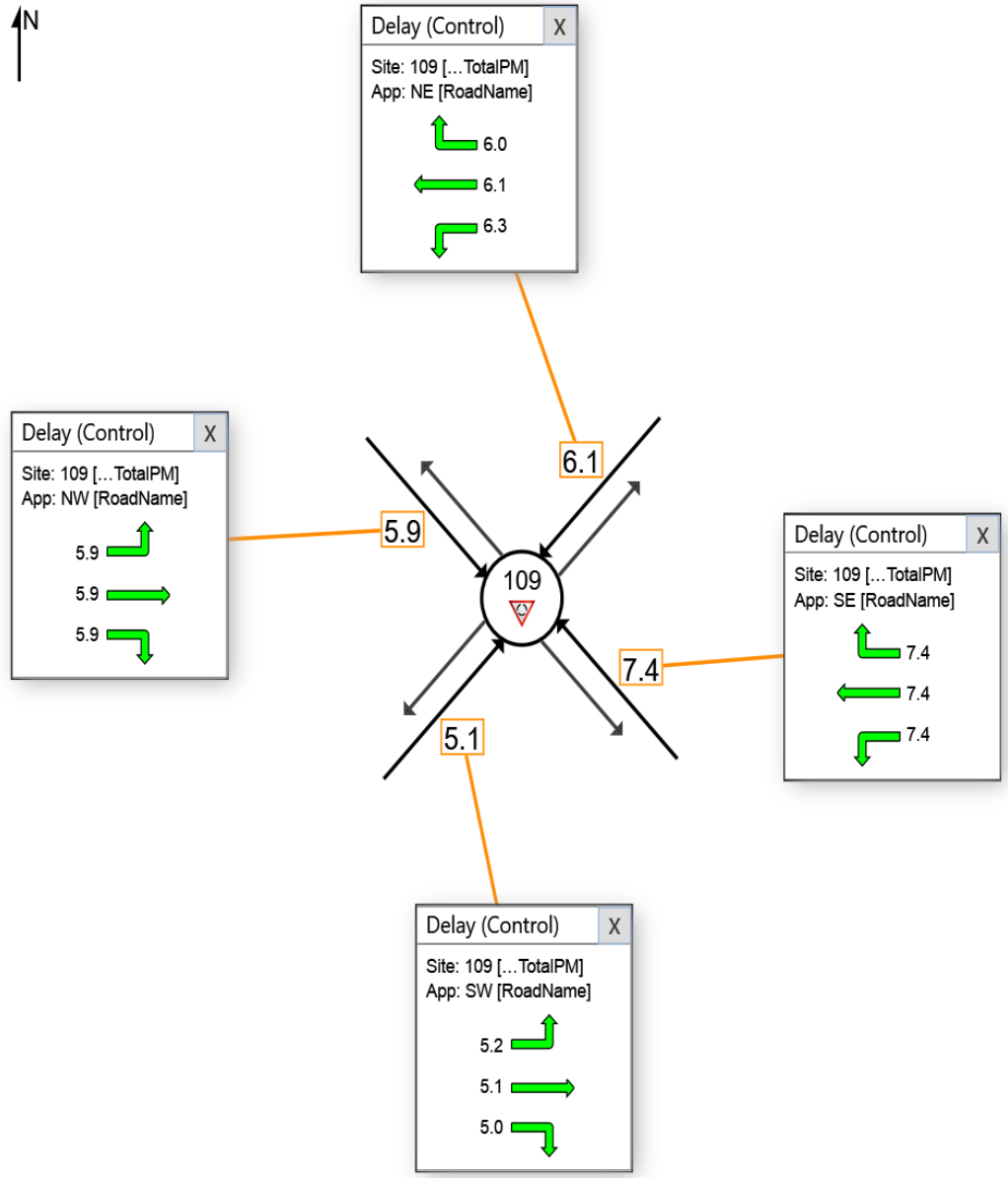
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 109 [#109_2030 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

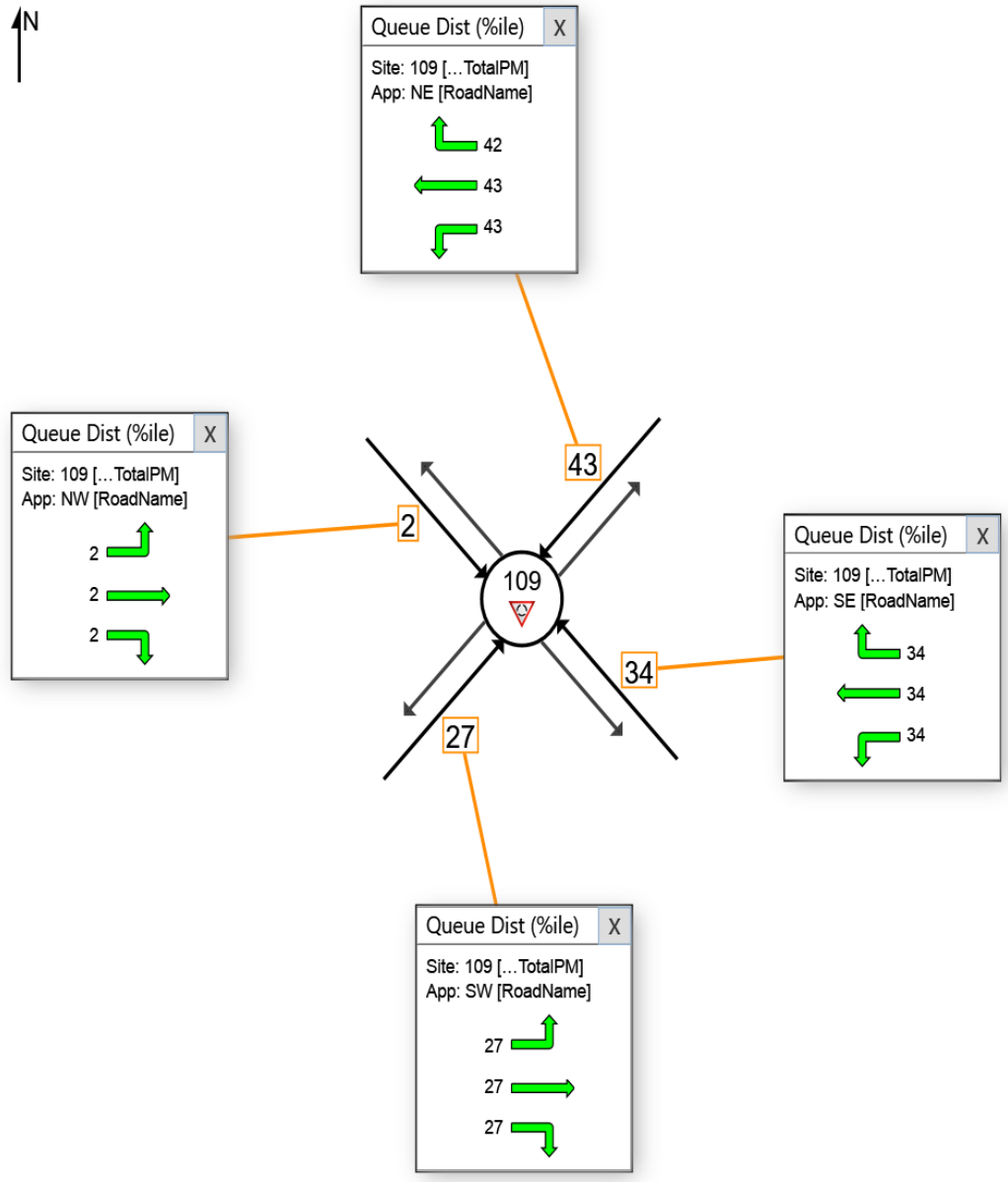
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 109 [#109_2030 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



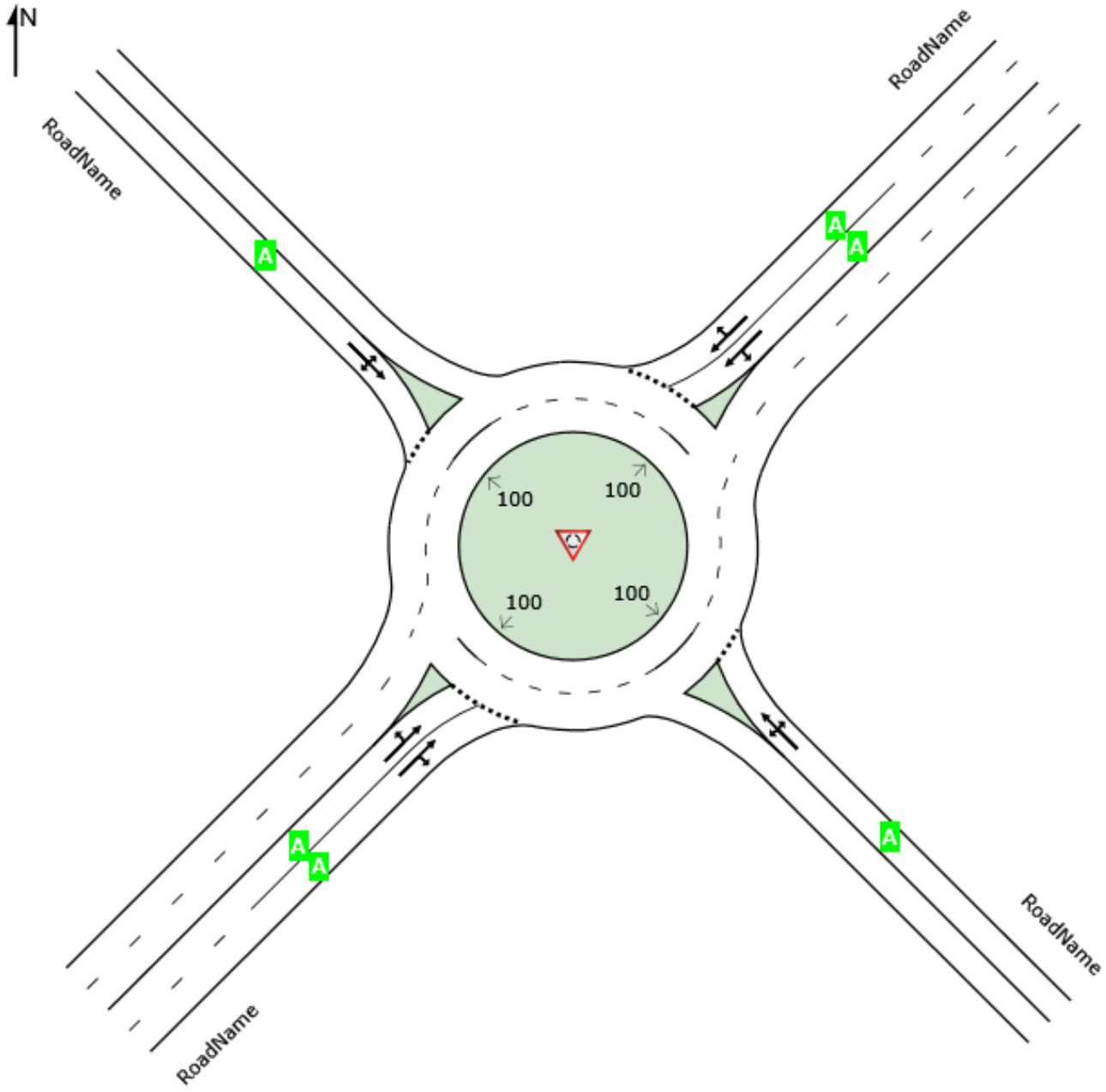
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 109 [#109_2030 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
LOS	A	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 1:00:15 PM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #109.sip9

DELAY (CONTROL)

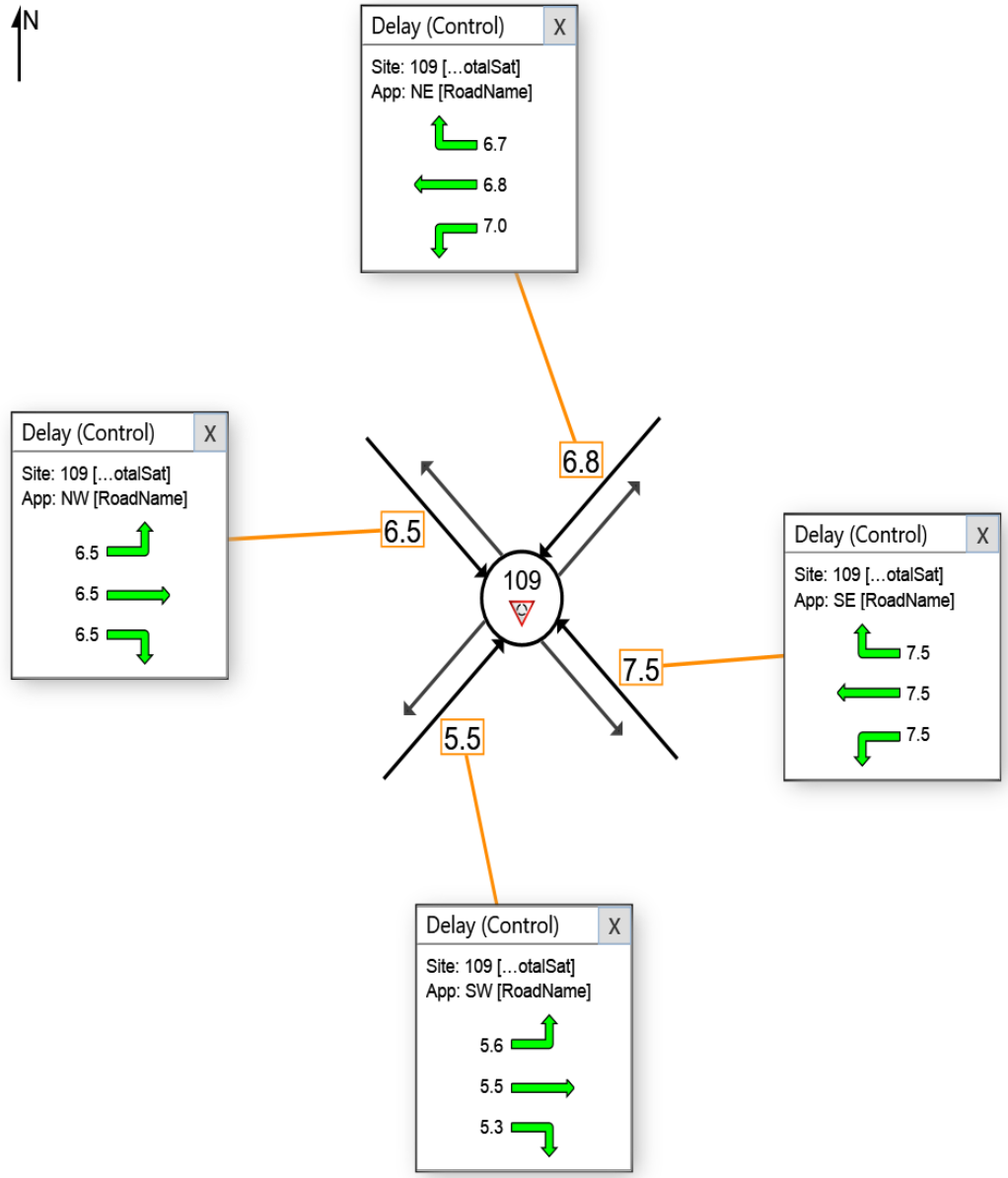
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 109 [#109_2030 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

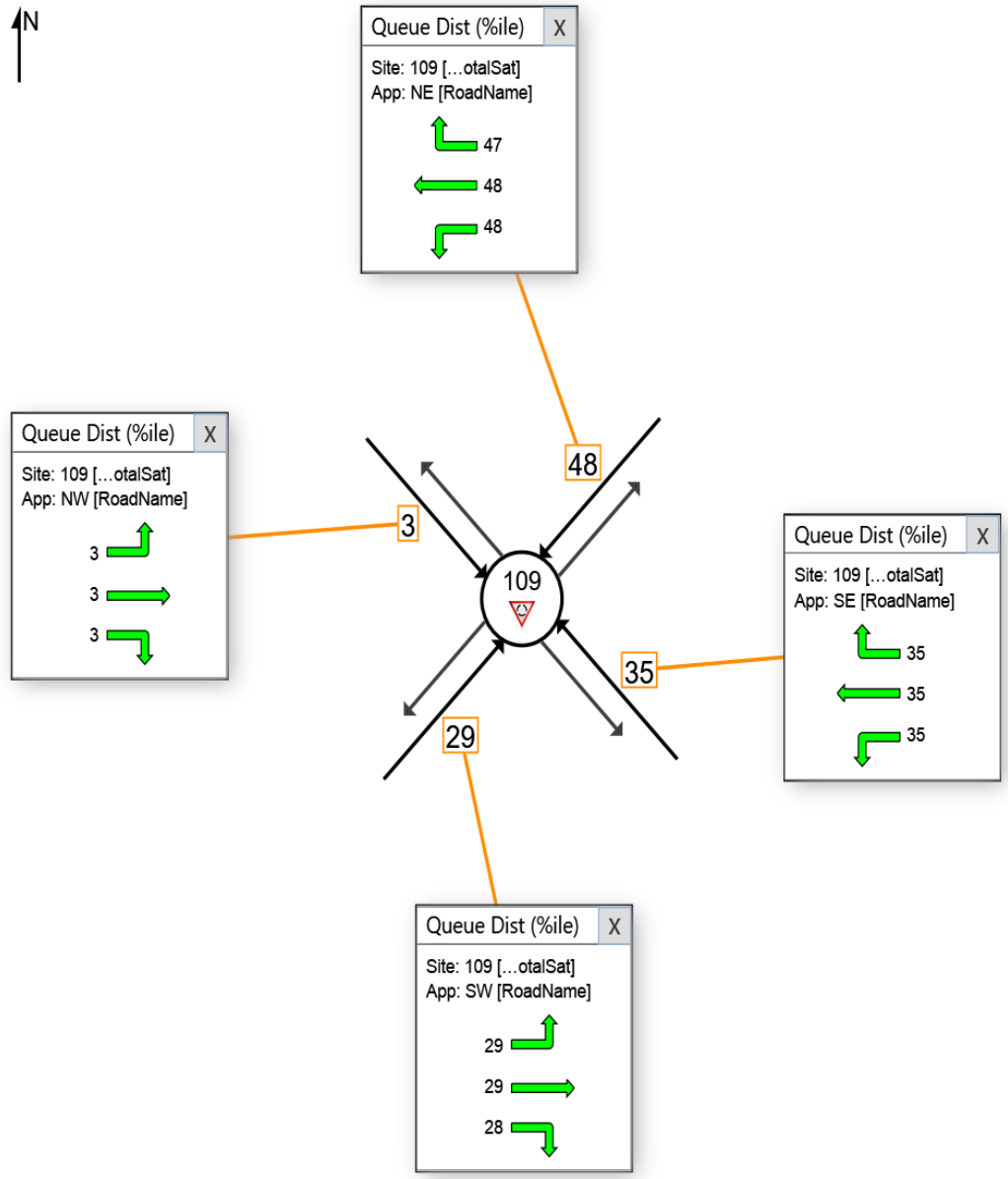
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 109 [#109_2030 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



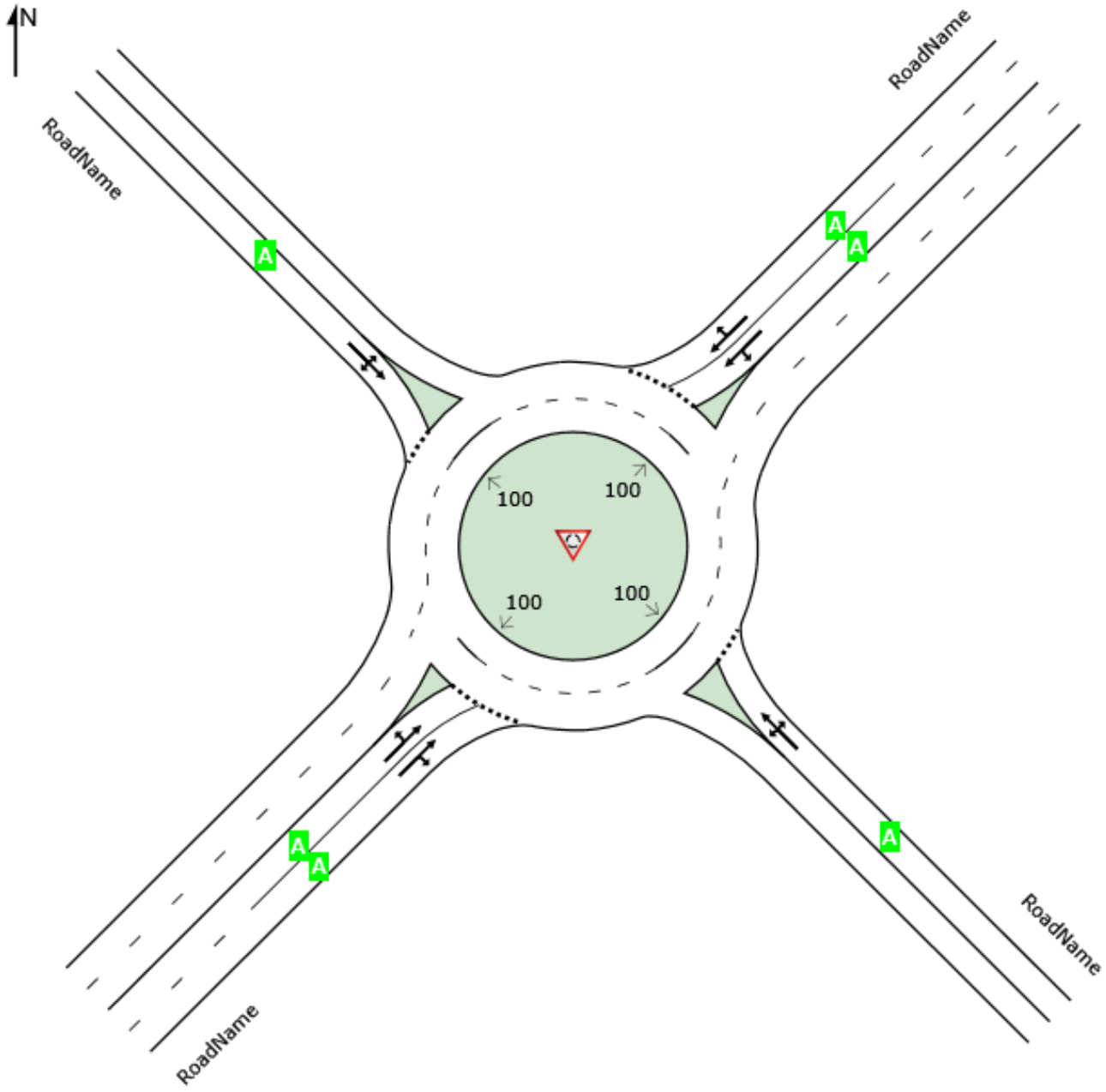
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 109 [#109_2040 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
LOS	A	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 1:00:15 PM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #109.sip9

DELAY (CONTROL)

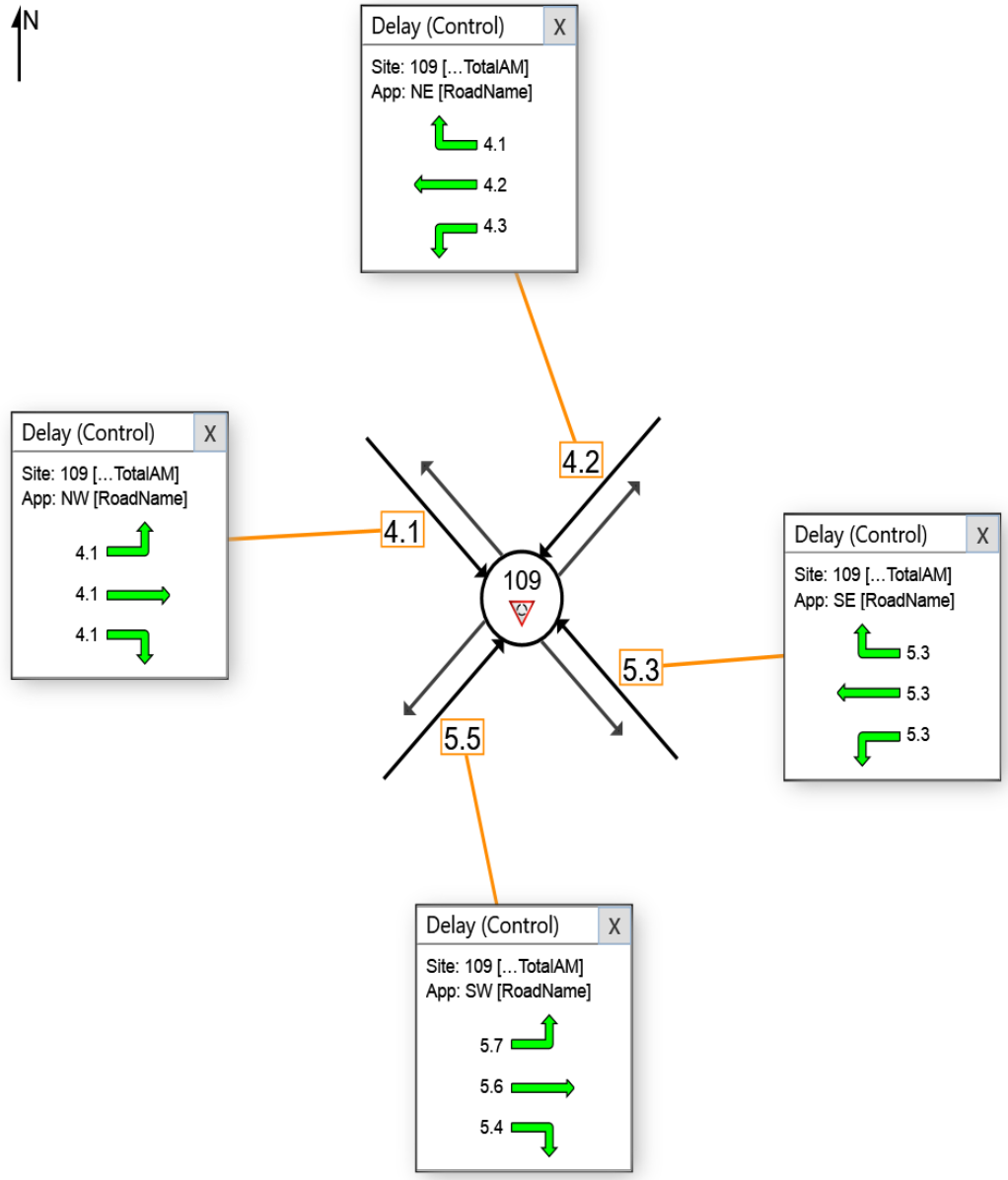
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 109 [#109_2040 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

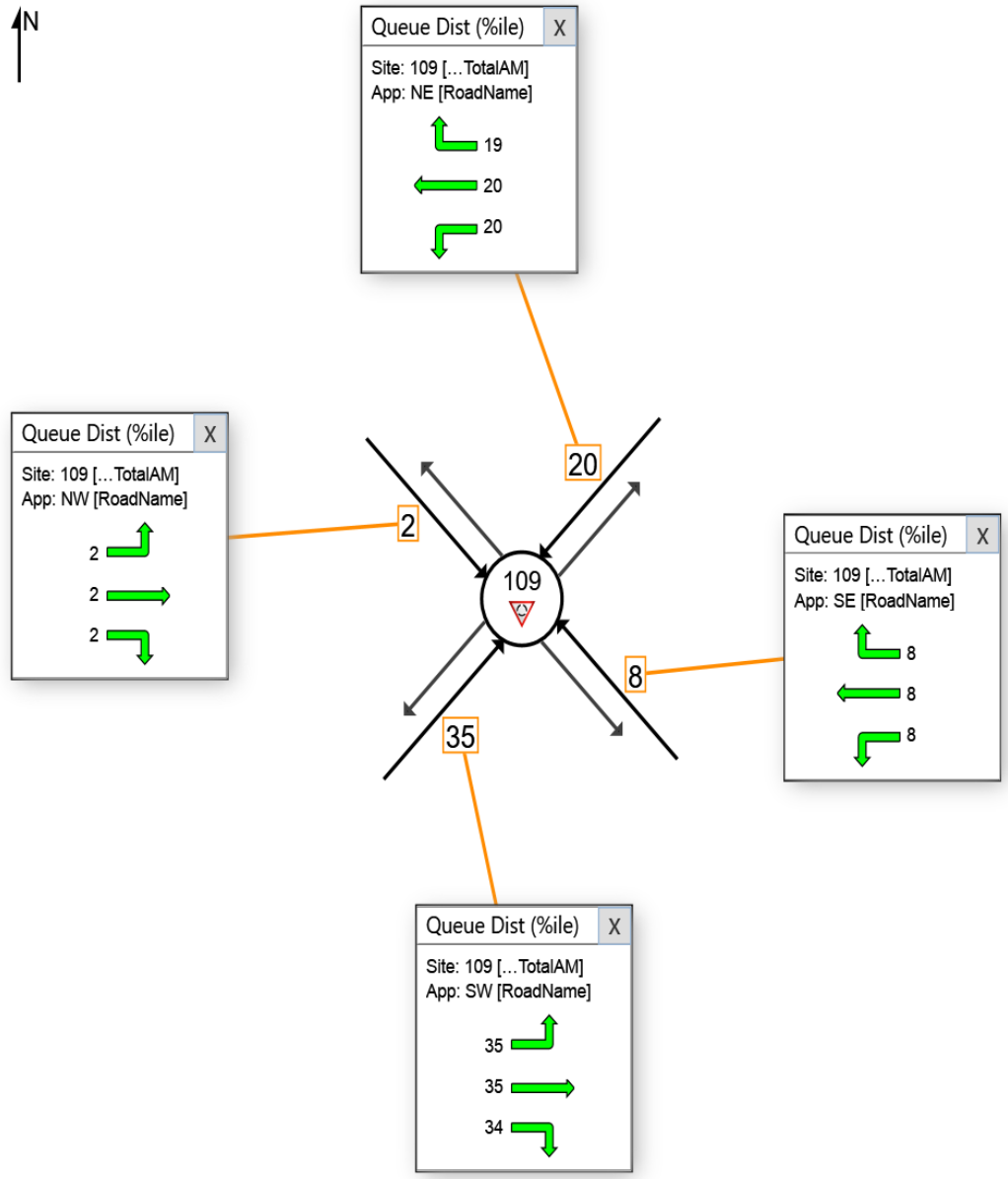
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 109 [#109_2040 Total_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



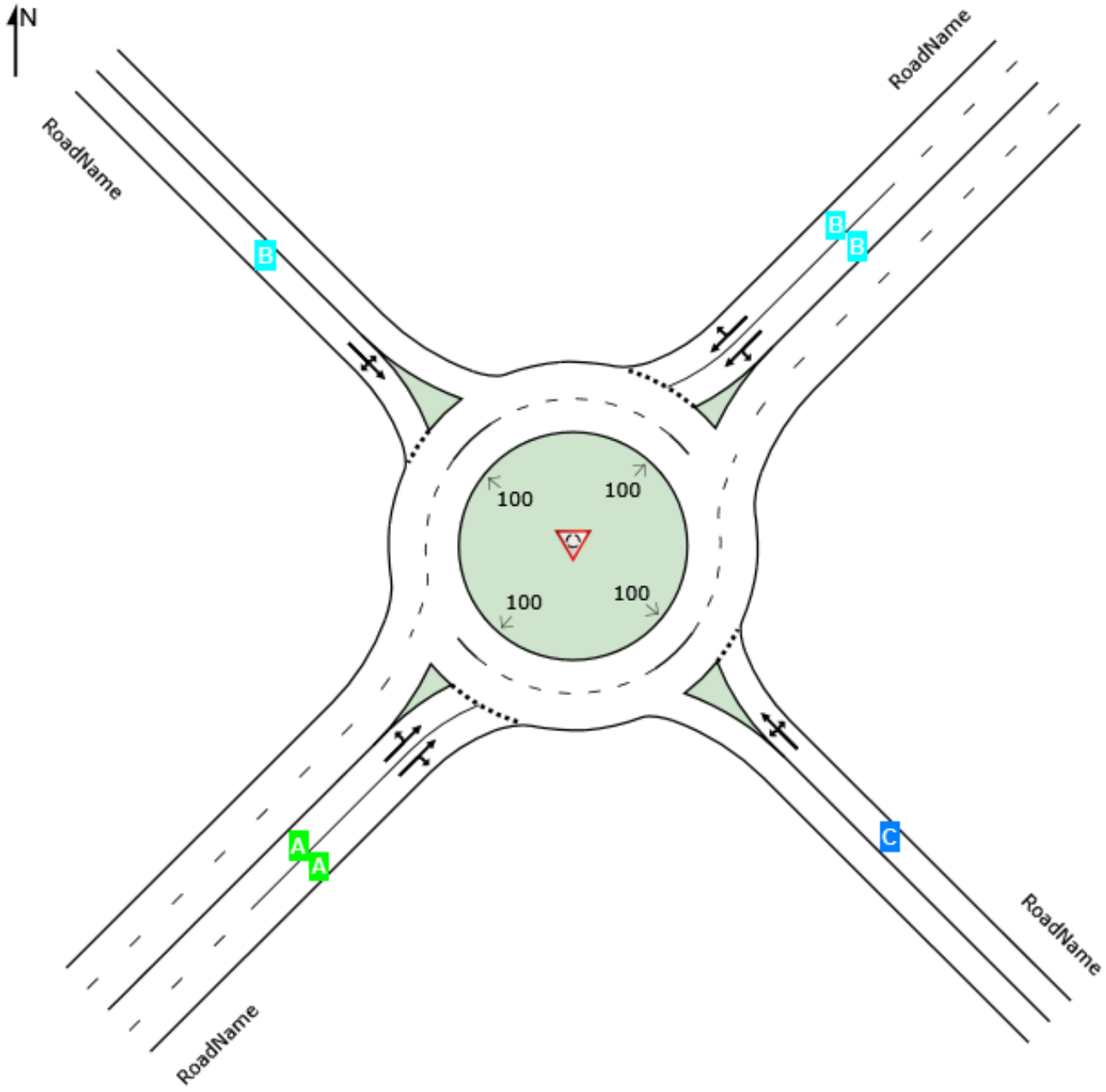
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 109 [#109_2040 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
LOS	C	B	B	A	B



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 1:00:16 PM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #109.sip9

DELAY (CONTROL)

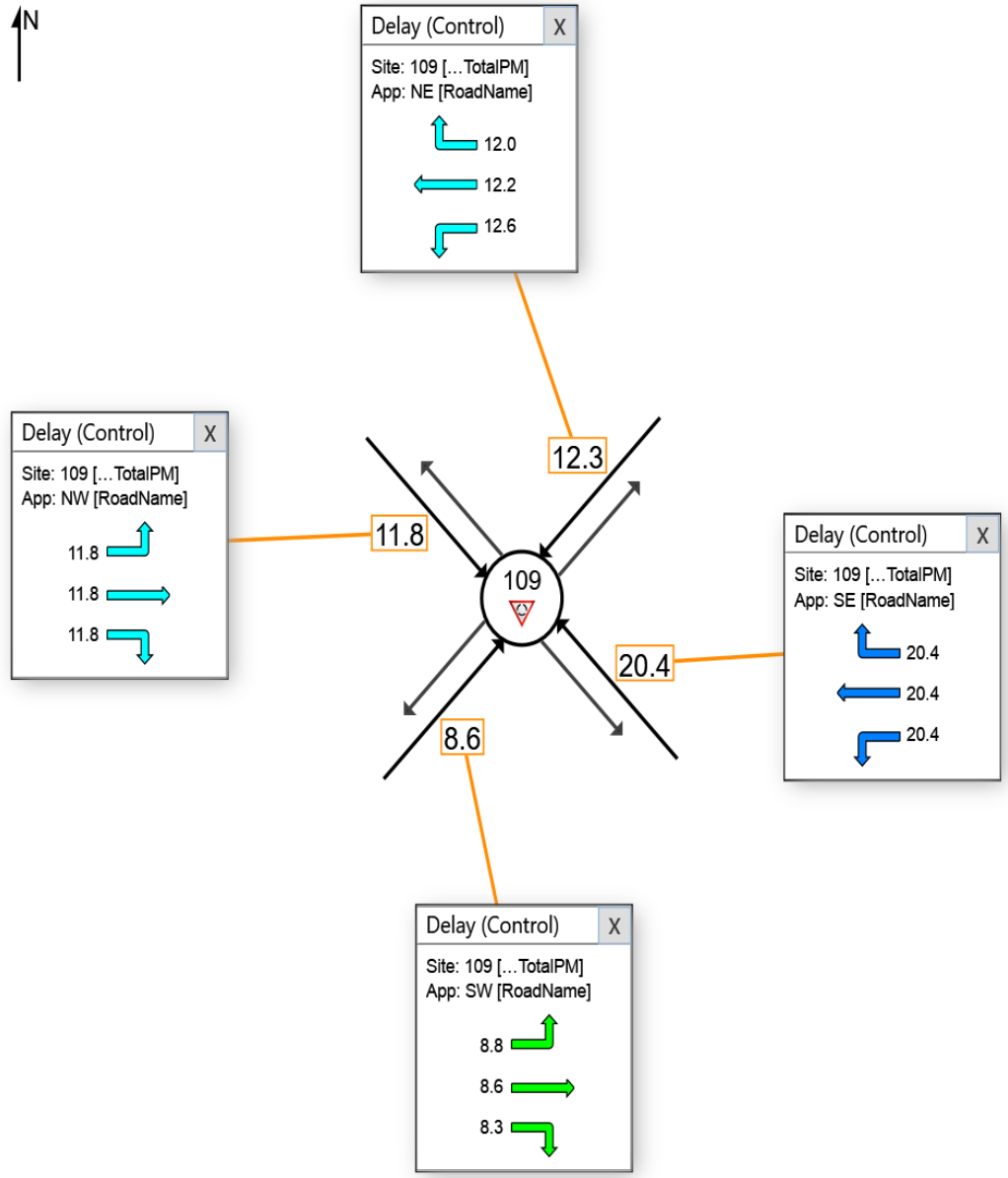
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 109 [#109_2040 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

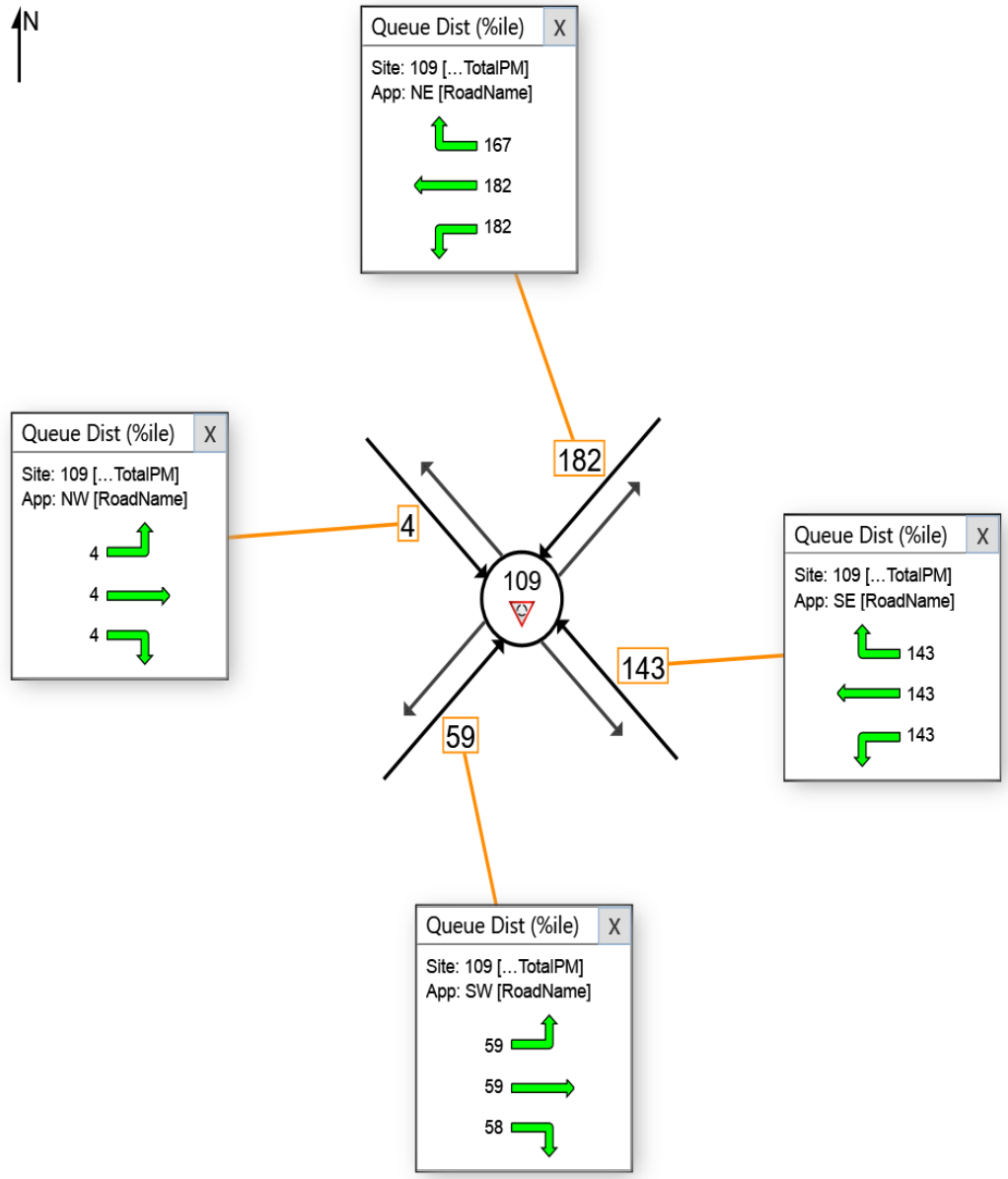
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 109 [#109_2040 Total_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popups boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



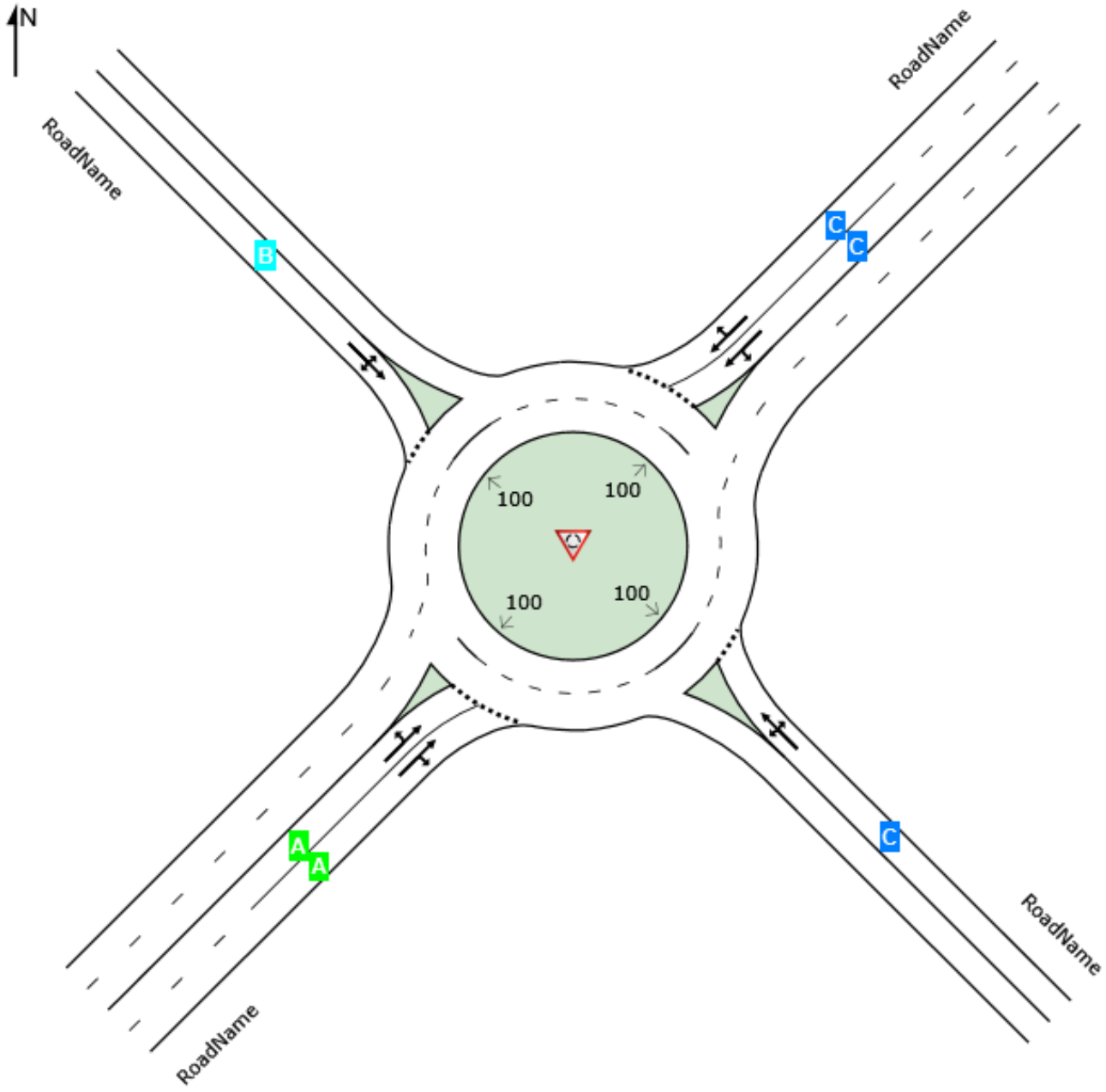
LANE LEVEL OF SERVICE

Lane Level of Service

Site: 109 [#109_2040 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
LOS	C	C	B	A	C



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Geometric Delay is not included).

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Licence: PLUS / 1PC | Processed: Tuesday, April 12, 2022 1:00:11 PM
Project: C:\Users\Steve\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20092 Dawson Trail - Castle Rock\analysis\sidra\Int #109.sip9

DELAY (CONTROL)

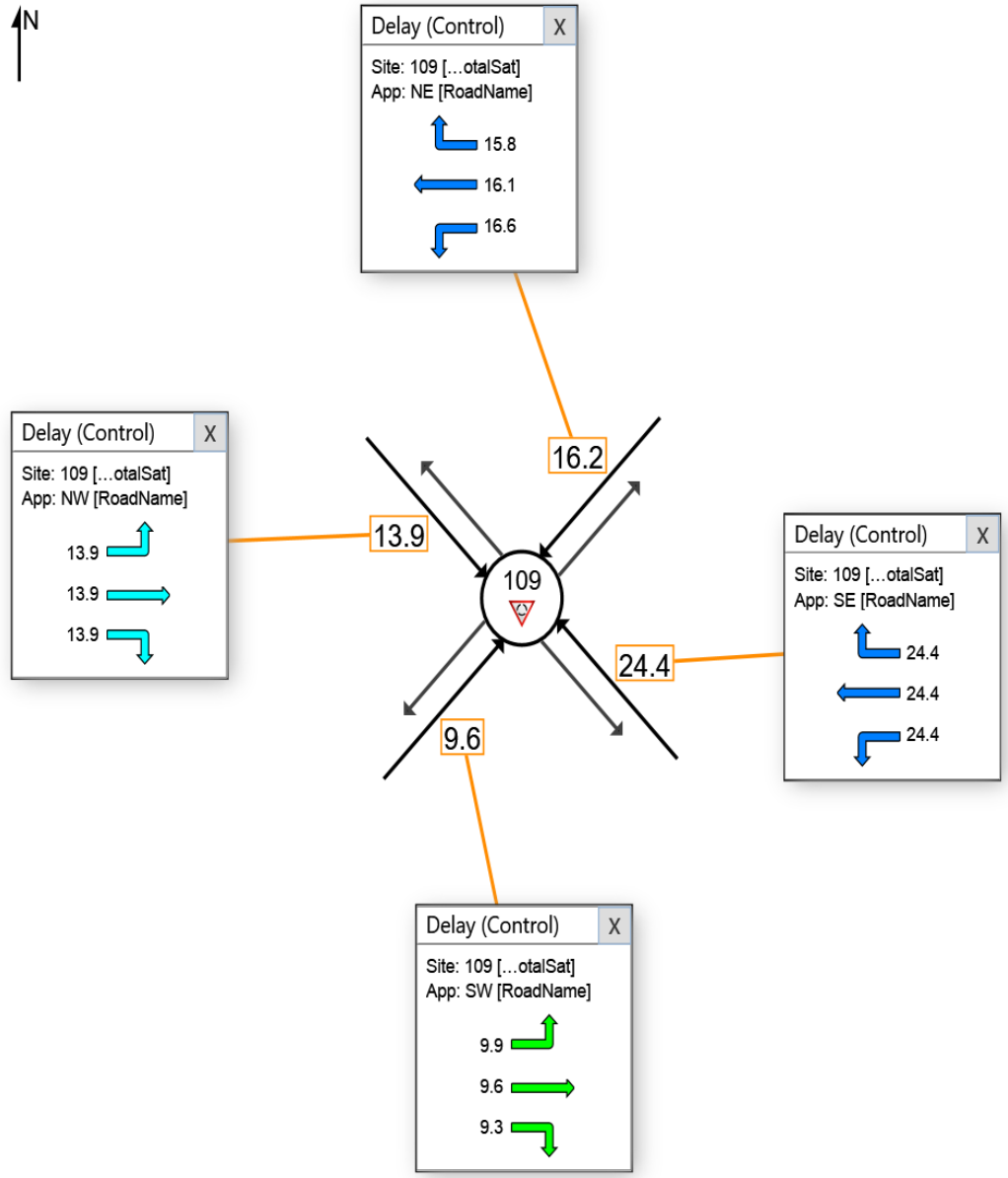
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 109 [#109_2040 Total_Sat (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popup boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



QUEUE DISTANCE (PERCENTILE)

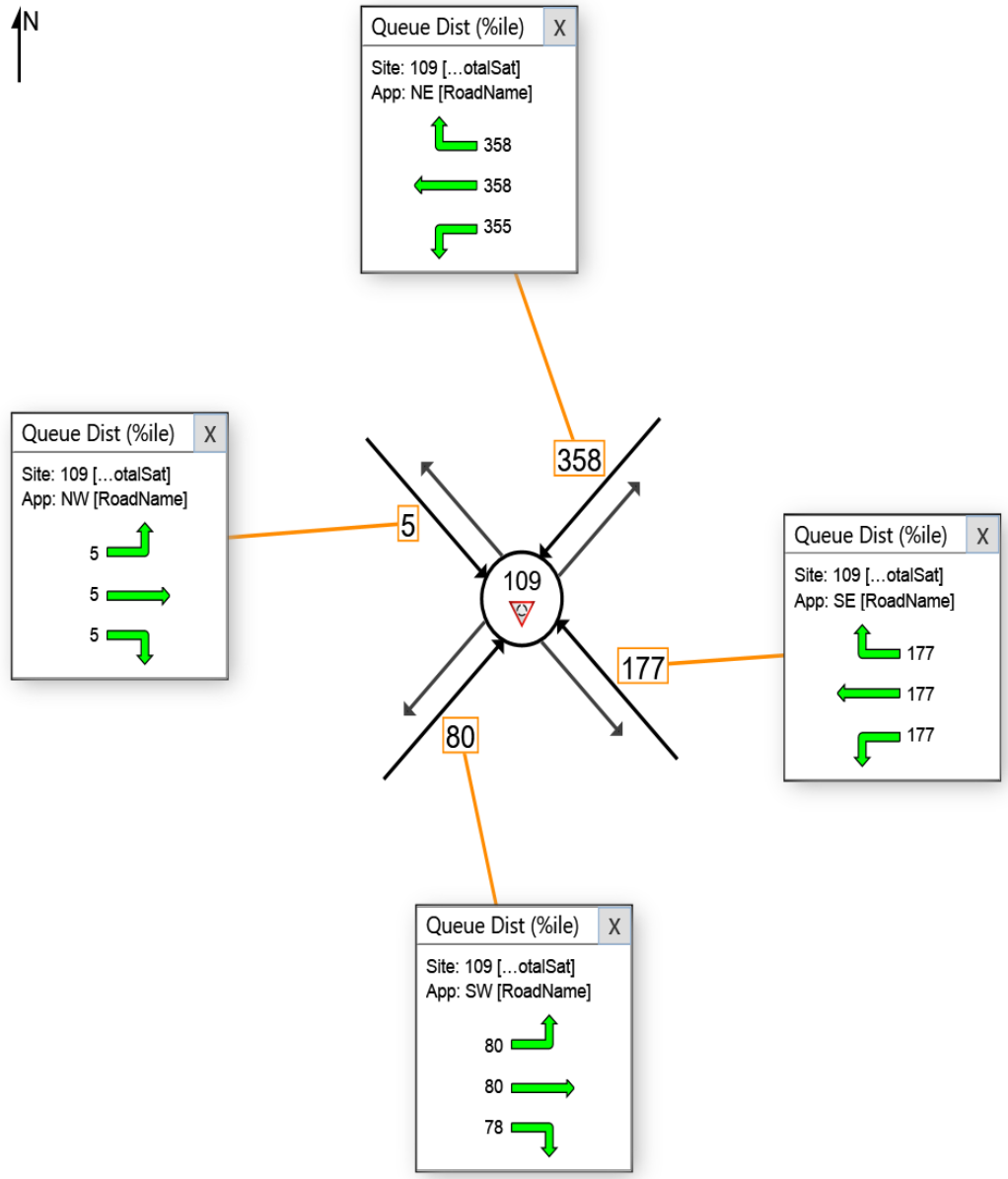
Largest 95% Back of Queue Distance for any lane used by the vehicle movement (feet)

Site: 109 [#109_2040 Total_Sat (Site Folder: General)]

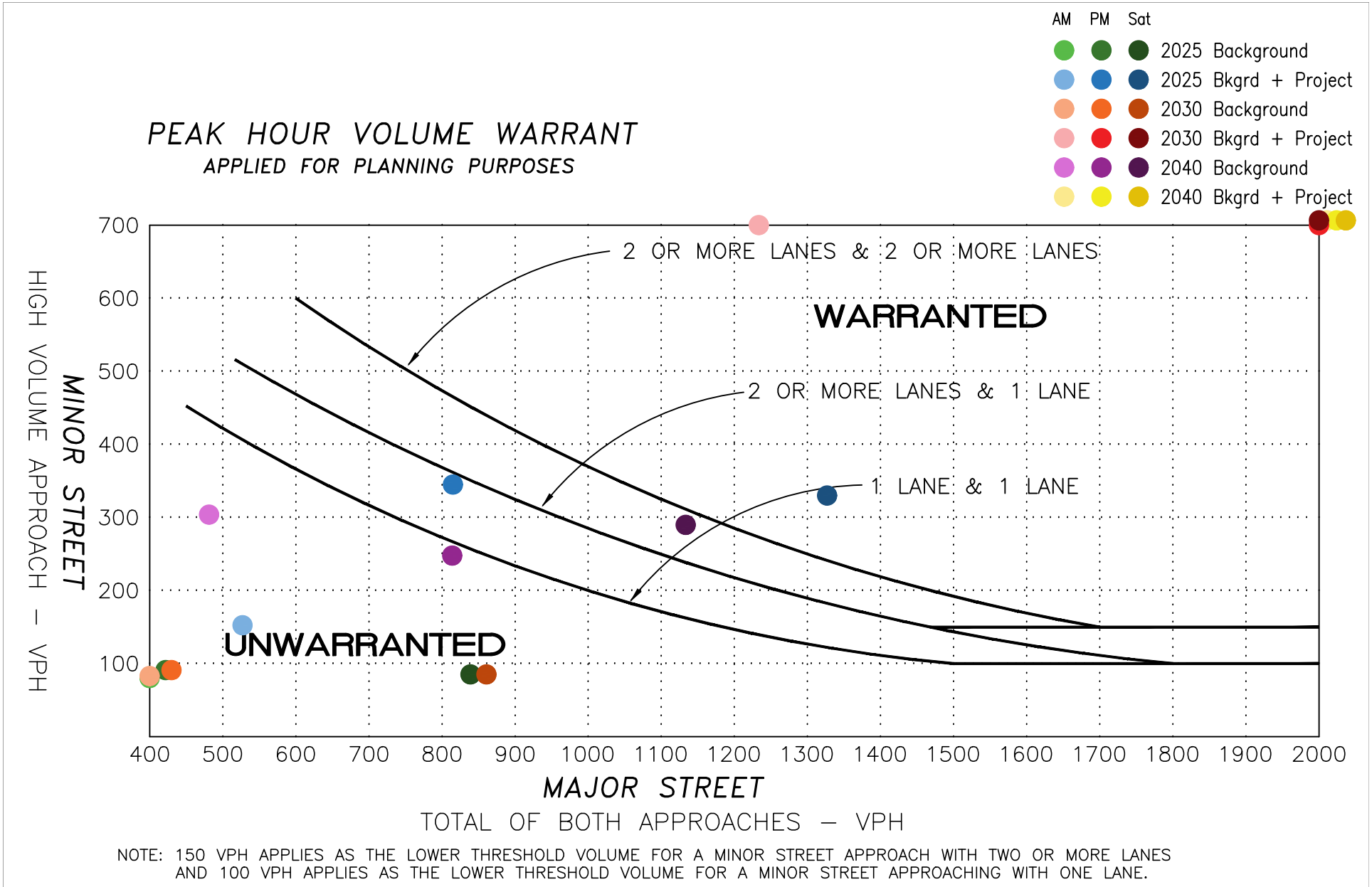
New Site
Site Category: (None)
Roundabout

Use the button below to open or close all popups boxes. Click value labels to open selected ones.
Click and drag popup boxes to move to preferred positions.

Close All Popups



Signal Warrant Analysis



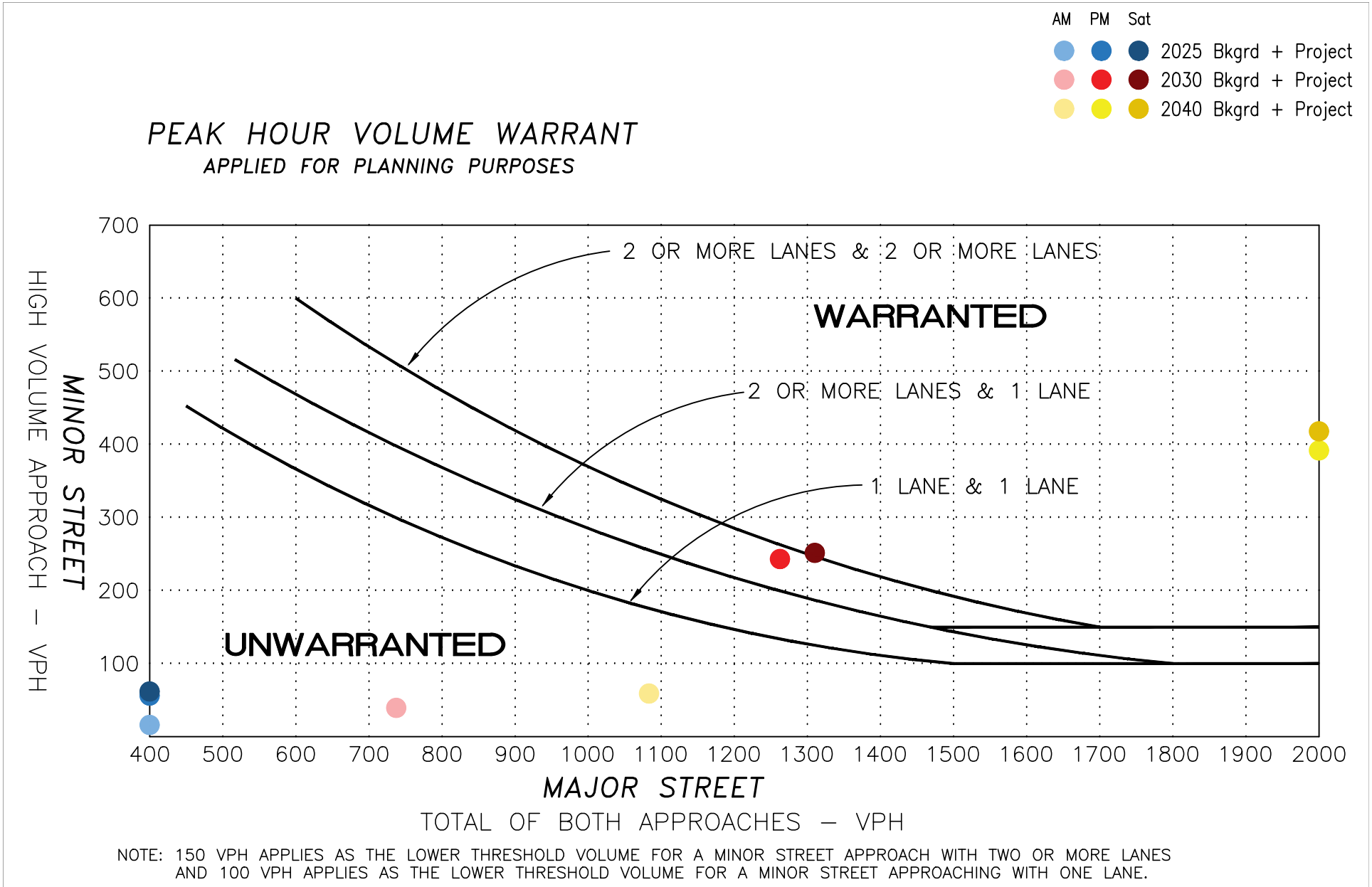
NOTE: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

FOX TUTTLE
TRANSPORTATION GROUP

DAWSON TRAILS MASTER TRANSPORTATION STUDY

PEAK HOUR SIGNAL WARRANT - TERRITORIAL RD. AT WEST FRONTAGE RD, (FUTURE CRYSTAL VALLEY PKWY. AT DAWSON TRAILS BLVD.)

FT Project #	20092	Original Scale	NTS	Date	4/11/2021	Drawn by	CRS	Figure #	APPENDIX 1



NOTE: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

FOX TUTTLE
TRANSPORTATION GROUP

DAWSON TRAILS MASTER TRANSPORTATION STUDY

PEAK HOUR SIGNAL WARRANT - COLLECTOR A WITH TWIN OAKS ROAD

FT Project #	20092	Original Scale	NTS	Date	4/11/2021	Drawn by	CRS	Figure #	APPENDIX 2

Internal Trips Calculations

Appendix - Internal trips between Home Planning Areas and Commerical Planning Areas for Daily

blue text is internal to itself

	F-1.1		F-1.1		G-1		E-1		F-1.2		F-1.2		E-2		E-2		F-1.3		D-1		G-2		Total	
PA	Comm		Comm		Comm		Comm		Comm		Comm		Comm		Comm		Comm		Comm		Comm			
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
PL-1.07	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F-1.1	8	8	20	20	16	16	14	14	81	81	12	12	110	110	61	61	230	230	21	21	1	1	574	574
F-1.3	9	9	23	22	18	18	16	16	93	93	14	14	125	125	69	69	263	263	24	24	1	1	655	654
E-2	7	7	18	18	14	15	13	12	74	74	11	11	100	100	55	55	209	209	19	19	1	1	521	521
D-1	6	6	15	15	12	12	10	10	61	61	9	9	83	83	46	46	173	173	15	15	0	0	430	430
D-1	6	6	14	14	11	11	9	9	56	56	9	9	76	76	42	42	159	159	14	14	0	0	396	396
B-1	12	12	28	28	23	23	20	20	116	116	18	18	157	157	86	86	328	328	29	29	1	1	818	818
C-2	1	1	3	3	3	3	2	2	14	14	2	2	19	19	10	10	40	40	4	4	0	0	98	98
D-1	7	7	16	16	13	12	11	11	63	65	10	9	88	88	48	48	184	183	16	16	1	1	457	456
D-1	7	8	18	17	14	14	12	12	72	72	11	11	98	98	54	54	205	205	18	18	1	1	510	510
D-1	9	9	20	20	16	16	15	14	84	84	13	14	114	114	63	63	237	237	21	21	1	1	593	593
C-2	2	2	4	4	4	4	3	3	18	18	3	3	24	24	13	13	50	50	5	5	0	0	126	126
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C-2	2	2	6	6	5	5	4	4	22	23	4	3	31	31	17	17	64	64	6	6	0	0	161	161
C-2	1	1	3	3	3	3	2	2	13	13	2	2	17	17	9	9	36	36	3	3	0	0	89	89
C-2	1	1	3	3	3	3	2	2	13	13	2	2	17	17	9	9	36	36	3	3	0	0	89	89
C-1	2	2	5	5	4	4	4	4	22	21	3	4	29	29	16	16	61	61	5	5	0	0	151	151
C-1	5	5	11	11	9	9	8	8	47	46	7	7	64	64	35	35	133	133	12	12	0	0	331	330
C-2	6	6	14	14	11	11	9	9	56	55	9	9	76	76	42	42	159	159	14	14	0	0	396	395
C-2	9	8	20	20	16	16	14	14	81	81	12	12	110	110	61	61	230	231	21	21	1	1	575	575
D-1	7	7	17	17	14	14	12	12	71	71	11	11	96	96	53	53	202	201	18	18	0	1	501	501
C-1	3	3	8	8	6	6	6	7	33	33	5	5	45	45	25	25	94	94	8	8	1	0	234	234
C-7	1	1	3	3	3	3	2	2	14	13	2	2	18	18	10	10	39	39	4	4	0	0	96	95
A-1	4	4	9	9	8	7	6	6	38	38	6	6	51	52	28	28	108	108	10	10	0	0	268	268
A-1	8	7	18	18	14	14	12	13	74	74	12	11	99	99	55	55	208	209	19	19	1	1	520	520
B-2	6	6	13	13	11	11	9	9	55	55	8	8	74	74	41	41	155	155	14	14	0	0	386	386
	129	*128*	*309*	*307*	*251*	*250*	*215*	*215*	*1271*	*1270*	*195*	*194*	*1721*	*1722*	*948*	*948*	*3603*	*3603*	*323*	*323*	*10*	*10*	*8975*	*8970*
	129	128	309	307	251	250	215	215	1,271	1,270	195	194	1,721	1,722	948	948	3,603	3,603	323	323	10	10	8975	8970

Appendix - Internal trips between Home Planning Areas and Commerical Planning Areas for AM Peak Hour

grayed text is internal to itself

	F-1.1		F-1.1		G-1		E-1		F-1.2		F-1.2		E-2		E-2		F-1.3		D-1		G-2		Total	
PA	Comm		Comm		Comm		Comm		Comm		Comm		Comm		Comm		Comm		Comm		Comm			
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
F-1.1	2	0	4	1	4	1	0	0	2	1	3	0	3	2	2	1	25	6	1	1	0	0	46	13
F-1.3	2	0	4	1	4	1	1	0	2	1	3	0	4	2	3	1	29	7	1	1	0	0	53	14
E-2	2	0	4	1	3	0	0	0	2	2	2	0	3	2	2	1	23	5	1	1	0	0	42	12
D-1	1	1	3	0	3	0	0	0	1	1	2	0	3	2	2	1	19	4	0	1	1	0	35	10
D-1	1	0	3	0	2	0	0	0	1	1	2	0	2	1	2	1	17	5	0	1	1	0	31	9
B-1	2	0	6	1	5	1	1	0	3	1	4	1	5	3	3	2	36	8	1	1	0	0	66	18
C-2	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	1	5	1	0	0	0	0	8	2
D-1	1	0	3	1	3	0	0	0	1	1	2	0	3	2	2	1	20	5	1	0	0	0	36	10
D-1	2	0	3	1	3	0	0	1	2	1	2	0	3	2	2	1	23	5	1	0	0	0	41	11
D-1	2	0	4	1	4	1	1	1	2	1	3	0	3	2	2	1	26	6	1	0	0	0	48	13
C-2	0	0	0	0	1	0	0	1	0	0	1	0	1	1	1	0	6	1	0	0	0	0	10	3
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C-2	0	0	1	0	1	0	0	1	1	0	1	0	1	1	1	0	7	2	0	0	0	0	13	4
C-2	0	0	1	0	1	0	0	0	0	0	0	0	1	1	0	0	4	1	0	0	0	0	7	2
C-2	0	0	1	0	1	0	0	0	0	0	0	1	1	0	0	0	4	1	0	0	0	0	7	2
C-1	0	0	1	0	1	0	0	0	0	0	1	0	1	1	1	0	7	2	0	0	0	0	12	3
C-1	1	0	2	0	2	0	1	0	2	1	1	1	2	1	1	1	15	3	0	0	0	0	27	7
C-2	1	0	3	0	3	1	1	0	1	1	2	1	2	1	2	1	17	4	0	0	0	0	32	9
C-2	2	0	4	1	4	1	0	0	2	1	3	1	3	2	2	1	25	6	1	0	0	0	46	13
D-1	2	0	4	1	3	0	0	0	2	2	2	0	2	2	2	1	22	5	1	0	0	0	40	11
C-1	1	1	2	0	1	1	1	0	1	0	1	0	1	1	1	0	10	2	0	0	0	0	19	5
C-7	0	0	1	0	1	1	1	0	0	0	0	0	1	0	0	0	4	1	0	0	0	0	8	2
A-1	1	0	2	0	2	0	0	0	1	1	1	0	2	1	1	1	12	3	0	0	0	0	22	6
A-1	2	1	4	1	3	0	0	0	2	2	2	0	3	2	2	1	23	5	1	0	0	0	42	12
B-2	2	1	3	0	2	0	0	0	1	1	2	1	2	1	2	1	17	4	0	0	0	0	31	9
	27	*4*	*64*	*10*	*58*	*8*	*7*	*4*	*29*	*19*	*40*	*6*	*53*	*33*	*36*	*18*	*396*	*92*	*10*	*6*	*2*	*0*	*722*	*200*
	27	4	64	10	58	8	7	4	29	19	40	6	53	33	36	18	396	92	10	6	2	0	722	200

Appendix - Internal trips between Home Planning Areas and Commerical Planning Areas for PM Peak Hour

blue text is internal to itself

	1		3		4		5		6		7		8		10		11		12		16		Total	
PA	Comm		Comm		Comm		Comm		Comm		Comm		Comm		Comm		Comm		Comm		Comm			
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
F-1.1	0	2	1	4	1	3	1	1	8	8	0	2	11	12	6	7	16	34	2	2	0	0	46	75
F-1.3	1	2	1	4	1	4	2	2	9	9	1	3	12	13	6	8	18	39	2	2	0	0	53	86
E-2	0	2	1	4	1	3	1	1	7	7	0	2	10	10	5	6	15	31	2	2	0	0	42	68
D-1	1	1	1	2	0	3	1	1	6	6	1	2	8	9	4	5	12	26	1	2	0	0	35	57
D-1	1	1	1	3	0	2	1	1	6	6	0	2	7	8	4	5	11	23	1	1	0	0	32	52
B-1	1	2	1	6	1	5	2	3	11	11	1	4	15	16	8	9	23	48	3	3	0	0	66	107
C-2	0	0	0	1	0	1	0	0	2	1	0	1	2	2	1	1	3	6	0	0	0	0	8	13
D-1	0	1	1	3	0	3	1	1	6	6	0	2	8	9	5	5	13	27	2	2	0	1	36	60
D-1	0	1	0	3	1	3	2	2	7	7	0	2	10	10	5	6	14	30	2	2	0	1	41	67
D-1	1	2	0	4	1	3	2	2	8	8	0	3	11	11	6	7	17	35	2	3	0	0	48	78
C-2	0	0	0	1	0	1	0	0	2	2	1	1	2	3	1	1	4	7	0	0	0	0	10	16
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C-2	0	0	0	1	0	1	0	0	2	2	0	1	3	3	1	2	5	10	1	1	0	0	12	21
C-2	0	1	0	1	0	1	0	0	1	1	0	0	2	2	1	1	3	5	0	0	0	0	7	12
C-2	0	1	0	1	0	1	0	0	1	1	0	0	2	2	1	1	3	5	0	0	0	0	7	12
C-1	0	0	0	1	0	1	0	0	2	2	0	1	3	3	2	2	4	9	1	1	0	0	12	20
C-1	0	1	0	2	0	1	1	1	5	5	1	1	6	7	3	4	9	20	1	2	0	0	26	44
C-2	0	1	1	3	0	2	1	1	6	6	1	2	7	8	4	4	11	23	1	2	0	0	32	52
C-2	0	2	1	4	1	3	1	1	8	8	0	2	11	12	6	7	16	34	2	2	0	0	46	75
D-1	0	1	1	3	1	3	1	1	7	7	0	2	9	10	5	6	14	30	2	2	0	0	40	65
C-1	0	1	0	1	0	1	1	1	4	3	0	1	4	5	2	3	6	14	1	1	0	0	18	31
C-7	0	0	0	1	0	1	0	0	2	2	0	0	2	2	1	1	2	6	1	0	0	0	8	13
A-1	0	1	0	1	0	2	1	1	4	4	0	1	5	5	3	3	8	16	1	1	0	0	22	35
A-1	0	2	1	4	1	3	1	1	7	7	0	2	10	10	5	6	15	31	2	2	0	0	42	68
B-2	0	1	1	3	0	2	1	1	5	6	1	2	7	8	4	4	11	23	1	1	0	0	31	51
	5	*26*	*12*	*61*	*9*	*53*	*21*	*22*	*126*	*125*	*7*	*39*	*167*	*180*	*89*	*104*	*253*	*532*	*31*	*34*	*0*	*2*	*720*	*1178*
	5	26	12	61	9	53	21	22	126	125	7	39	167	180	89	104	253	532	31	34	0	2	720	1178

Appendix - Internal trips between Home Planning Areas and Commerical Planning Areas for Saturday Peak Hour

blue text is internal to itself

	1		3		4		5		6		7		8		10		11		12		16		Total	
PA	Comm		Comm		Comm		Comm		Comm		Comm		Comm		Comm		Comm		Comm		Comm			
	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
PL-1.07	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F-1.1	1	0	1	1	1	1	2	2	12	12	1	1	13	13	7	7	21	21	3	2	0	0	62	60
F-1.3	1	1	1	1	1	1	2	2	14	14	1	1	16	14	8	8	23	23	3	3	0	0	70	68
E-2	0	1	1	1	1	1	2	1	11	11	1	1	12	11	7	6	19	19	2	2	0	0	56	54
D-1	0	1	1	1	0	1	1	1	9	9	1	0	10	10	6	5	16	15	2	2	0	0	46	45
D-1	0	0	1	1	0	1	1	1	8	9	0	0	9	9	6	4	15	14	2	2	0	0	42	41
B-1	1	1	2	1	1	2	2	2	17	18	1	1	19	18	10	10	31	29	4	3	0	0	88	85
C-2	0	1	0	0	0	0	0	0	3	2	0	0	3	2	1	1	4	4	0	0	0	0	11	10
D-1	0	0	1	1	0	1	1	1	10	10	1	1	11	10	6	5	17	16	2	2	0	0	49	47
D-1	0	0	1	1	1	1	2	1	10	12	1	1	12	11	7	6	19	18	2	2	0	0	55	53
D-1	1	0	1	1	1	1	2	2	12	13	1	1	14	13	7	7	22	21	3	2	0	0	64	61
C-2	0	0	0	0	0	0	0	0	3	3	0	0	3	3	2	1	5	5	1	1	0	0	14	13
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C-2	0	1	0	0	0	0	0	0	3	3	0	0	4	4	2	2	7	6	1	1	0	0	17	17
C-2	0	0	1	0	0	0	0	0	2	2	0	0	3	2	1	1	3	3	0	1	0	0	10	9
C-2	1	0	1	0	0	0	0	0	2	2	0	0	2	2	1	2	3	3	0	0	0	0	10	9
C-1	0	1	0	0	0	0	0	1	3	3	0	0	4	3	2	2	6	5	1	1	0	0	16	16
C-1	1	0	1	1	0	1	1	1	7	7	0	0	8	7	4	4	13	12	1	1	0	0	36	34
C-2	0	0	1	1	0	1	1	1	8	9	0	0	9	9	6	4	15	14	2	2	0	0	42	41
C-2	1	0	1	1	1	1	2	2	11	12	1	1	14	13	7	7	21	21	3	2	0	0	62	60
D-1	0	0	1	1	1	1	2	1	10	11	1	1	12	11	6	6	19	18	2	2	0	0	54	52
C-1	0	0	0	1	0	0	1	1	5	5	0	0	6	5	3	3	9	8	1	1	0	0	25	24
C-7	1	0	0	0	0	1	0	0	2	2	0	0	2	2	1	1	4	4	0	0	0	0	10	10
A-1	0	0	1	0	0	1	1	1	6	6	0	0	6	6	3	3	10	10	1	1	1	0	29	28
A-1	0	0	1	1	1	1	2	2	11	11	1	1	12	11	7	6	19	19	2	2	0	0	56	54
B-2	0	0	1	1	0	1	2	1	8	8	0	0	9	8	5	5	14	14	2	2	0	0	41	40
	8	*7*	*19*	*16*	*9*	*18*	*27*	*24*	*187*	*194*	*11*	*10*	*213*	*197*	*115*	*106*	*335*	*322*	*40*	*37*	*1*	*0*	*965*	*931*
	8	7	19	16	9	18	27	24	187	194	11	10	213	197	115	106	335	322	40	37	1	0	965	931

Appendix: Recreation Internal Trips

		Ice Rink - Internal to Dawson								Fields - Internal to Dawson							
		Daily		AM		PM		Sat		Daily		AM		PM		Sat	
		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
E-2	5.8%	4	4	0	0	1	0	1	1	2	2	1	0	1	0	1	1
D-1	5.1%	4	4	0	1	1	0	1	1	2	2	0	0	1	0	1	1
D-1	4.1%	3	3	0	0	0	0	1	1	1	1	0	0	0	0	1	1
D-1	1.6%	2	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
D-1	6.6%	5	5	0	0	1	0	1	1	2	2	0	0	1	0	1	1
D-1	2.8%	2	2	0	0	0	0	0	0	1	1	0	0	0	0	0	1
C-2	1.1%	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C-2	1.8%	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
B-1	5.8%	4	4	0	0	0	1	1	1	2	2	0	0	1	0	1	1
F-1.3	7.3%	5	5	0	0	1	1	1	1	2	2	0	0	1	0	1	1
F-1.2	6.4%	5	5	0	0	1	0	1	1	2	2	0	0	1	0	1	1
D-1	4.4%	3	3	0	0	0	1	1	1	1	1	0	0	0	1	1	1
D-1	2.9%	2	2	0	0	0	0	0	0	1	1	0	0	0	0	0	1
D-1	4.8%	4	4	0	0	1	1	1	1	2	2	0	0	0	0	1	1
C-2	1.6%	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
C-2	2.1%	2	2	0	0	0	0	0	0	1	1	0	0	0	1	0	0
C-1	3.7%	3	3	0	0	0	0	1	1	1	1	0	0	0	0	1	1
C-2	1.0%	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
B-1	3.2%	2	2	0	0	0	0	1	0	1	1	0	0	0	0	1	1
C-2	1.0%	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C-1	1.7%	1	1	0	0	0	0	1	0	1	1	0	0	1	0	0	0
C-2	4.2%	3	3	0	0	1	1	1	1	1	1	0	0	0	0	1	1
C-1	1.1%	1	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0
B-2	4.3%	3	3	0	0	0	0	1	1	1	1	0	0	0	1	1	1
C-2	4.2%	4	3	0	0	0	0	1	1	1	1	0	0	0	0	1	1
C-1	2.6%	2	2	0	0	0	0	0	0	1	1	0	0	0	0	0	0
A-1	5.8%	4	4	1	0	1	0	1	1	2	2	0	0	1	0	1	1
A-1	3.0%	2	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	100.0%	75	73	1	1	8	7	16	14	31	31	1	0	8	3	17	18

Appendix: School Internal Trips

				Elem 1						Elem 2						High School									
				Daily		AM		PM		Daily		AM		PM		Daily		AM		PM		Sat Daily		Sat Peak	
				IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
E-2	5.8%	9.9%		38	38	14	12	3	3							106	106	36	18	7	8	24	24	5	3
D-1	5.1%	8.7%		33	33	13	11	3	3							93	93	32	16	6	6	21	21	4	3
D-1	4.1%	7.0%		27	27	10	9	2	3							75	75	26	13	5	5	17	17	4	2
D-1	1.6%	2.7%		10	10	4	3	1	1							29	29	10	5	2	3	6	6	1	1
D-1	6.6%	11.1%		43	43	16	14	3	4							121	121	41	20	8	8	27	27	6	3
D-1	2.8%	4.7%		18	18	7	6	2	2							51	51	18	9	3	4	11	11	2	1
C-2	1.1%	1.9%		7	7	3	2	1	1							20	20	7	3	1	1	4	4	1	1
C-2	1.8%	3.1%		12	12	5	4	1	1							33	33	12	6	3	2	7	7	2	1
B-1	5.8%	9.9%		38	38	14	12	3	4							106	106	36	18	7	8	24	24	5	3
F-1.3	7.3%	12.3%		47	47	18	15	4	4							133	133	46	23	9	10	30	30	6	3
	0.0%	0.0%		0	0	0	0	0	0							0	0	0	0	0	0	0	0	0	0
	6.4%	10.8%		41	41	16	14	3	3							117	117	40	20	8	8	26	26	6	3
D-1	4.4%		10.7%							41	40	16	13	4	3	80	80	28	14	5	6	18	18	4	2
D-1	2.9%		7.0%							27	27	10	9	2	3	53	53	18	9	4	4	12	12	3	2
D-1	4.8%		11.7%							45	45	17	15	4	4	88	88	30	15	6	6	19	19	4	2
C-2	1.6%		3.8%							15	15	6	4	1	2	29	29	10	5	2	2	6	6	1	1
C-2	2.1%		5.2%							20	20	8	7	2	2	38	38	13	6	3	3	9	9	2	1
C-1	3.7%	6.3%		24	24	9	8	2	2							68	68	23	11	4	5	15	15	3	2
C-2	1.0%	1.7%		6	6	2	2	1	1							18	18	7	3	1	1	4	4	1	1
B-1	3.2%	5.5%		21	21	8	7	2	2							58	58	20	10	4	4	13	13	3	2
C-2	1.0%	1.7%		7	6	2	2	1	1							18	18	6	3	1	1	4	4	1	1
C-1	1.7%	2.8%		11	11	5	4	1	1							31	31	11	5	2	2	7	7	1	1
C-2	4.2%		10.3%							39	39	15	13	4	4	77	77	26	13	5	6	17	17	4	2
C-1	1.1%		2.6%							10	10	4	3	1	1	20	20	7	3	1	1	4	4	1	1
B-2	4.3%		10.4%							40	40	15	13	3	3	79	79	27	13	5	6	17	17	4	2
C-2	4.2%		10.3%							39	39	15	13	3	4	77	77	26	13	5	6	17	17	4	2
C-1	2.6%		6.3%							24	24	9	8	2	2	48	48	16	8	3	3	11	11	2	1
A-1	5.8%		14.3%							55	55	21	18	5	5	106	106	36	18	7	8	24	24	5	3
A-1	3.0%		7.2%							28	28	10	9	2	3	55	55	19	9	4	4	12	12	3	2
	100.0%	100.1%	99.8%	383	382	146	125	33	36	383	382	146	125	33	36	1827	1827	627	309	121	131	406	406	88	52

JACOBS®

Memorandum

Subject	**Traffic Forecast Report**
Project Name	I-25 Crystal Valley Interchange Access Request
Attention	Aaron Monks, Town of Castle Rock Art Griffith, Douglas County Paul Sherner, Colorado Department of Transportation (CDOT) Melinda Urban, Federal Highway Administration (FHWA)
From	Neha Rathi, Jacobs Michelle Pinkerton, Jacobs
Date	03/18/2022
Copies to	File

The purpose of this memorandum is to summarize the travel demand modeling results and final traffic forecasts for the intersections. The document also summarizes planning level findings for the sensitivity analysis performed to understand the traffic shift from the West Frontage Road on the I-25 facility.

Traffic forecasts were developed for two future tears, opening year (2025) and design year (2050) supported by the travel demand forecasts from the Denver Regional Council of Governments (DRCOG) Model version FOCUS 2.3 adopted in Spring of 2021. Regional travel demand models are widely accepted planning tools to produce system-level traffic forecasts useful for identifying transportation needs and future travel conditions. The traffic forecast development process followed the guidelines as described in the Colorado Department of Transportation - Traffic Analysis and Forecasting Guidelines (July 2018).

The methodology, assumptions, and data sources used in the traffic forecasting process conducted to develop volumes for the traffic microsimulation analyses have been detailed in the “Traffic Forecasting Methodology” technical memorandum.

1. Opening Year (2025) Traffic Forecasts

For travel demand modeling purposes, the DRCOG 2023 model was the opening year (2025) model. The traffic forecast for 2025 was estimated by applying an additional two years of growth extracted from the DRCOG model to the 2023 traffic forecasts.

Table 1-1 shows a summary on the network elements assumed for 2025 roadway network in the study area vicinity.

Table 1-1. Network Comparison, Opening Year (2025) Scenarios

Network	2020 Base Year	2025 No-Build Alternative	2025 Build Representative Alternative	2025 Build Sensitivity Alternative
Prairie Hawk Drive connection to Plum Creek Parkway	✗	✗	✗	✓
West Frontage Road with existing alignment	✗	✗	✗	✗
Realigned West Frontage Road	✗	✗	✗	✓
Full Interchange at Crystal Valley Parkway and I-25	✗	✗	✓	✓

1.1 Opening Year (2025) No-Build Traffic Forecasts

The 2025 No-Build scenario includes other planned/programmed projects in the study area (per the DRCOG 2050 RTP), and inputs from the Town and Douglas County. Freeway improvements within the study area that are in the DRCOG 2050 RTP that are part of the Crystal Valley Interchange improvements were not included in the no-build condition.

The intersection turning movement forecasts for the opening year (2025) No-Build scenario, for both AM (7:00 – 8:00 AM) and PM (4:00 – 5:00 PM) peak hours, were developed individually. The forecasts for the other two hours of the AM (6 to 9 AM) and PM (3 to 6 PM) time periods were estimated by applying a factor based on model trends to the middle-hour forecasts. This ensures that the variation of traffic flow during the three-hour peak period is reflected in future year forecasts. The forecasted turning movements are included in **Appendix A**.

1.2 Opening Year (2025) Build Traffic Forecasts

The 2025 Build scenario, like No-Build, scenario includes all the planned/programmed projects and additional improvements anticipated to be in place according to the Town and Douglas County. The Build scenario also includes the proposed Crystal Valley Interchange, improvements to the freeway system, freeway access roads, and local roads included in the Crystal Valley Interchange build alternative.

The intersection turning movement forecasts for the opening year (2025) Build scenario, for both AM (7:00 – 8:00 AM) and PM (4:00 – 5:00 PM) peak hours, were developed individually. The forecasts for the other two hours of the AM (6 to 9 AM) and PM (3 to 6 PM) time periods were estimated by applying a factor based on model trends to the middle-hour forecasts. The forecasted turning movements are included in **Appendix A**.

1.3 Opening Year (2025) Build – Sensitivity Analysis

A planning level sensitivity analysis with Crystal Valley Interchange built, was performed using the DRCOG model to understand the traffic shift between I-25 and West Frontage Road for the opening year (2025). The sensitivity analysis review was done at a high-level analyzing traffic shifts at roadway links based on the raw model (2023) assigned traffic volumes. The 2023 daily assigned volume difference plot from the DRCOG model for the project build scenario with two different network configurations – with and without the West Frontage Road - is included in **Appendix A**.

Overall, we see that the 2023 volumes in the model are low on the West Frontage Road. The model is shifting traffic from West Frontage Road to freeway or other parallel arterials as expected. Key traffic shifts are –

- 200-300 vehicle increase on I-25 southbound off-ramp and I-25 northbound on-ramp at Crystal Valley Interchange without West Frontage Road. This shift is coming from Plum Creek Parkway traffic that was using west frontage road to connect between Plum Creek Parkway and Crystal Valley Parkway.
- Other than the traffic shift from West Frontage Road between Plum Creek Parkway and Crystal Valley Parkway, Plum Creek Interchange also sees increased traffic on the ramps because of the missing roadway connection between Prairie Hawk Drive and the West Frontage Road. Overall increase at the Plum Creek Interchange ramps is between 500 – 1,000 vehicles per day.
- With very low daily traffic in 2023 on Twin Oaks Road and Peak View Drive, no traffic shifts occurred, which was an expected result.
- As expected, the shift in traffic volumes south of Crystal Valley was minimal.

2. Design Year (2050) Traffic Forecasts

For travel demand modeling purposes, the DRCOG 2050 model was the design year (2050) model. The traffic forecast for 2050 was estimated using outputs from the 2050 model and post-processed following the methodology as described in the "Traffic Forecasting Methodology" technical memorandum.

Table 2-1 shows a summary on the network elements assumed for 2050 roadway network in the study area vicinity.

Table 2-1. Network Comparison, Opening Year (2050) Scenarios

Network	2020 Base Year	2050 No-Build Alternative	2050 Build Representative Alternative	2050 Build Sensitivity Alternative
Prairie Hawk Drive connection to Plum Creek Parkway	✗	✓	✓	✓
West Frontage Road with existing alignment	✗	✓	✓	✓
Realigned West Frontage Road	✗	✓	✓	✗
Full Interchange at Crystal Valley Parkway and I-25	✗	✗	✓	✓

2.1 Design Year (2050) No-Build Traffic Forecasts

The 2050 No-Build scenario includes other planned/programmed projects in the study area (per the DRCOG 2050 RTP), and inputs from the Town and Douglas County. Freeway improvements within the study area that are in the DRCOG 2050 RTP that are part of the Crystal Valley Interchange improvements were not included in the no-build condition.

The intersection turning movement forecasts for the design year (2050) No-Build scenario, for both AM (7:00 – 8:00 AM) and PM (4:00 – 5:00 PM) peak hours, were developed individually. The forecasts for the other two hours of the AM (6 to 9 AM) and PM (3 to 6 PM) time periods were estimated by applying a factor based on model trends to the middle-hour forecasts. The forecasted turning movements are included in **Appendix A**.

2.2 Design Year (2050) Build Traffic Forecasts

The 2050 Build scenario, like No-Build scenario, includes all the planned/programmed projects and additional improvements anticipated to be in place according to the Town and Douglas County. The Build scenario also includes the proposed Crystal Valley Interchange, improvements to the freeway system, freeway access roads, and local roads included in the Crystal Valley Interchange build alternative.

The intersection turning movement forecasts for the design year (2050) Build scenario, for both AM (7:00 – 8:00 AM) and PM (4:00 – 5:00 PM) peak hours, were developed individually. The forecasts for the other two hours of the AM (6 to 9 AM) and PM (3 to 6 PM) time periods were estimated by applying a factor based on model trends to the middle-hour forecasts. The forecasted turning movements are included in **Appendix A**.

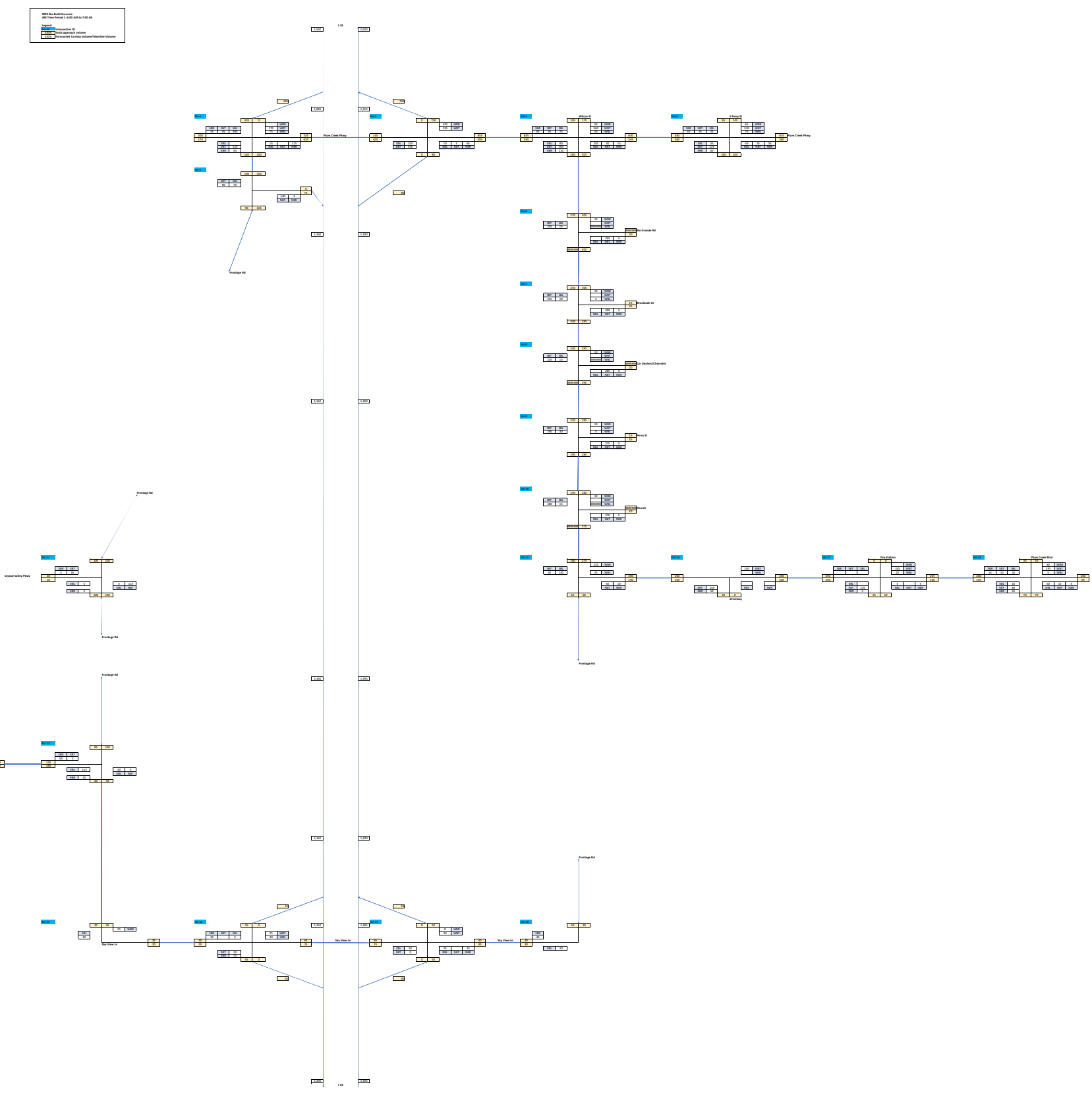
2.3 Design Year (2050) Build – Sensitivity Analysis

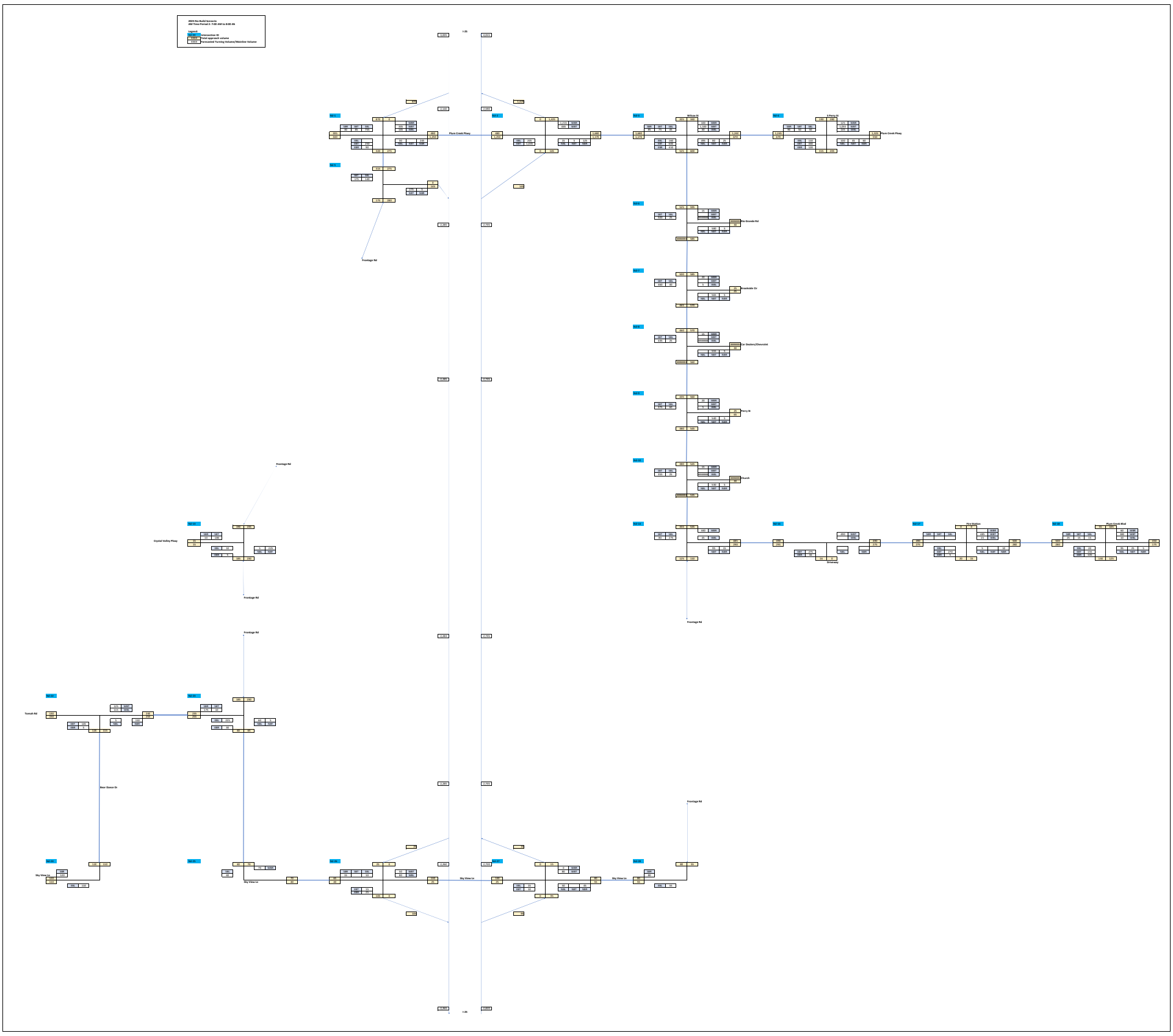
A planning level sensitivity analysis with Crystal Valley Interchange built was performed using the DRCOG model to understand the traffic shift between I-25 and West Frontage Road for the design year (2050). The sensitivity analysis review was a visual approach looking into traffic shifts at roadway link level based on the raw model (2050) assigned traffic volumes. The 2050 daily assigned volume difference plot from the DRCOG model for the two project build scenarios – with and without the West Frontage Road - is included in **Appendix A**.

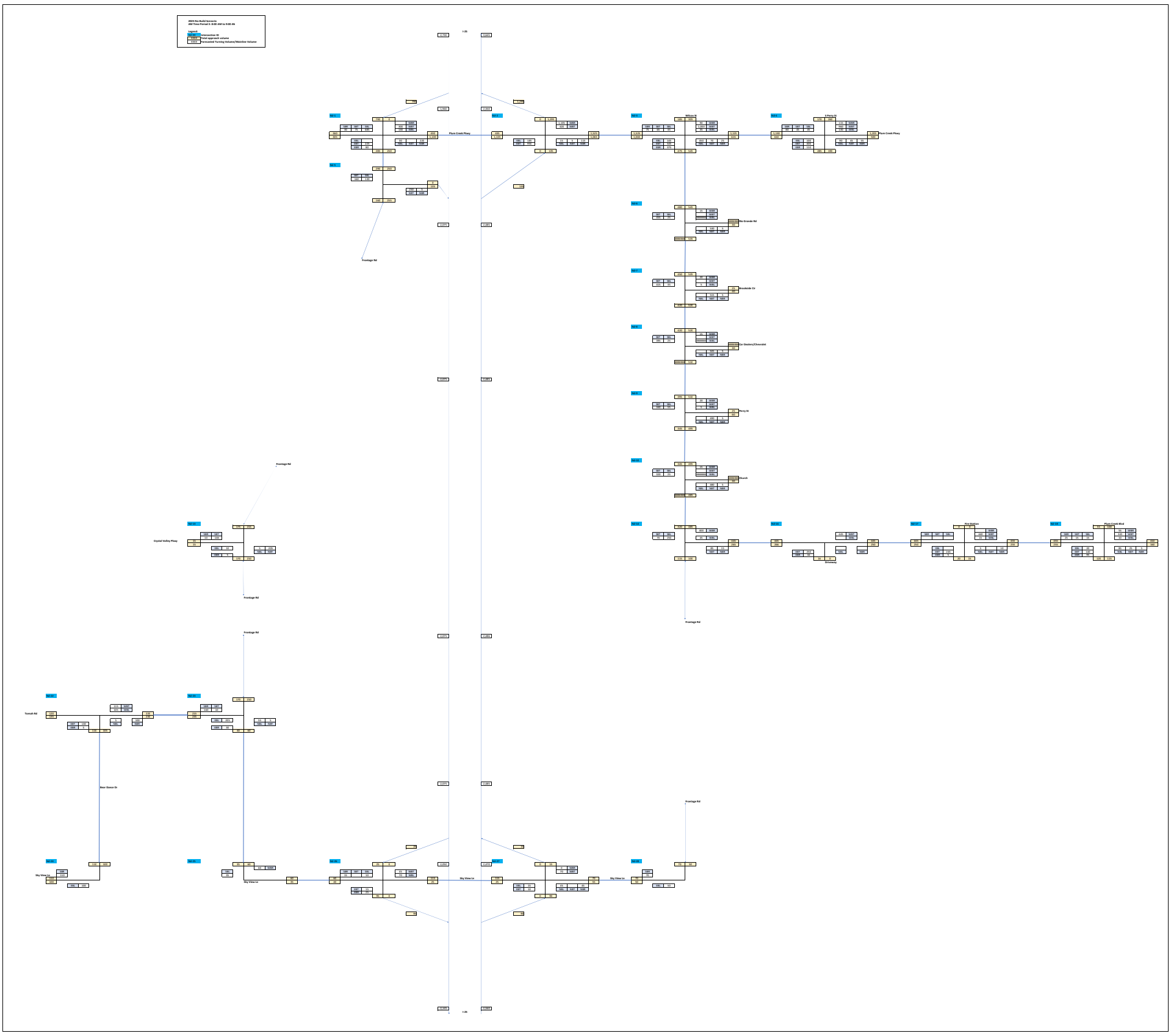
Overall, we see that the model is shifting traffic from West Frontage Road to freeway or other parallel arterials as expected. Key traffic shifts are –

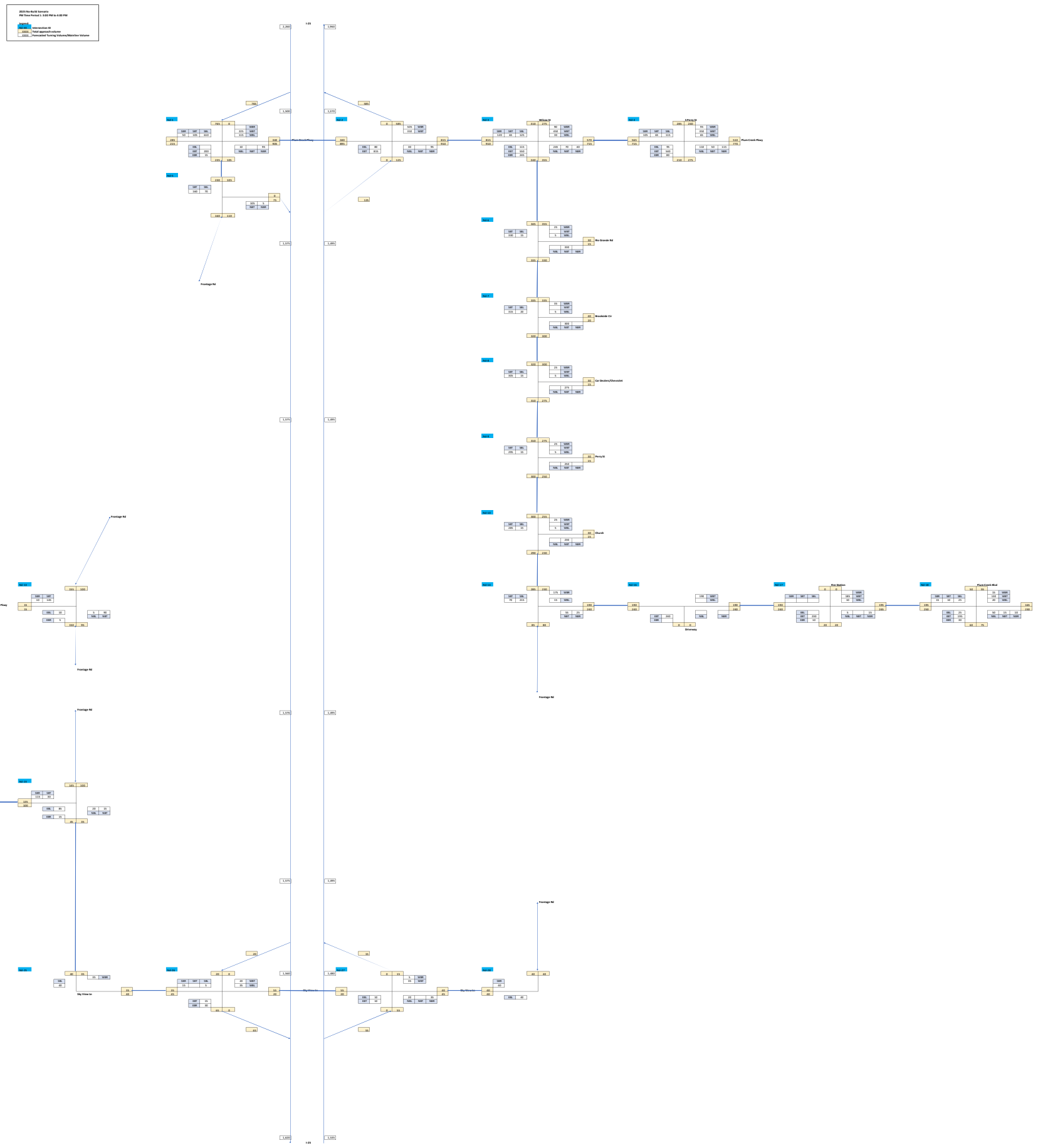
- 2k-3k increased daily traffic on I-25 southbound on-ramp and I-25 northbound off-ramp at Plum Creek Interchange. This shift is from traffic that was using West Frontage Road to connect between Plum Creek and Crystal Valley.
- About 5k increased traffic on I-25 southbound off-ramp and I-25 northbound on-ramp at Crystal Valley Interchange. This includes 2k-3k vehicles that were using West Frontage Road, going southbound from Plum Creek Parkway to Crystal Valley Parkway and the other 2k traffic shift is from vehicles that would have used West Frontage Road going northbound from Crystal Valley Parkway to Plum Creek Parkway to access I-25 freeway but will be accessing freeway directly from Crystal Valley Parkway Interchange now.
- About 200 increased daily vehicles on Twin Oaks Road and Peak View Drive.
- As expected, the shift in traffic volumes south of Crystal Valley was minimal.

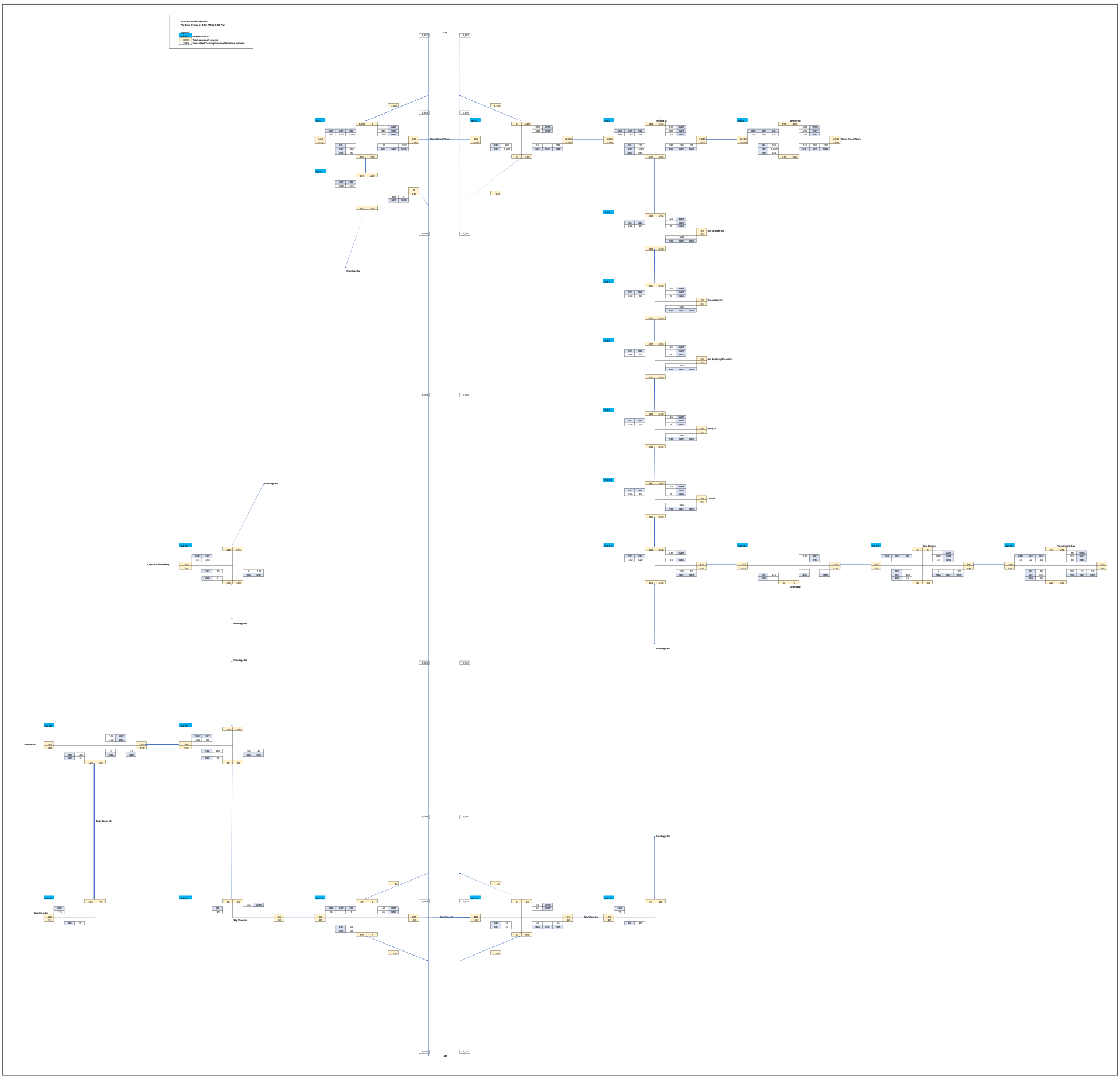
APPENDIX A

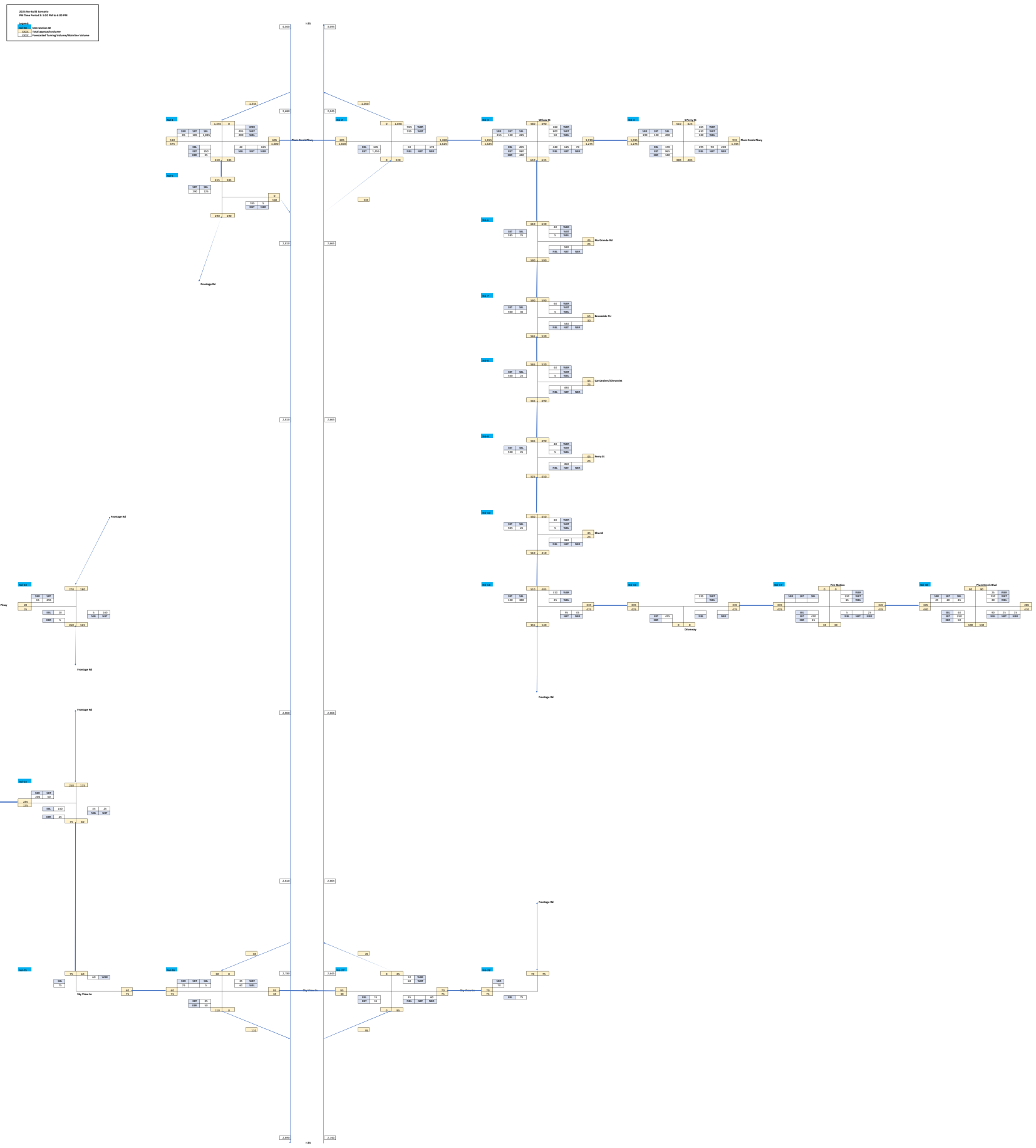

2025 No-Build Scenario
AM Time Period 7: 6:30 AM to 7:30 AN
Legend
Node ID
Intersection ID
Total approach volume
Movement Turning Volume/Mainline Volume
I-25
Frontage Rd
Plum Creek Pkwy
Wilcox N
S Perry N
Rio Grande Rd
Rosedale Cir
Car Dealers/Chevrolet
Perry St
Church
Crystal Valley Pkwy
Fire Station
Plum Creek Blvd
Tomah Rd
Rear Dance Dr
Sky View Ln

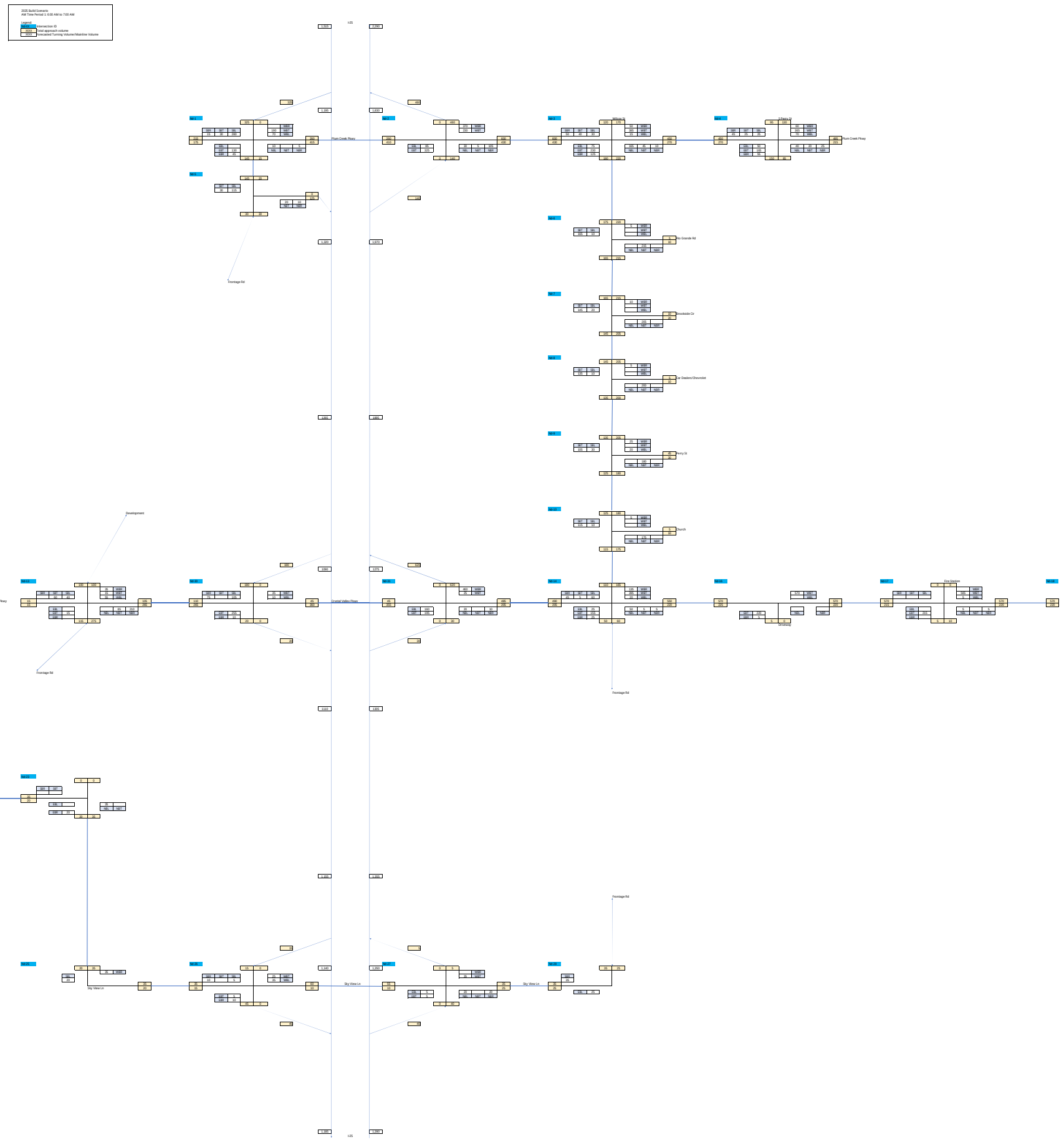

2025 No-Build Scenario
AM Time Period 7: 7:00 AM to 8:00 AN
Legend
Node ID
Intersection ID
Total approach volume
Movement Turning Volume/Mainline Volume
I-25
Plum Creek Pkwy
Frontage Rd
Wilcox St
S Perry St
Rio Grande Rd
Brookside Cir
Perry St
Church
Fire Station
Plum Creek Blvd
Crystal Valley Pkwy
Tomah Rd
Bear Dance Dr
Sky View Ln
Driveway

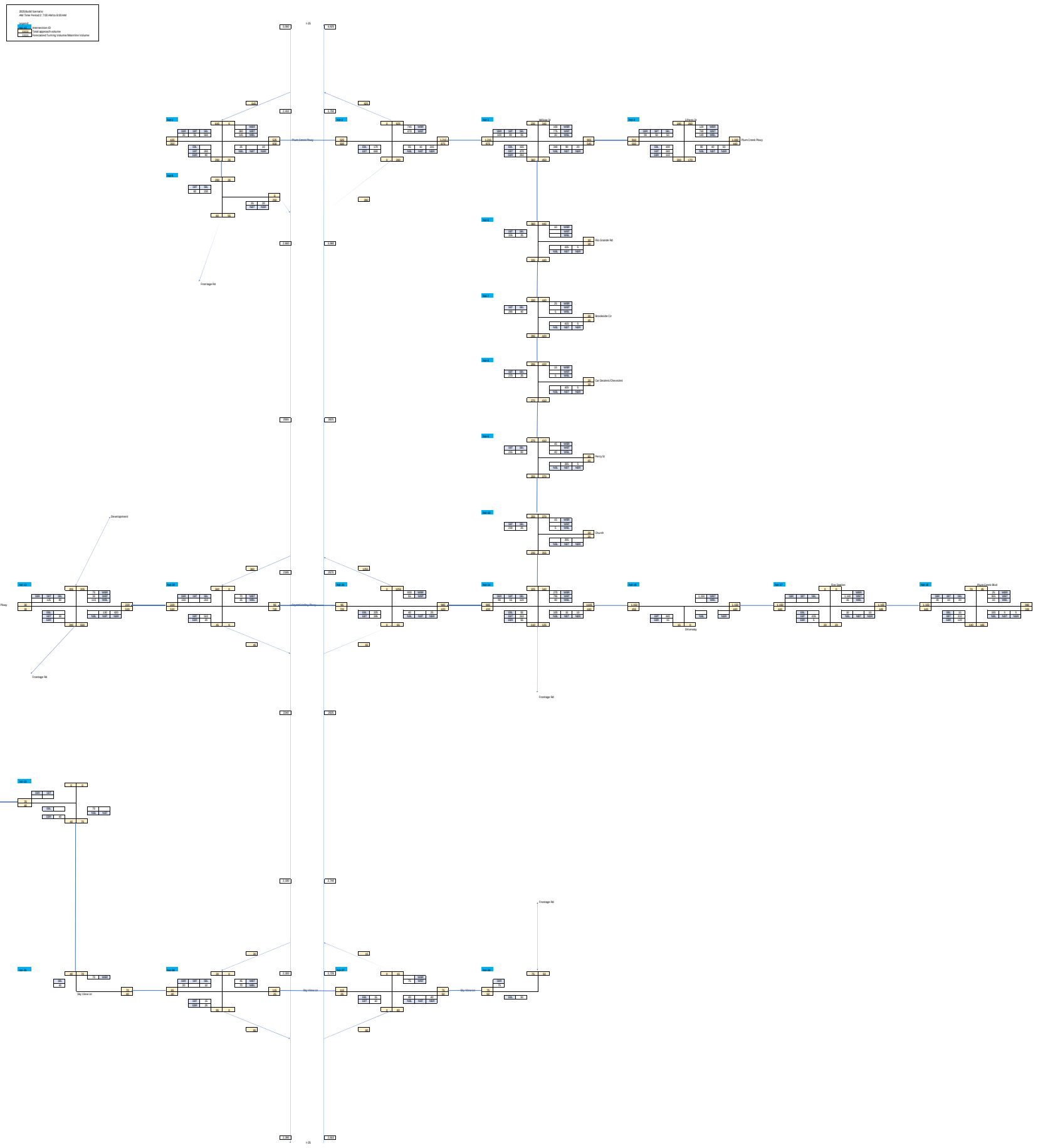

2025 No-Build Scenario
AM Time Period 7: 6:30 AM to 9:00 AM
Legend
Node ID
Intersection ID
Total approach volume
Movement Turning Volume/Mainline Volume
I-25
Plum Creek Pkwy
Wilcox St
S Perry St
Frontage Rd
Rio Grande Rd
Meadowlake Cir
Car Dealers/Chevrolet
Perry St
Church
Crystal Valley Pkwy
Fire Station
Plum Creek Blvd
Tomah Rd
Rear Dawson Dr
Sky View Ln

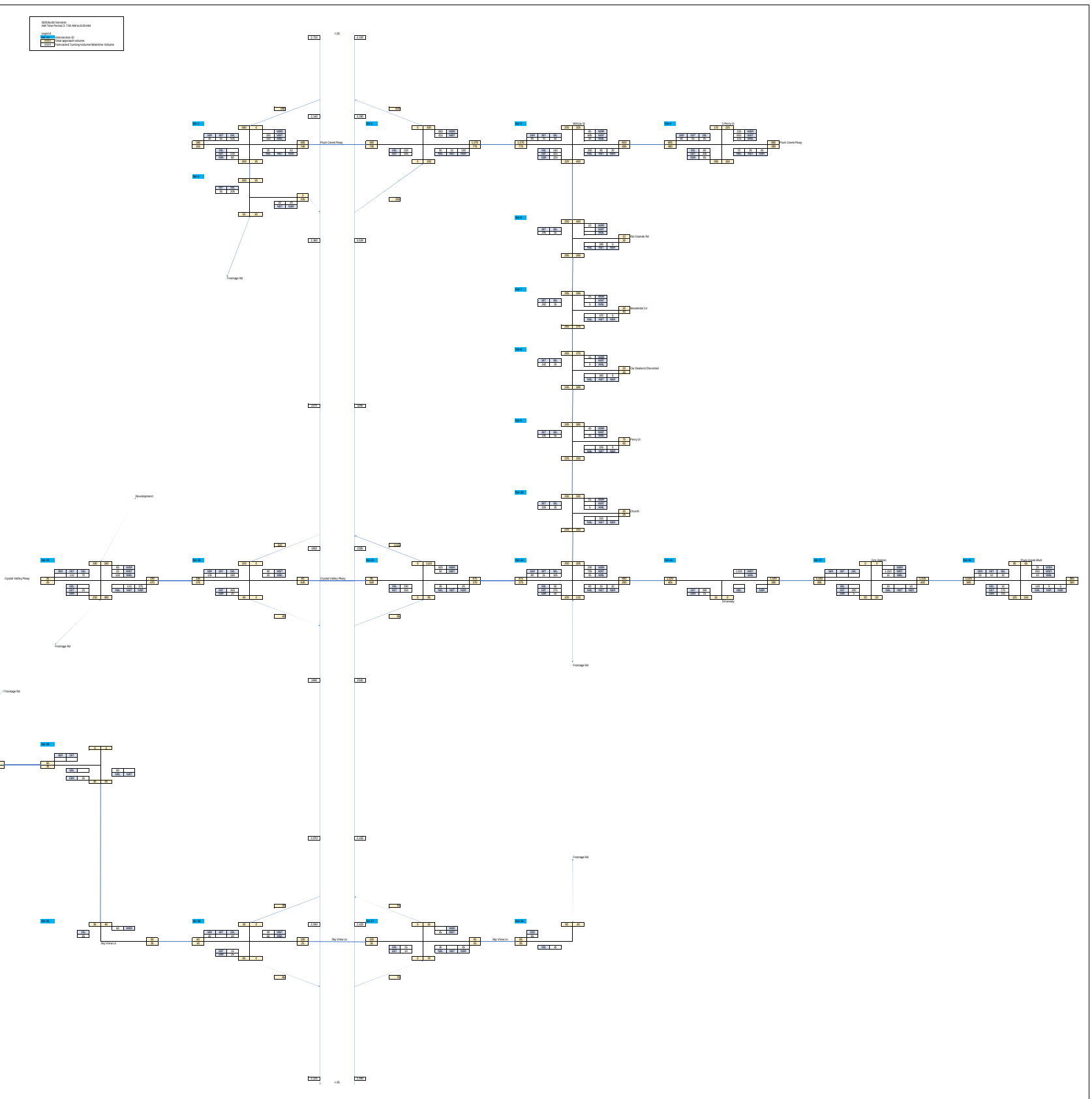

2023 No-Build Scenario
PM Time Period 1: 3:00 PM to 4:00 PM
Legend
Int ID Intersection ID
XXXX Total approach volume
XXXX Forecasted Turning Volume/Mainline Volume
I-25
Plum Creek Pkwy
Wilcox St
S Perry St
Rio Grande Rd
Brookside Cir
Car Dealers/Chevrolet
Perry St
Church
Frontage Rd
Rite Station
Plum Creek Blvd
Crystal Valley Pkwy
Tomah Rd
Bear Dance Dr
Sky View Ln

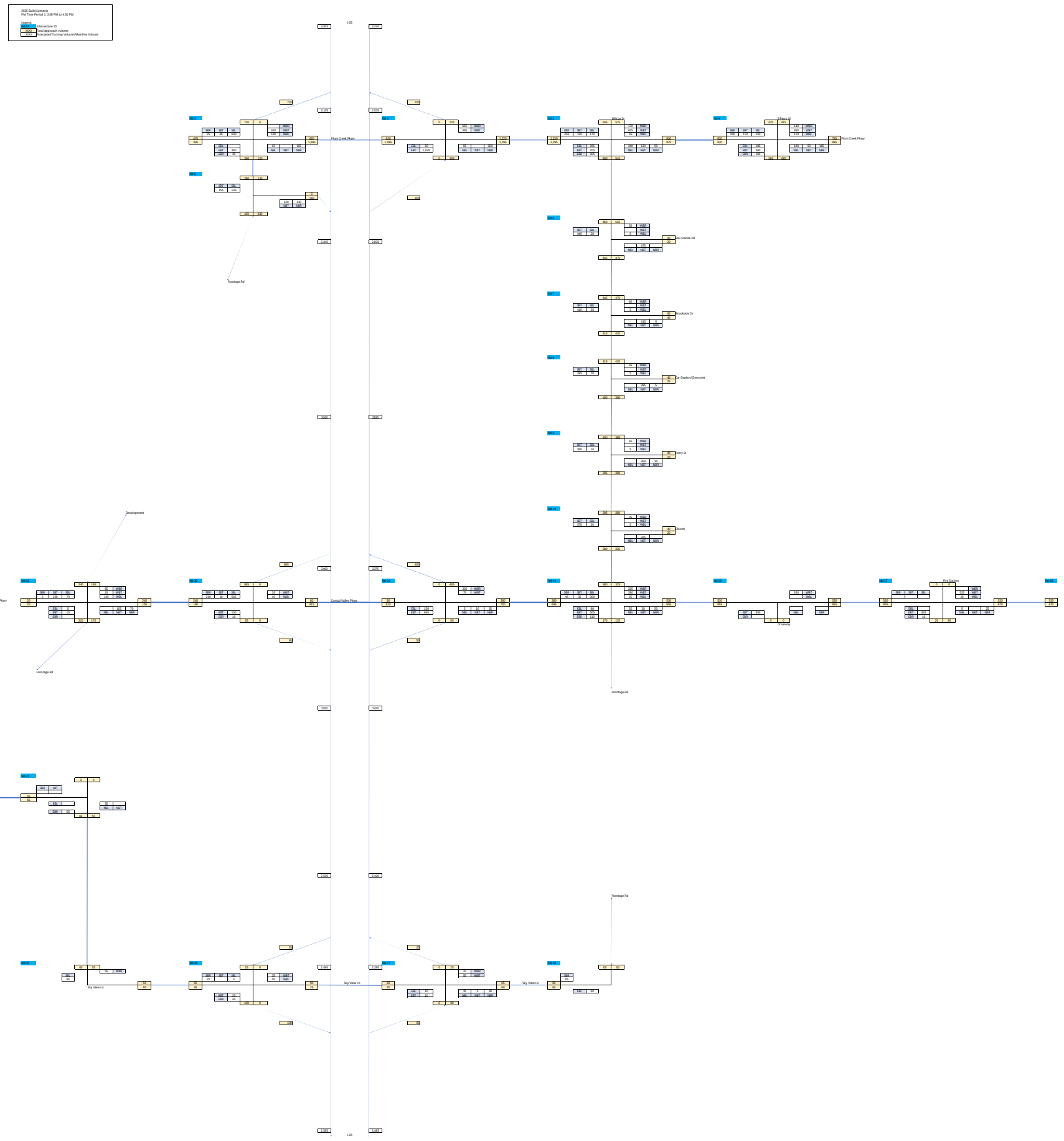

2025 No-Build Scenario
PM Time Period 2: 4:00 PM to 6:00 PM
Legend
Int 00 Intersection ID
XXXX Total approach volume
XXXX Forecasted Turning Volume/Mainline Volume
I-25
Plum Creek Pkwy
Wilcox St
S Perry St
Plum Creek Pkwy
Frontage Rd
Rio Grande Rd
Brookside Cir
Car Dealers/Chevrolet
Perry St
Church
Rite Station
Plum Creek Blvd
Driveway
Crystal Valley Pkwy
Frontage Rd
Tomah Rd
Bear Dance Dr
Sky View Ln
Sky View Ln
Frontage Rd

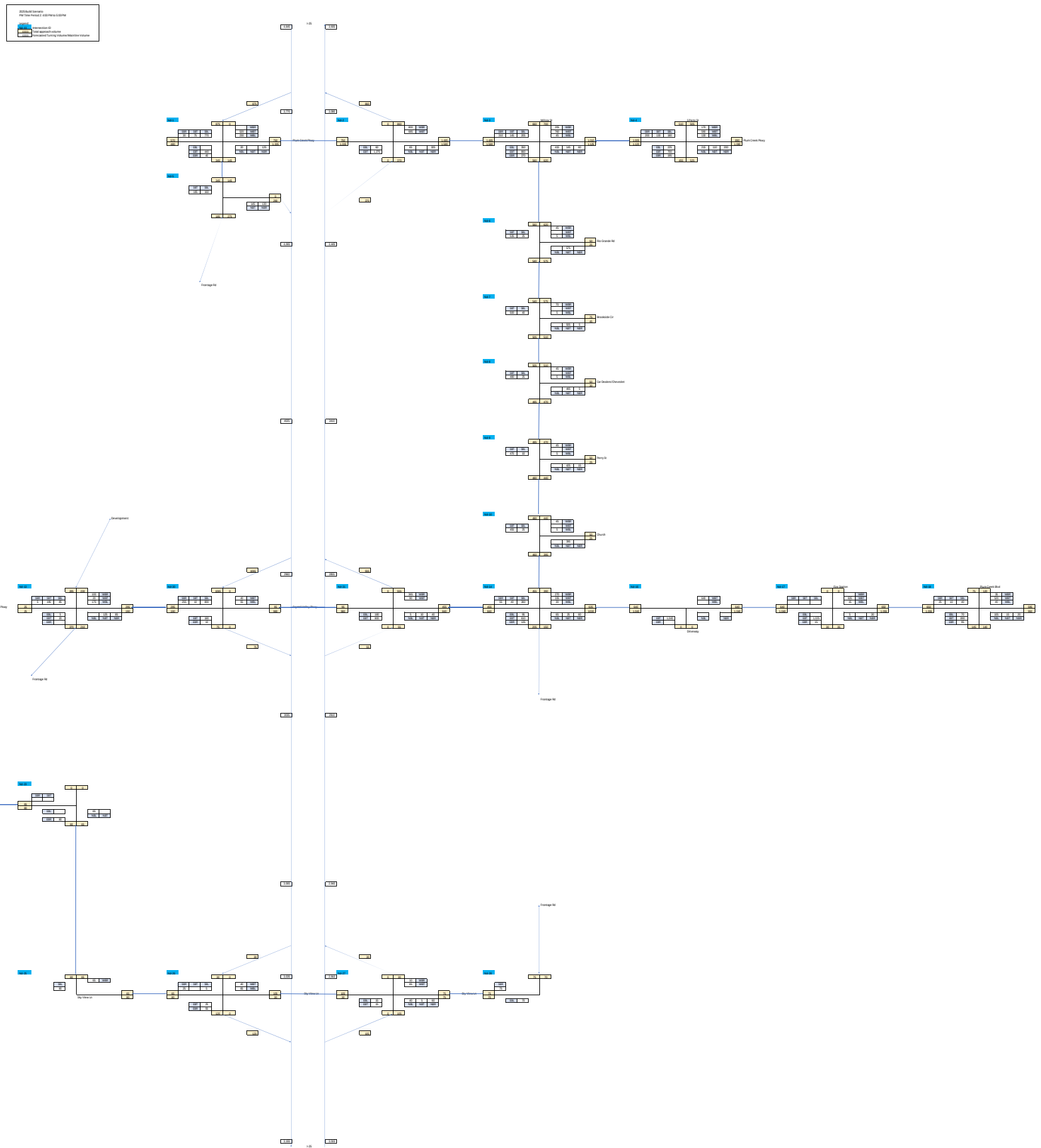

2025 No-Build Scenario
PM Time Period 2: 5:00 PM to 6:00 PM
Legend
Int 00 Intersection ID
XXXX Total approach volume
XXXX Forecasted Turning Volume/Mainline Volume
I-25
Plum Creek Pkwy
Wilcox St
S Perry St
Rio Grande Rd
Broadside Cir
Car Dealers/Chevrolet
Perry St
Church
Frontage Rd
Rim Station
Plum Creek Blvd
Crystal Valley Pkwy
Tomah Rd
Bear Dance Dr
Sky View Ln
Driveway

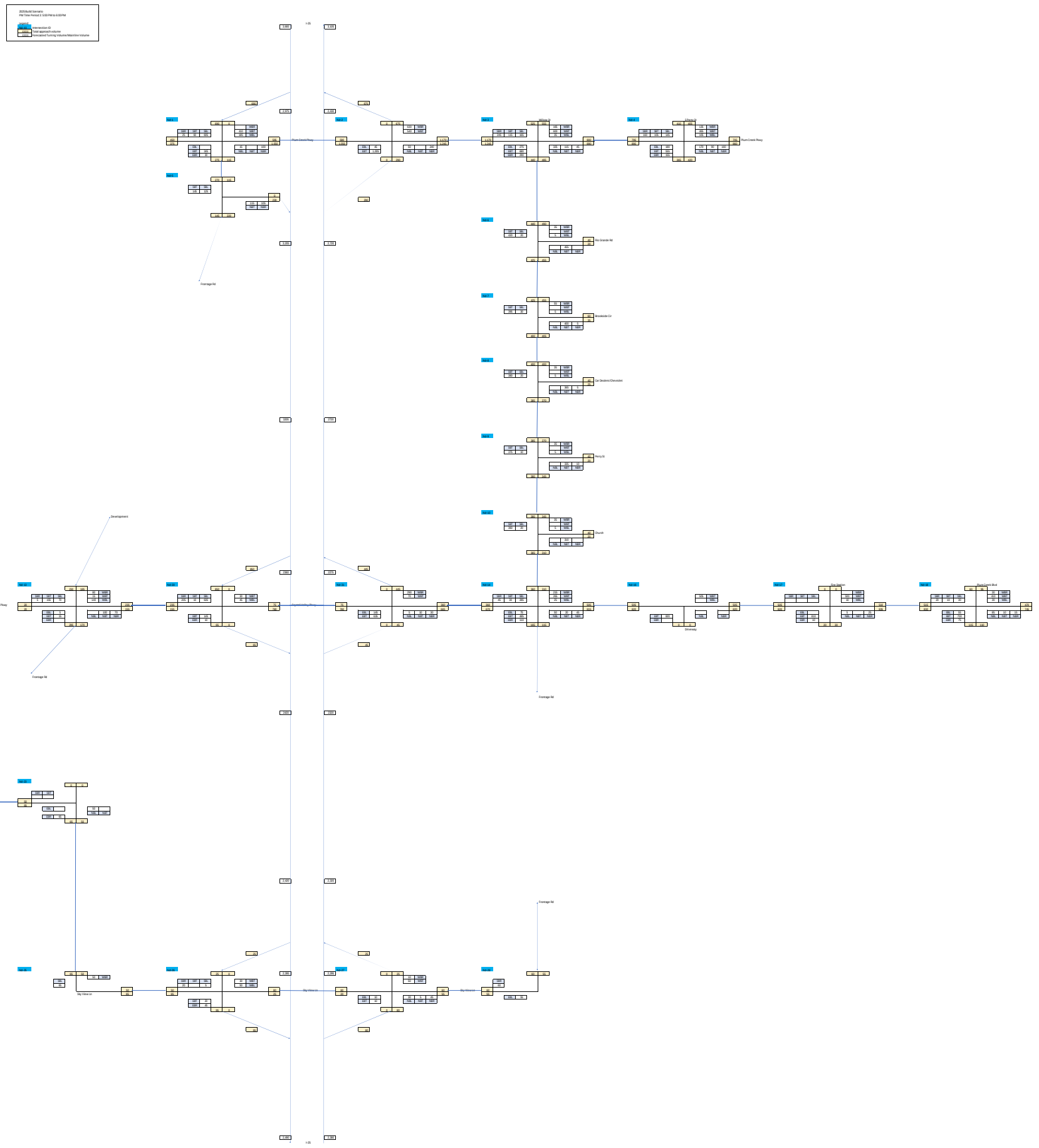

2035 Build Scenario
AM Time Period 1: 6:00 AM to 7:00 AM
Legend
Int. ID: Intersection ID
XXXX: Total approach volume
XXXX: Allocated Turning Volume/Mainline Volume
I-25
Plum Creek Pkwy
Frontage Rd
Willow St
E Plum St
Rio Grande Rd
Brookside Cir
Car Dealers/Chevrolet
Cherry St
Church
Development
Crystal Valley Pkwy
Driveway
Fire Station
Tomah Rd
Bear Dance Dr
Sky View Ln

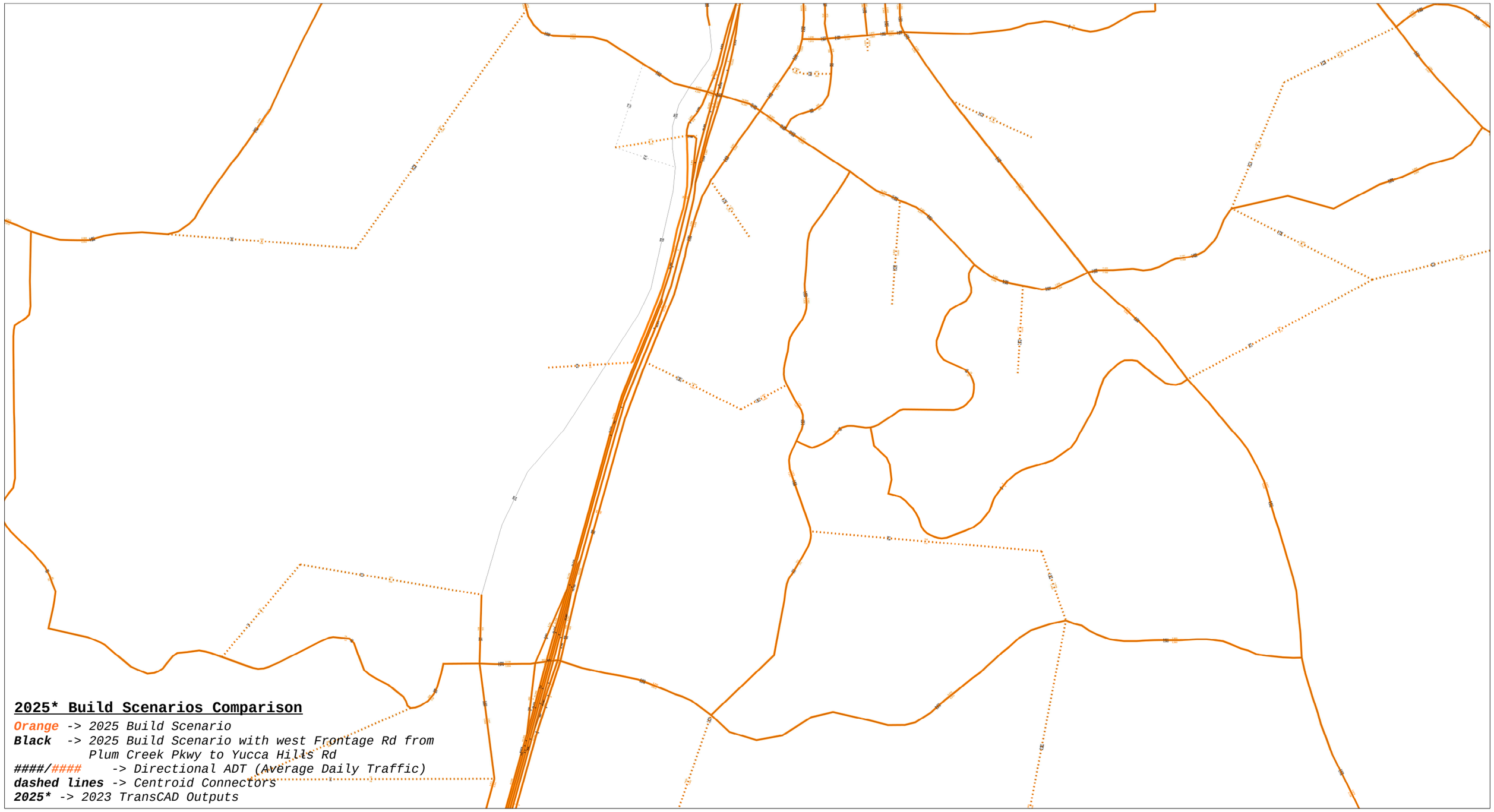

2035 Build Scenario
AM Time Period (7: 7:00 AM to 8:00 AM)
Legend
Intersection ID
Total approach volume
Estimated Turning Volume/Maximize Volume
I-25
Plum Creek Pkwy
Willow St
S Perry St
Frontage Rd
Rio Grande Rd
Brookside Cir
Car Dealers/Chevrolet
Perry St
Church
Development
Crystal Valley Pkwy
Fire Station
Plum Creek Blvd
Driveway
Tomah Rd
Bear Dance Dr
Sky Vista Ln


2035 Build Scenario
AM Time Period: 7:00 AM to 8:00 AM
Legend
Intersection ID
Total approach volume
Intersected Turning Volumes/Mainline Volume
I-25
Plum Creek Pkwy
Frontage Rd
Tomah Rd
Wilcox Ln
Cheryl Ln
Rio Grande Rd
Rosedale Cir
Ivy Dealers\Chevrolet
Ivory Dr
Skyhawk
Development
Crystal Valley Pkwy
Silver Dancer Dr
Sky Vistas Ln
Sky Vistas Ln
Eva Station
Skyhawk
Plum Creek Blvd

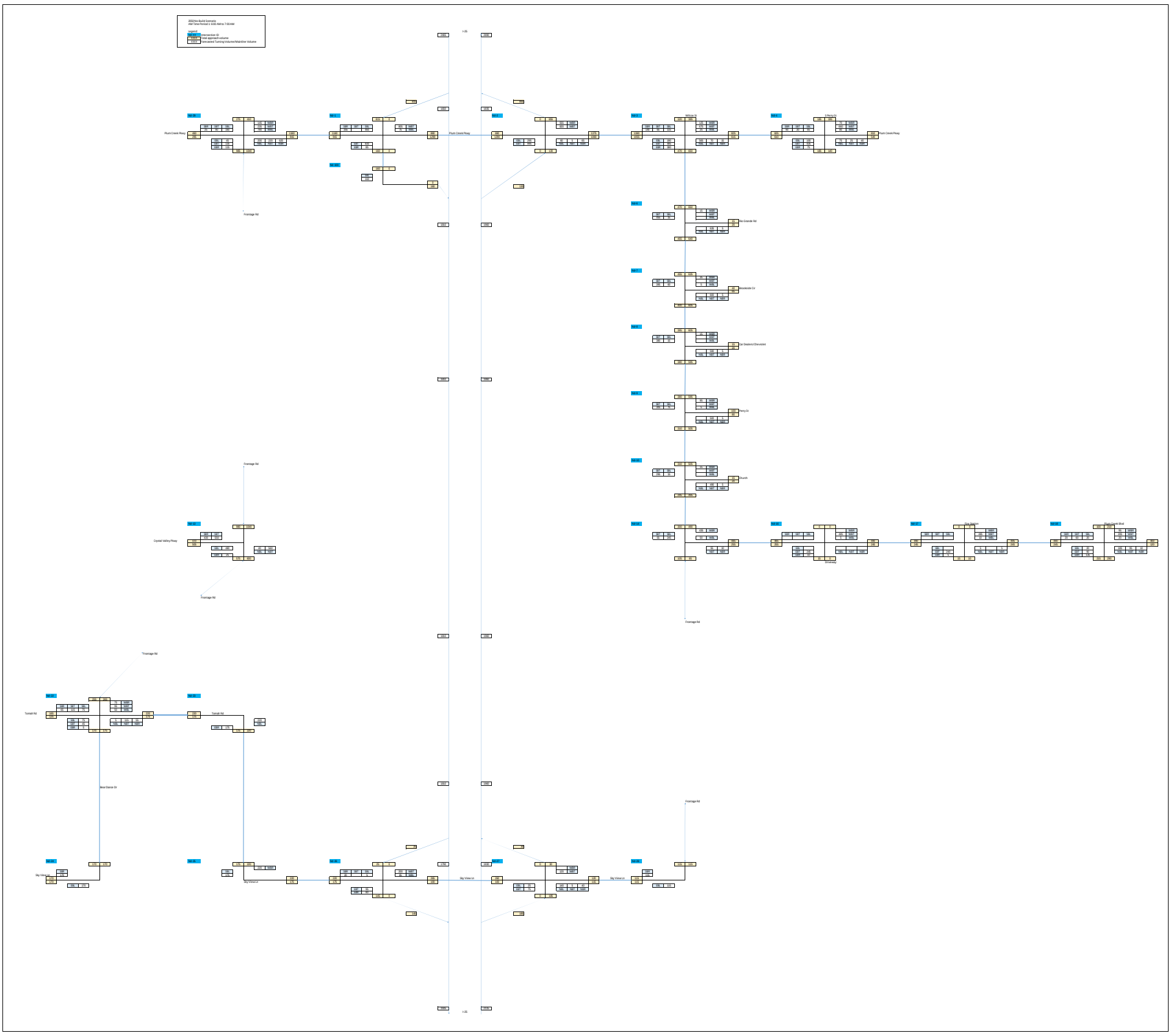

2035 Build Scenario
PM Time Period 2: 3:00 PM to 4:00 PM
Legend
Int. ID: Intersection ID
XXXX: Total approach volume
XXXX: Allocated Turning Volume/Mainline Volume
I-25
Plum Creek Pkwy
Wilcox St
E Plum Cr
Rio Grande Rd
Brookside Cir
Car Dealers/Chevrolet
Perry St
Church
Development
Crystal Valley Pkwy
Fire Station
Driveway
Frontage Rd
Tomah Rd
Bear Dance Dr
Sky View Ln

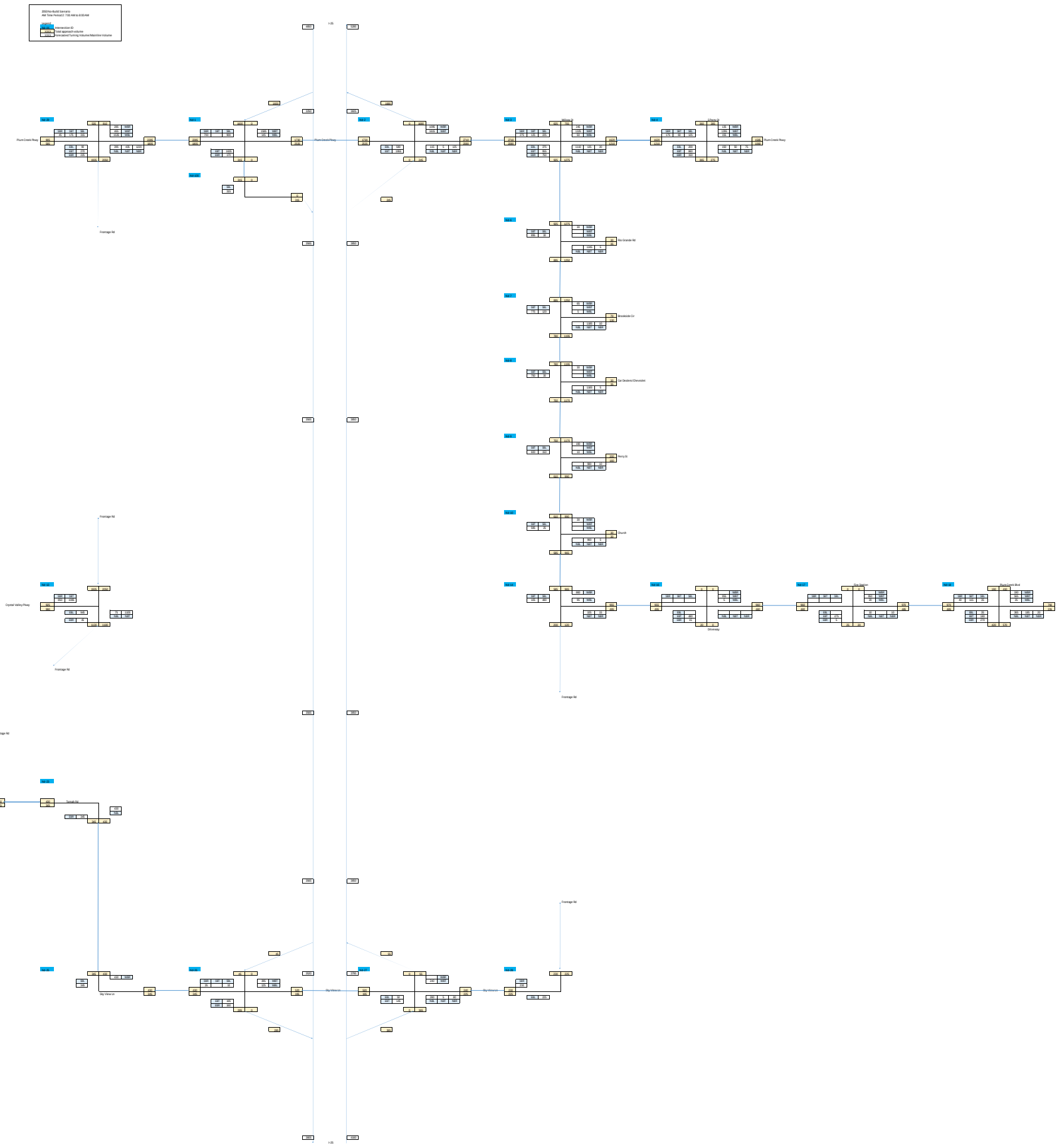

2035 Build Scenario
PM Time Period 2: 4:00 PM to 5:00 PM
Legend
XX Intersection ID
XXXX Total approach volume
XXXX Estimated Turning Volume/Maximize Volume
I-25
Plum Creek Pkwy
Frontage Rd
Willow St
S Perry St
Rio Grande Rd
Brookside Cir
Car Dealers/Chevrolet
Perry St
Church
Development
Crystal Valley Pkwy
Fire Station
Plum Creek Blvd
Driveway
Tomah Rd
Bear Dance Dr
Sky View Ln

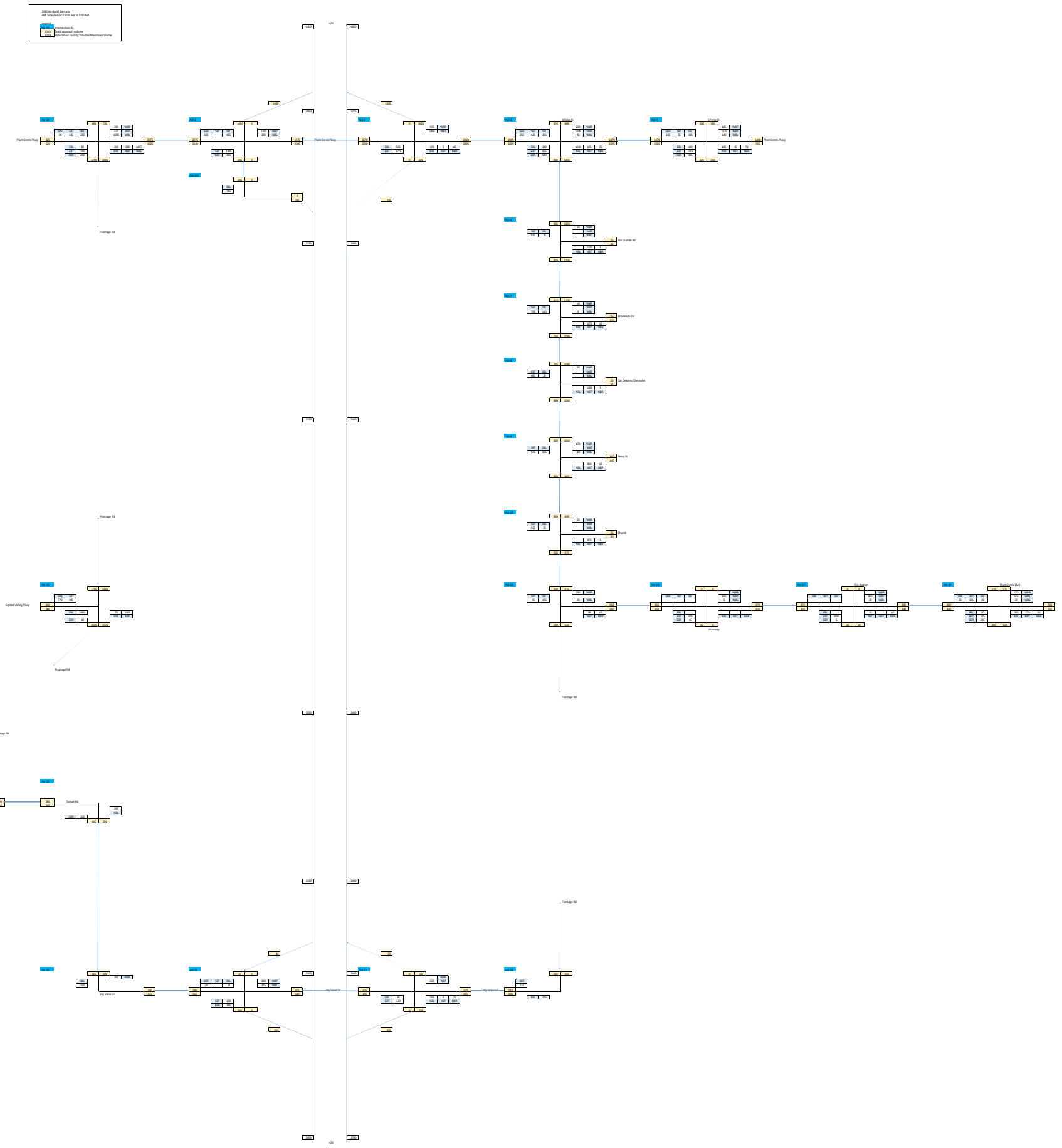

2035 Build Scenario
PM Time Period (1:500 PM to 6:00 PM)
Legend
XX Intersection ID
XXXX Total approach volume
XXXX Estimated Turning Volume/Maximize Volume
I-25
Plum Creek Pkwy
Willow St
S Perry St
Rio Grande Rd
Brookside Cir
Car Dealers/Chevrolet
Perry St
Church
Development
Crystal Valley Pkwy
Fire Station
Plum Creek Blvd
Driveway
Frontage Rd
Tomah Rd
Bear Dance Dr
Sky Vista Ln

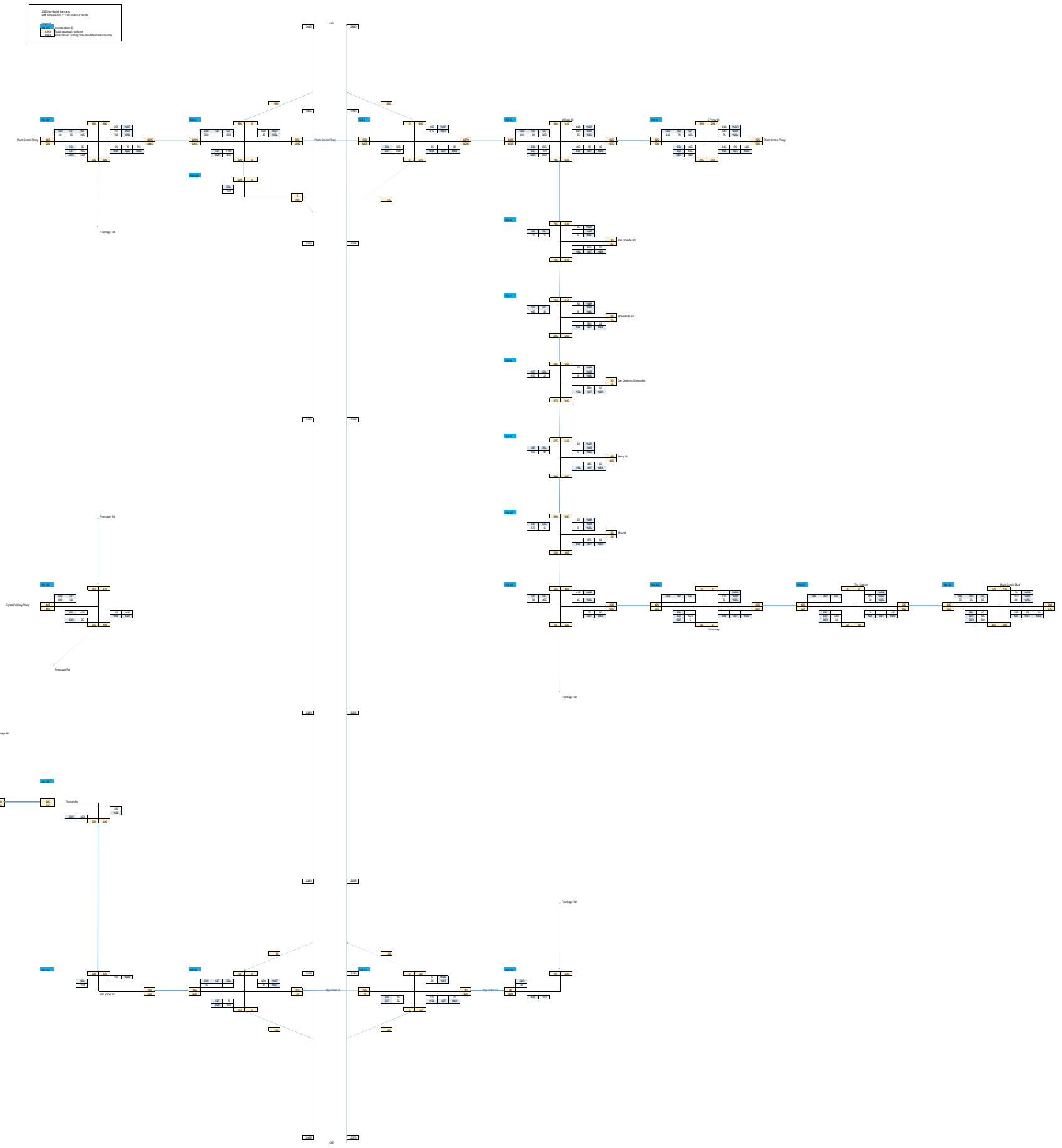

2025* Build Scenarios Comparison
Orange -> 2025 Build Scenario
Black -> 2025 Build Scenario with west Frontage Rd from
Plum Creek Pkwy to Yucca Hills Rd
####/#### -> Directional ADT (Average Daily Traffic)
dashed lines -> Centroid Connectors
2025* -> 2023 TransCAD Outputs

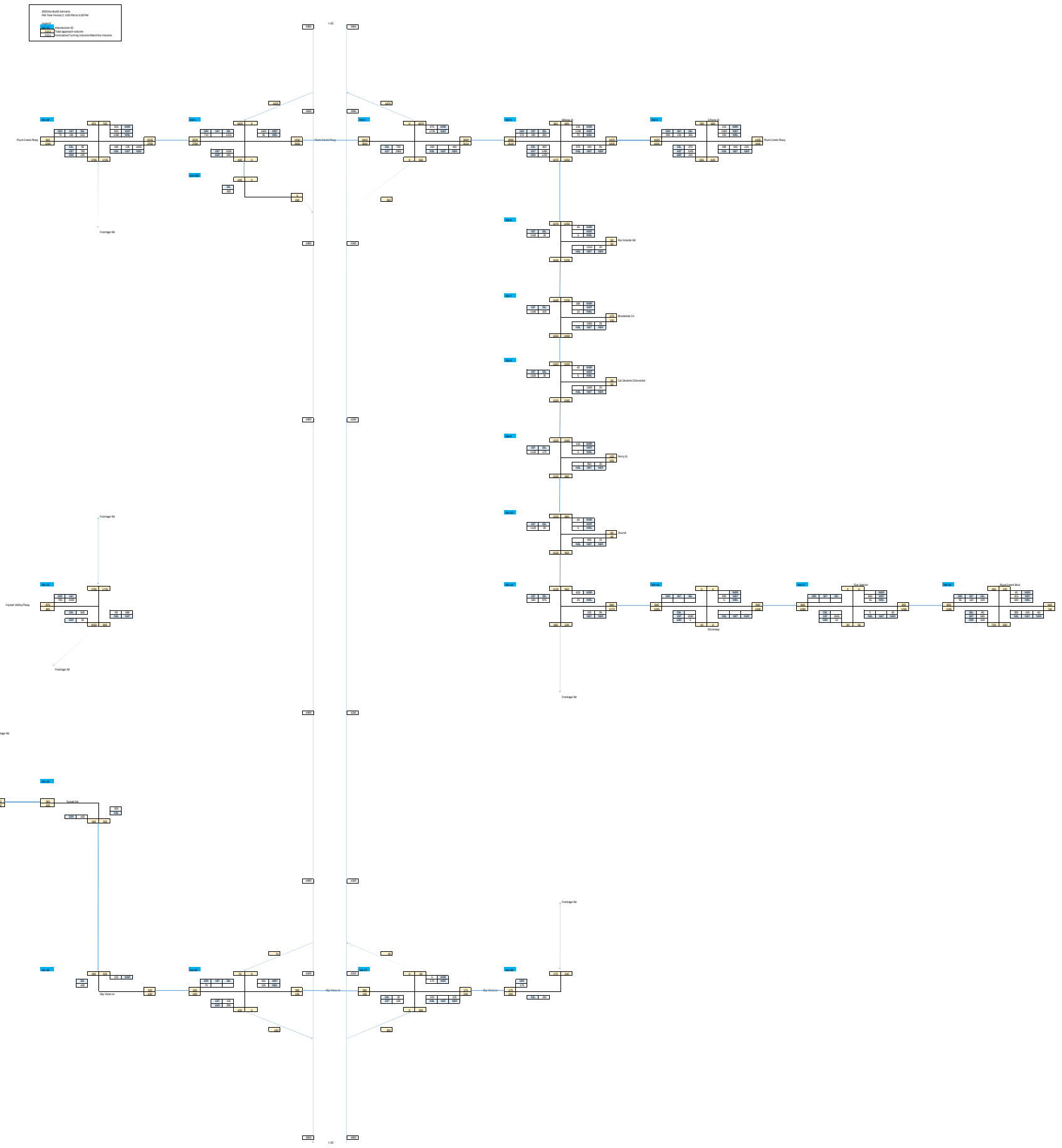
01/13/2022

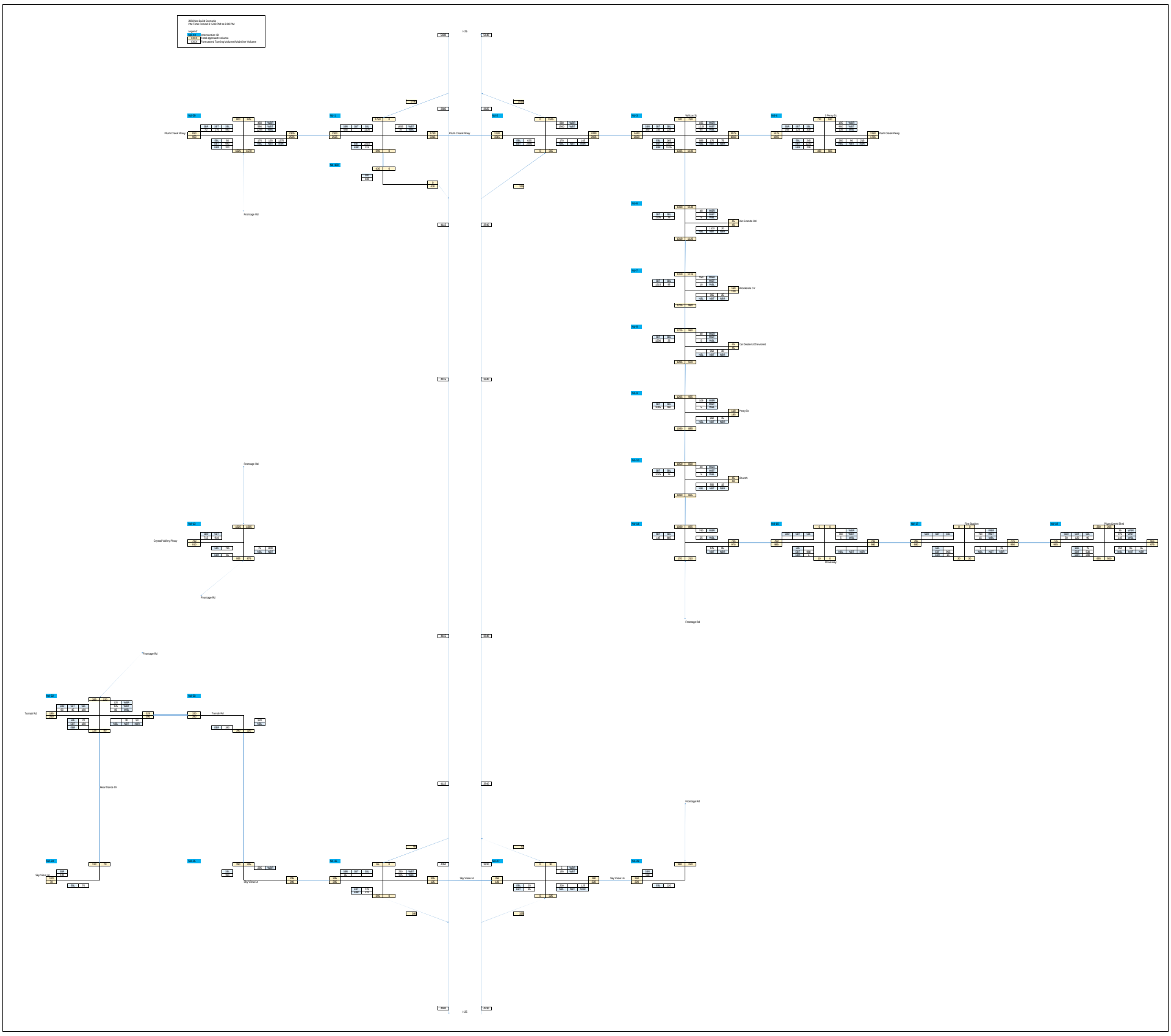

2050 No-Build Scenario
AM Time Period 1: 6:00 AM to 7:00 AM
Legend
Node ID
Intersection ID
Total approach volume
Intersected Turning Volumes/Mainline Volume
I-25
Frontage Rd
Plum Creek Pkwy
Wilcox Ln
Cheryl Ln
Rio Grande Rd
Residential Cir
Car Dealers/Chevrolet
Perry St
Fourth
Crystal Valley Pkwy
Gas Station
Plum Creek Blvd
Driveway
Tomah Rd
Silver Dollar Dr
Sky View Ln

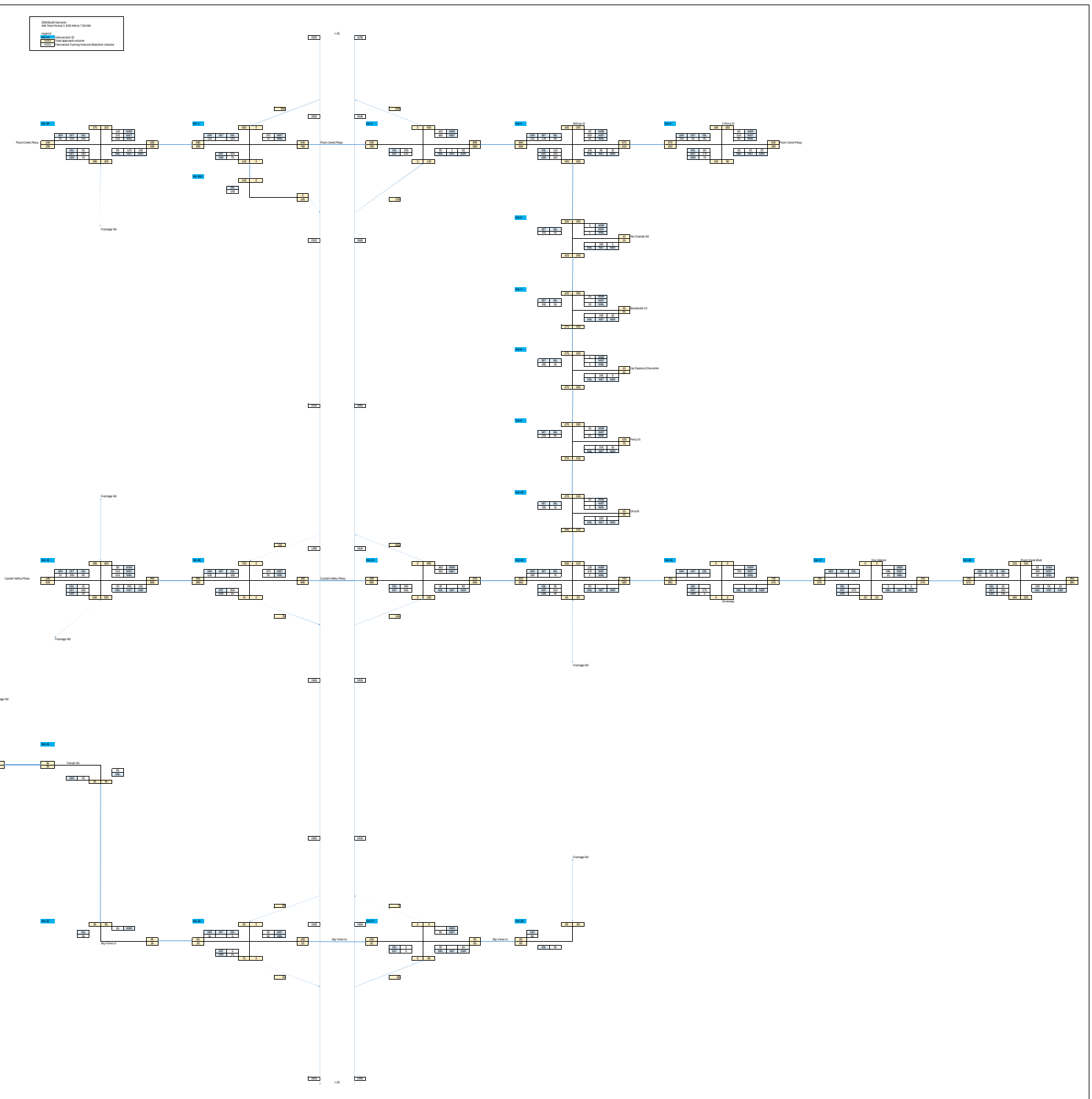

2050No-Build Scenario
AM Time Period:2: 7:00 AM to 8:00 AM
Legend
XX Intersection ID
XXXX Total approach volume
XXXX Estimated Turning Volume/Maximize Volume
I-25
Plum Creek Pkwy
Frontage Rd
Willow St
S Perry St
Rio Grande Rd
Brookside Cir
Car Dealers/Chevrolet
Perry St
Church
Fire Station
Plum Creek Blvd
Crystal Valley Pkwy
Tomah Rd
Bear Dance Dr
Sky View Ln
Driveway

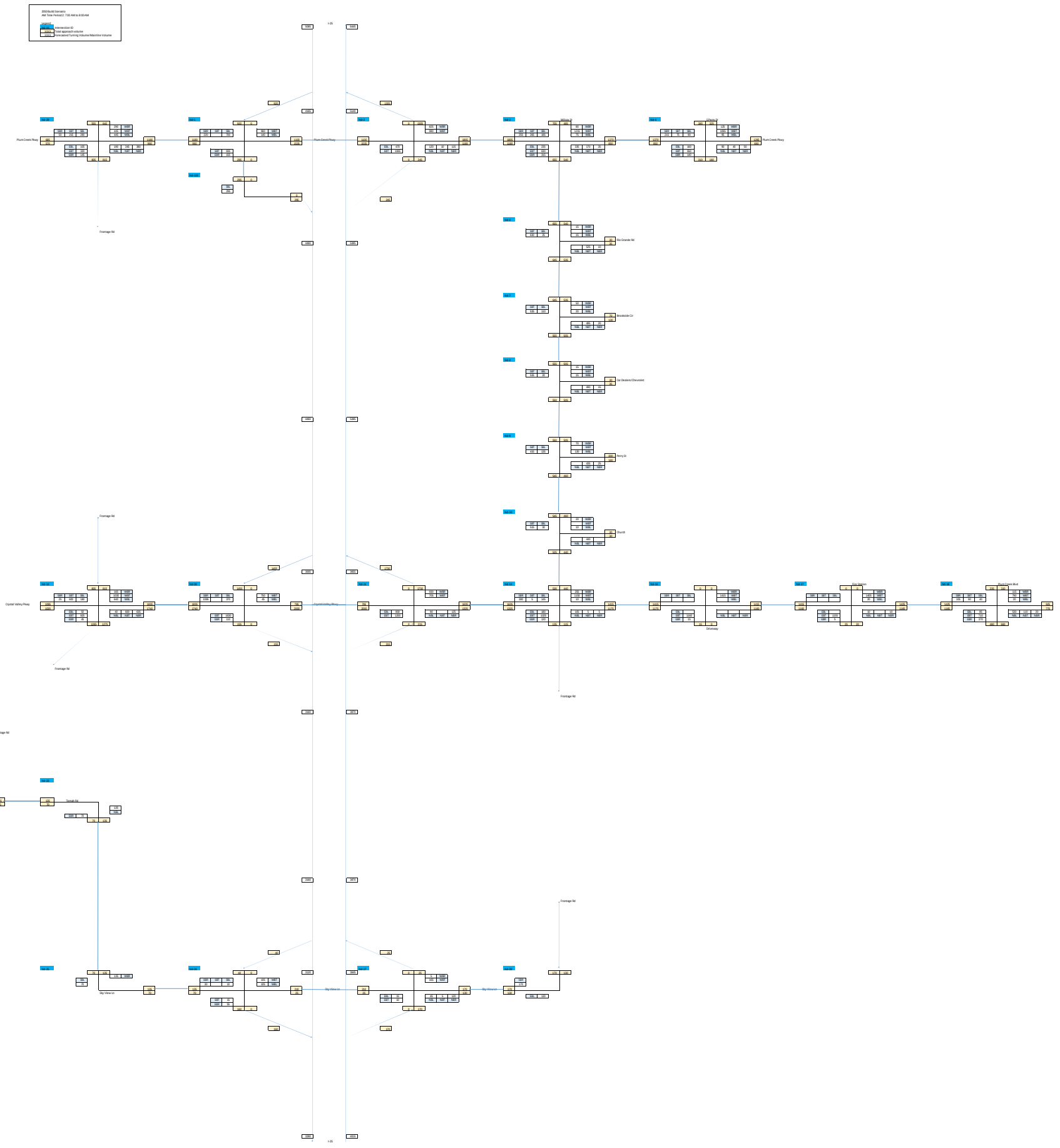

2050 No-Build Scenario
AM Time Period (7: 8:00 AM to 9:00 AM
Legend
XX Intersection ID
XXXX Total approach volume
XXXX Estimated Turning Volume/Maximize Volume
I-25
Plum Creek Pkwy
Frontage Rd
Willow St
S Perry St
Rio Grande Rd
Brookside Cir
Car Dealers/Chevrolet
Perry St
Church
Fire Station
Plum Creek Blvd
Driveway
Crystal Valley Pkwy
Tomah Rd
Bear Dance Dr
Sky View Ln

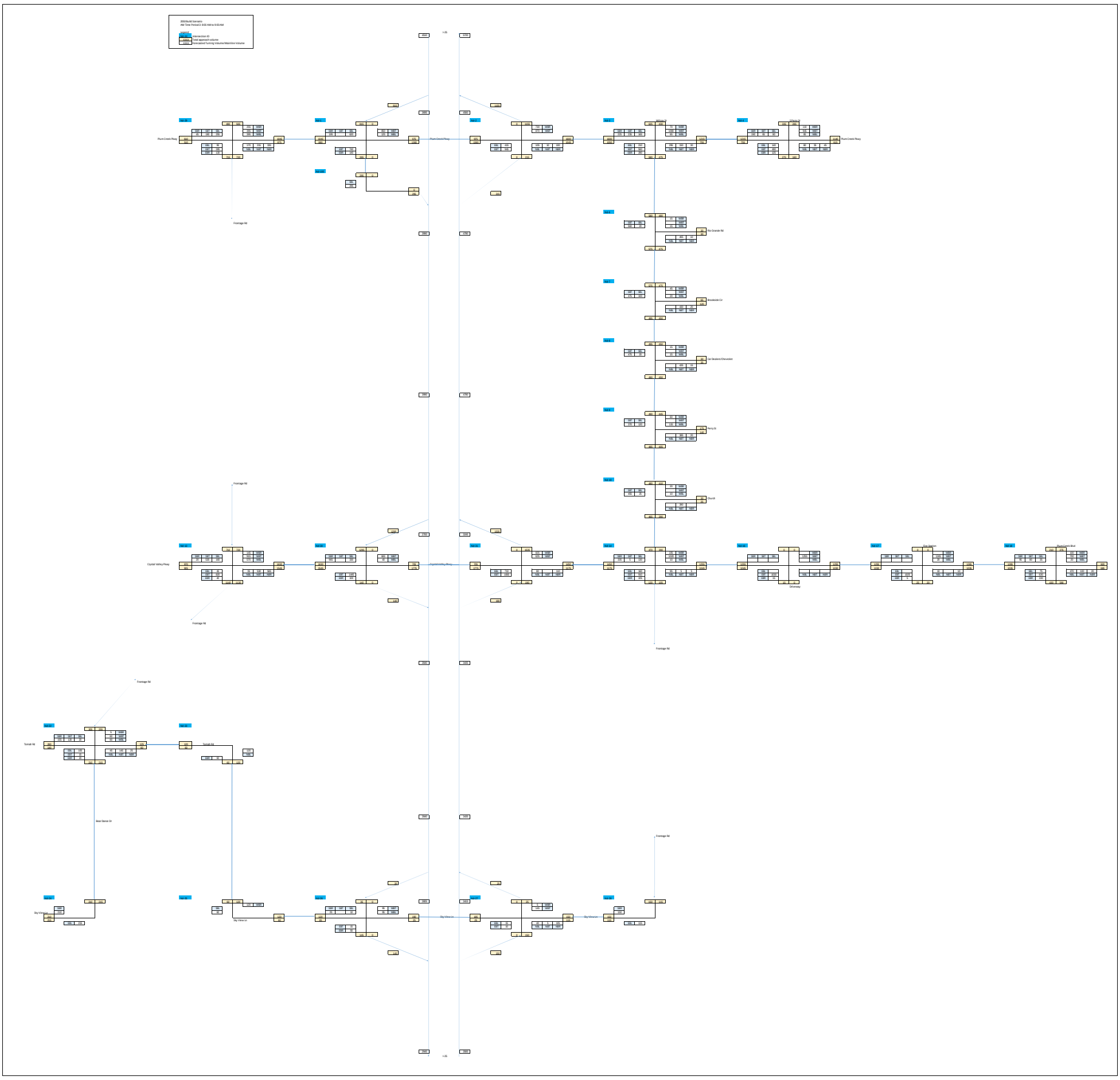

2050No-Build Scenario
PM Time Period 2: 3:00 PM to 4:00 PM
Legend
Intersection ID
Total approach volume
Estimated Turning Volume/Maximum Volume
I-25
Frontage Rd
Plum Creek Pkwy
Willow St
S Perry St
Rio Grande Rd
Brookside Cir
Car Dealers/Chevrolet
Perry St
Church
Fire Station
Plum Creek Blvd
Driveway
Crystal Valley Pkwy
Tomah Rd
Bear Dance Dr
Sky View Ln


2050No-Build Scenario
PM Time Period 2: 4:00 PM to 5:00 PM
Legend
Intersection ID
Total approach volume
Estimated Turning Volume/Maximum Volume
I-25
Plum Creek Pkwy
Frontage Rd
Willow St
S Perry St
Rio Grande Rd
Brookside Cir
Car Dealers/Chevrolet
Perry St
Church
Fire Station
Plum Creek Blvd
Driveway
Crystal Valley Pkwy
Tomah Rd
Bear Dance Dr
Sky View Ln

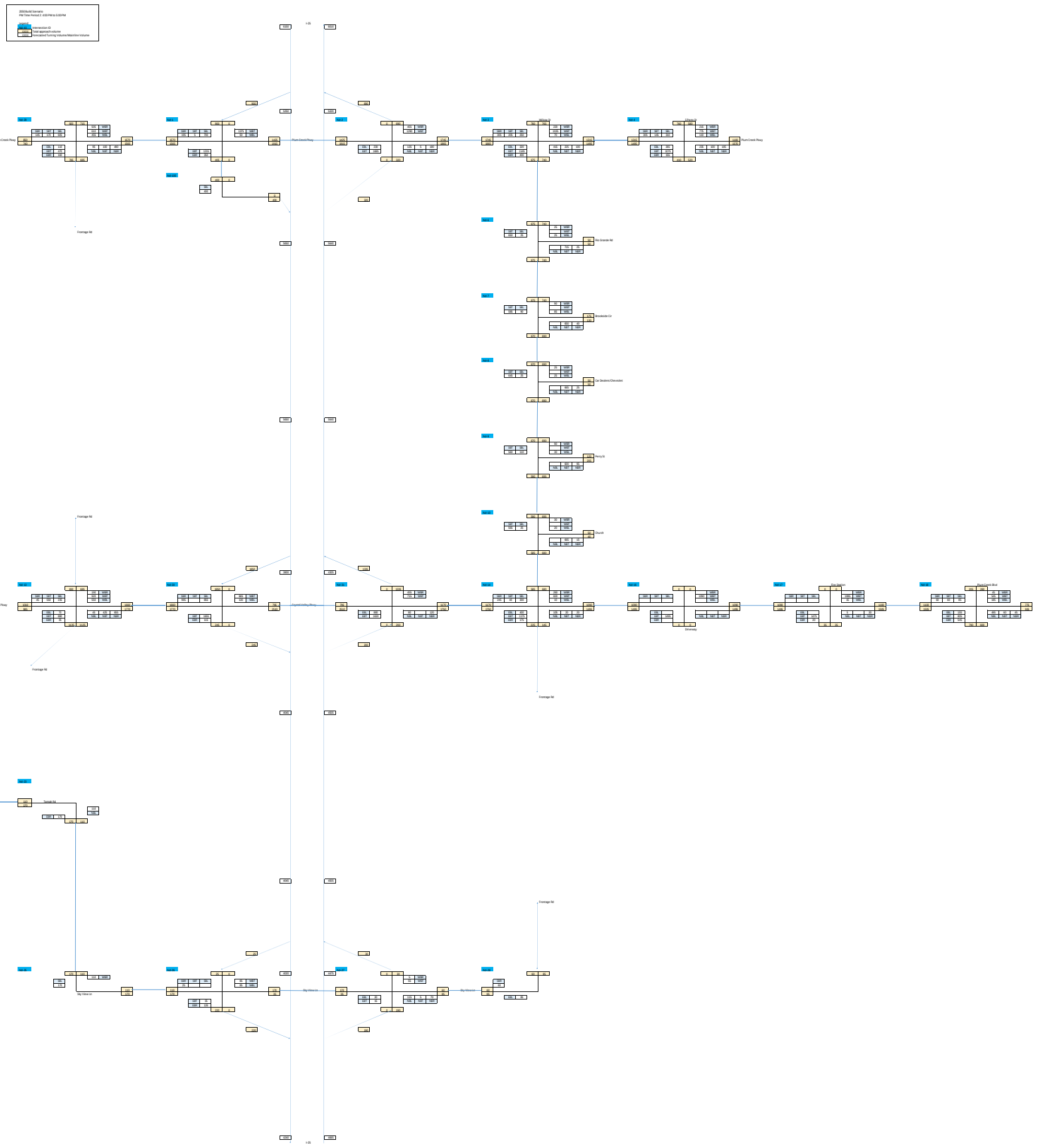

2050 No-Build Scenario
PM Time Period: 3: 3:00 PM to 6:00 PM
Legend
Node ID
Intersection ID
Total approach volume
Intersected Turning Volumes/Mainline Volume
I-25
Frontage Rd
Plum Creek Pkwy
Wilcox Ln
Cheryl Ln
Rio Grande Rd
Rockledale Cir
Jet Dealers\Chevrolet
Perry St
Fourth
Crystal Valley Pkwy
Gas Station
Plum Creek Blvd
Driveway
Tomah Rd
Silver Dancer Dr
Sky View Ln

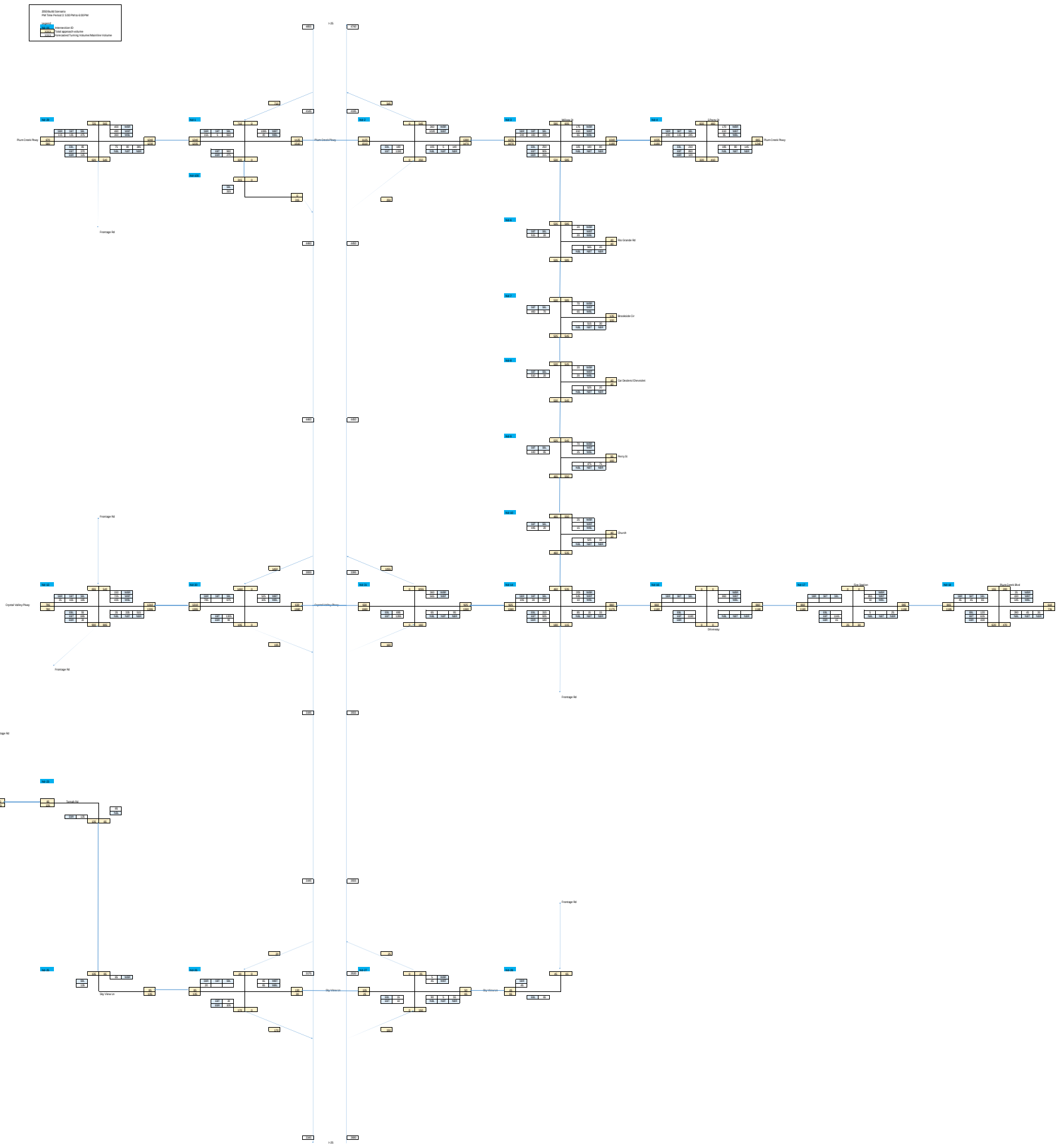

2030 Build Scenario
AM Time Period: 6:00 AM to 7:00 AM
Legend
Node ID
Intersection ID
Total approach volume
Intersected Turning Volumes/Mainline Volume
I-25
Plum Creek Pkwy
Frontage Rd
Wilcox Ln
Cheryl Ln
Rio Grande Rd
Brookeside Cir
Ken Dealers Chevrolet
Perry St
Fourth
Crystal Valley Pkwy
Gas Station
Plum Creek Blvd
Kimmey
Tomah Rd
Silver Dancer Dr
Sky View Ln


2050/Build Scenario
AM Time Period:7: 7:00 AM to 8:00 AM
Legend
XX Intersection ID
XXXX Total approach volume
XXXX Estimated Turning Volume/Maximize Volume
I-25
Plum Creek Pkwy
Frontage Rd
Willow St
S Perry St
Rio Grande Rd
Brookside Cir
Car Dealers/Chevrolet
Perry St
Church
Crystal Valley Pkwy
Fire Station
Plum Creek Blvd
Driveway
Tomah Rd
Bear Dance Dr
Sky View Ln


2050/Build Scenario
AM Time Period:7: 8:00 AM to 9:00 AM
Legend
XX Intersection ID
XXXX Total approach volume
XXXX Estimated Turning Volume/Maximize Volume
I-25
Plum Creek Pkwy
Frontage Rd
Willow St
S Perry St
Rio Grande Rd
Brookside Cir
Car Dealers/Chevrolet
Perry St
Church
Crystal Valley Pkwy
Fire Station
Plum Creek Blvd
Driveway
Tomah Rd
Bear Dance Dr
Sky View Ln


2030 Build Scenario
PM Time Period: 3:30 PM to 4:00 PM
Legend
Intersection ID
Total approach volume
Intersected Turning Volumes/Mainline Volume
I-25
Plum Creek Pkwy
Frontage Rd
Wilcox Ln
Cheryl Ln
Rio Grande Rd
Rockledale Cir
Del Dealers/Chevrolet
Perry St
Fourth
Crystal Valley Pkwy
Gas Station
Plum Creek Blvd
Driveway
Tomah Rd
Silver Dancer Dr
Sky View Ln


2050/Build Scenario
PM Time Period 2: 4:00 PM to 5:00 PM
Legend
XX Intersection ID
XXXX Total approach volume
XXXX Estimated Turning Volume/Maximize Volume
I-25
Plum Creek Pkwy
Frontage Rd
Willow St
S Perry St
Rio Grande Rd
Brookside Cir
Car Dealers/Chevrolet
Perry St
Church
Crystal Valley Pkwy
Fire Station
Plum Creek Blvd
Driveway
Tomah Rd
Bear Dance Dr
Sky View Ln


2050/Build Scenario
PM Time Period 2: 5:00 PM to 6:00 PM
Legend
XX Intersection ID
XXXX Total approach volume
XXXX Estimated Turning Volume/Maximize Volume
I-25
Plum Creek Pkwy
Frontage Rd
Rio Grande Rd
Brookside Cir
Car Dealers/Chevrolet
Perry St
Church
Crystal Valley Pkwy
Fire Station
Plum Creek Blvd
Driveway
Tomah Rd
Bear Dance Dr
Sky View Ln

2050 Build Scenarios Comparison

Orange *-> 2050 Build Scenario*
Black *-> 2050 Build Scenario without west Frontage Rd from Plum Creek Pkwy to Yucca Hills Rd*
####/#### *-> Directional ADT (Average Daily Traffic)*
dashed lines *-> Centroid Connectors*

01/13/2022

Damian Cox

From: Lawrence Jacobson <ljacobson@westsideinv.com>
Sent: Monday, June 19, 2023 5:09 PM
To: Damian Cox; Jake Schroeder
Cc: dennying58@gmail.com; dan@quietpath.com
Subject: RE: Traffic Study

Damian – according to Fox Tuttle, the 1% increase results in +/- 175 VPD (vehicles per day).

Let me know if you have any questions. Happy to assist.

Lawrence P. Jacobson
Principal
Westside Investment Partners, Inc.
4100 East Mississippi Avenue - Suite 500
Denver, CO 80246
p (303) 984-9800 c (303) 748-5466
ljacobson@westsideinv.com

From: Damian Cox <damian@coxrelaw.com>
Sent: Friday, June 16, 2023 1:29 PM
To: Lawrence Jacobson <ljacobson@westsideinv.com>; Jake Schroeder <JSchroeder@westsideinv.com>
Cc: dennying58@gmail.com; dan@quietpath.com
Subject: Traffic Study

Hi Larry and Jake.

I have been reviewing the traffic study regarding FoxTuttle's expectation of traffic on our roads. The traffic study is very comprehensive and is rightfully more focused on other aspects of the project. The only parts of the study I can find that speaks to the amount of traffic generated on Twin Oaks Road are Table 8 (page 31) and the site trip distribution (page 66). Both indicate that the amount of traffic generated will be less than 1%. While our opposition has seized on this to say the increase would be insignificant, they are misreading this as it is 1% of the 87,000 trips per day generated through Dawson Trails which would be significant for an area with only 370 trips a day currently.

That said, without knowing the exact %, I have no idea if it is 200 cars a day increase or 800 cars a day increase and I cannot find anything in here that gives numbers instead of whole %s. Obviously, it could be in here somewhere and I missed it in the 904 pages of fun.

Would you be ok with me contacting FoxTuttle to ask them the exact % they expect (i.e: is it .5% or is it .9%)? OR if you know they won't have that I won't waste their time.

If you do not want me to contact them, I completely understand.

Thank you.

Damian Cox, Esq.

April 4, 2024

Damian Cox
718 Wilcox Street, A
Castle Rock, CO 80104

RE: Proposed Twin Mesa Metropolitan District

Dear Mr. Cox:

I was asked to review the new proposed budget for the Twin Mesa Metropolitan District ("Twin Mesa District") that has been submitted to the County for approval as part of the proposed Service Plan. As the Assistant Director for Operations of the Douglas County Public Works Department, I am responsible for the maintenance of County roads. As such, I am very knowledgeable about roads and their maintenance and am comfortable offering this opinion.

The new proposed Twin Mesa Service Plan shows that the Twin Mesa District, if approved, would own approximately 600 ft of road on Twin Oaks Road and Clarke's Circle for purposes of erecting a traffic control gate on Twin Oaks Road and taking over maintenance for an emergency vehicle only gate on Clarke's Circle. The proposed Service Plan states that the Twin Mesa District would enter into an Intergovernmental Agreement ("IGA") with the County for the maintenance and snow removal on this approximately 600 feet of gravel road for $1,500. As the Assistant Director for Operations, I would be included in the recommendation to approve such an agreement. As we have previously discussed, I would be willing to recommend approving this IGA.

Additionally, we have discussed that the Dawson Trails traffic study shows that the route of Twin Oaks Road to Peak View Drive currently has about 370 trips a day. As we discussed, when a road hits 300 trips per day, it starts to become more economical for the County to pave the road instead of maintaining it as a gravel road. This route is eligible for paving under the County's high priority gravel road paving program. In fact, it was on the list of roads that the County was considering paving last year until it was removed until decisions related to the possible formation of the metropolitan district could be finalized.

My above opinion is based on my experience, the current market costs and the County's current policies.

Sincerely,

Daniel Roberts

Daniel R. Roberts, P.E.
Assistant Director – Operations
Douglas County Public Works

From: Damian Cox
To: Lauren Pulver
Cc: Michael Davis (michael@mdavislawoffice.com)
Subject: Contacting County Entities
Date: Monday, April 8, 2024 2:18:30 PM

HI Lauren.

In the Staff Report, Engineering recommends that we contact the appropriate Fire Districts, school District and Sherriff's Office about our proposal. Here are our comments:

1. Castle Rock Fire did provide a comment regarding Knox Locks and the Service Plan was updated accordingly.
2. During last year's proposal we did attempt to contact these entities, but they are very difficult to speak with.
3. All of these entities have now been provided a referral twice with no response
4. Lastly, but most importantly, our proposal would not affect the access by any of these entities. If they are emergency vehicles (fire and sheriff) they will have unfettered access via the Knox locks. Although the school district does not currently have routes through our neighborhoods, they would also be provided either an RFID chip or access code if desired.

As stated several times in the Service Plan and to staff, we have no desire to limit these services in any way.

Thank you.

Damian Cox, Esq.
Cox Law Firm, LLC
718 Wilcox Street
Castle Rock, CO 80104
damian@coxrelaw.com
w) (303) 688-1550

NOTICE:
The information contained in this electronic mail message may be attorney privileged or attorney work product, and may be confidential information intended only for the use of the individual or entity named above. If you are not the intended recipient for delivery, you are hereby notified that any dissemination, distribution, or copying of this communication, and any review, dissemination, distribution, or copying of the accompanying materials is strictly prohibited. If you have received this communication in error, please delete it and immediately notify us by telephone at (303) 688-1550 or electronic mail by replying to this message.

From: Sara Lewis
To: Lauren Pulver
Subject: Request of BOCC Exclusion from TMMD 5th revision (Special District)
Date: Thursday, April 4, 2024 3:45:53 PM

To the Board of County Commissioners of Douglas County

Messrs. George Teal. Abe Laydon

Mrs. Lora Thomas

Re: SV2023-003 5th Revision

Honorable Commissioners:

When I asked the question of DC Staff, "How is it that my property, 1248 S Mountain View Rd, Lot 19, is hijacked in a Metro District proposal from which I feel "no need for" and/or, I receive NO benefit?" The staff person referenced me to the C.R.S. Section 32-1-203(3.5)(a)the Board may exclude territory from a proposed special district prior to approval of the Service plan. I am petitioning the Honorable Commissioners to exclude me from TMMD Special District.

The petitioners, Damian Cox, etal. have included the residents in Castle Mesa West, Castle Mesa South, and Castle Mesa and many in Twin Oaks to justify the financial wherewithal to support a special district for mitigating traffic on gravel roads. Their claims and anticipation of cut-through traffic and excessive speeding and non-residential traffic is guesswork and supposition. Again their proposal to erect traffic gates on Twin Oaks Road to mitigate the anticipated problem is premature by two (2) years, at least.

The County has the option of transferring vacated roads to an HOA as

well as a Metro District as was stated in the Pre-submittal Review, dated March 2,2023, with respect to Road Vacation Resolution states that ... "the road vacation would allow new ownership to be assigned via the Vacation Resolution. There must be an entity in place, Title 32 Metropolitan District **or** Homeowner's Association." The revised service plan being submitted requests a road vacation of 600 feet of Twin Oaks Road. Twin Oaks HOA (incorporated in 1979) could be the "entity of ownership obviating the need for a Metro District and the attendant costs and complications.

Respectfully submitted,

Sally Lewis

1248 S Mountain View Rd

Castle Rock, CO 80109

303-688-0222 H

303-669-8485 C

RECEIVED
APR - 5 2024
Douglas County Planning

To the Board of County Commissioners of Douglas County
Messrs. George Teal. Abe Laydon, and Mrs. Lora Thomas

Eric Pavlinek and Lauren Pulver
Re: SV2023-003 4th Revision

Dear Eric, Lauren, and Board of County Commissioners,

After spending time reviewing the,4th Revision TMMD Service Plan proposing creation of a Special District over my neighborhood (Castle Mesa West) in which I reside, I am unable find any evidence that the petitioners are in compliance with Colorado Statutes which apply to the creation of Special Districts, namely *Title 32 Metropolitan Districts.*

CRS §32-1-203(2) states: " The board of county commissioners **shall disapprove** the service plan **unless** evidence satisfactory to the board of each of the following is presented:

- **(a) There is sufficient existing and projected need for organized service in the area to be serviced by the proposed special district. . . .**

No where in the Service Plan have the petitioners proved an existing or projected NEED for gate and road vacation. (only desire).

- **(b)** The petitioners' claims are unsubstantiated by objective data and are speculation. Additionally, the time frame is of such an uncertain nature that petitioners' have written into the service plan a clause to dissolve the Special District.

CRS §32-1-203 (2.5) states: "The board of county commissioners **may disapprove** the service plan if evidence satisfactory to the board of any of the following, at the discretion of the board, is not presented:

- **(e) The creation of the proposed special district will be in the best interests of the area proposed to be served.**

The establishment of a special district is **not** in the best interests of the residents of Castle Mesa and Twin Oaks. In fact, it will impose an additional taxing authority that is not in existence now and will impose an economic hardship on residents who are on a fixed income and are adjusting to a significant increase in property taxes that occurred in 2023.

I urge you to deny the application of the proposed Twin Mesa Metro District 4th Revision for these reasons

- that the application does not meet standards outlined in the statutes of *Title 32 Metropolitan Districts*.
- We do not have non-residential traffic of a concerning nature
- Existing police powers can be used to control traffic if it should be come a problem sometime in the future.

Respectfully submitted,

Carlie Block

Carlie Block

To the Board of County Commissioners of Douglas County
Messrs. George Teal. Abe Laydon, and Mrs. Lora Thomas

Eric Pavlinek and Lauren Pulver
Re: SV2023-003 4th Revision

Dear Eric, Lauren, and Board of County Commissioners,

After spending time reviewing the,4th Revision TMMD Service Plan proposing creation of a Special District over my neighborhood (Castle Mesa West) in which I reside, I am unable find any evidence that the petitioners are in compliance with Colorado Statutes which apply to the creation of Special Districts, namely *Title 32 Metropolitan Districts.*

CRS §32-1-203(2) states: " The board of county commissioners **shall disapprove** the service plan **unless** evidence satisfactory to the board of each of the following is presented:

- **(a) There is sufficient existing and projected need for organized service in the area to be serviced by the proposed special district. . . .**

No where in the Service Plan have the petitioners proved an existing or projected NEED for gate and road vacation. (only desire).

- **(b)** The petitioners' claims are unsubstantiated by objective data and are speculation. Additionally, the time frame is of such an uncertain nature that petitioners' have written into the service plan a clause to dissolve the Special District.

CRS §32-1-203 (2.5) states: "The board of county commissioners **may disapprove** the service plan if evidence satisfactory to the board of any of the following, at the discretion of the board, is not presented:

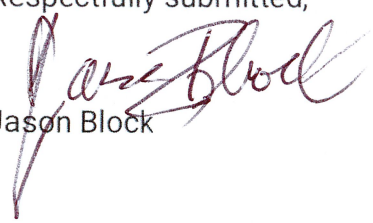
- **(e) The creation of the proposed special district will be in the best interests of the area proposed to be served.**

The establishment of a special district is **not** in the best interests of the residents of Castle Mesa and Twin Oaks. In fact, it will impose an additional taxing authority that is not in existence now and will impose an economic hardship on residents who are on a fixed income and are adjusting to a significant increase in property taxes that occurred in 2023.

I urge you to deny the application of the proposed Twin Mesa Metro District 4th Revision for these reasons

- that the application does not meet standards outlined in the statutes of *Title 32 Metropolitan Districts*.
- We do not have non-residential traffic of a concerning nature
- Existing police powers can be used to control traffic if it should be come a problem sometime in the future.

Respectfully submitted,



Jason Block

To the Board of County Commissioners of Douglas County
Messrs. George Teal. Abe Laydon, and Mrs. Lora Thomas

Eric Pavlinek and Lauren Pulver
Re: SV2023-003 4th Revision

Dear Eric, Lauren, and Board of County Commissioners,

After spending time reviewing the,4th Revision TMMD Service Plan proposing creation of a Special District over my neighborhood (Castle Mesa West) in which I reside, I am unable find any evidence that the petitioners are in compliance with Colorado Statutes which apply to the creation of Special Districts, namely *Title 32 Metropolitan Districts.*

CRS §32-1-203(2) states: " The board of county commissioners **shall disapprove** the service plan **unless** evidence satisfactory to the board of each of the following is presented:

- **(a) There is sufficient existing and projected need for organized service in the area to be serviced by the proposed special district. . . .**

No where in the Service Plan have the petitioners proved an existing or projected NEED for gate and road vacation. (only desire).

- **(b)** The petitioners' claims are unsubstantiated by objective data and are speculation. Additionally, the time frame is of such an uncertain nature that petitioners' have written into the service plan a clause to dissolve the Special District.

CRS §32-1-203 (2.5) states: "The board of county commissioners **may disapprove** the service plan if evidence satisfactory to the board of any of the following, at the discretion of the board, is not presented:

- **(e) The creation of the proposed special district will be in the best interests of the area proposed to be served.**

The establishment of a special district is **not** in the best interests of the residents of Castle Mesa and Twin Oaks. In fact, it will impose an additional taxing authority that is not in existence now and will impose an economic hardship on residents who are on a fixed income and are adjusting to a significant increase in property taxes that occurred in 2023.

I urge you to deny the application of the proposed Twin Mesa Metro District 4th Revision for these reasons

- that the application does not meet standards outlined in the statutes of *Title 32 Metropolitan Districts*.
- We do not have non-residential traffic of a concerning nature
- Existing police powers can be used to control traffic if it should be come a problem sometime in the future.

Respectfully submitted,

Amy Block

Amy Block

From: dawn thomason
To: Lauren Pulver
Subject: Opposition to latest revision of the Twin Mesa Metro Disstrict
Date: Saturday, April 6, 2024 7:46:34 AM

Please keep this on record, and also forward to the Planning Commission:

4/6/2024

I am a resident of Twin Oaks in unincorporated Douglas County, and am still in opposition to the updated revision of the Twin Mesa Metro District.

I understand a meeting regarding this issue will be held 4/15, but only from correspondence forwarded to me by Sally Lewis, not from any information I have received from the Twin Oaks HOA.

I remain in opposition to this latest plan, and for the same reasons as the earlier plans. I do not feel that there is demonstrated NEED for a gate and the encumbrances that go along with it, both for the gate, the ensuing road issues, and the cost. I have attended all the meetings I have been able to, and asked members of our HOA Board why a gate was not discussed immediately with the developer, along with all the other requests that we've submitted, and have not received any kind of answer. I was only told that the Board was able to get some accommodations (like additional landscaping).

As of this time, I feel there is no NEED to take a further step to develop the Twin Mesa Metro District.

Dawn Thomason

Name: Angie Edsall Date: 3/23/2024

Address: 1649 S Peak View Dr., Castle Rock, CO. 80109

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Angie Edsall

Matt Thomson

1466 OBrien Way
Castle Rock, CO 80109

4/3/2024

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I'm giving the stock letter with real facts, and PLEASE read below where I put my own thoughts.

I am a resident of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Yes, this is a stock letter that you've received from many people. Please let me add the following. I have 2 teenage daughters that ride their horses through the neighborhood on a weekly basis, most often with 2-5 other teenage girls that live in the neighborhood and ride with them. While mostly riding on the trails around the properties, there are 3 places that they MUST cross the dirt county road. People already speed on these roads, and adding more people unaware of how to drive around horses will make this extremely dangerous.

I understand there are neighbors who oppose this, and I'm ok with that. They get their opinion just as I get mine. But to oppose the Metro District on the basis of "no new traffic" will come through our neighborhood is absolutely ridiculous. Please explain to me any scenario that you envision from your professional view how we can add 5000 homes, a Costco, and other development and not increase traffic. With the now seemingly weekly fuel truck spills on I 25, is there any chance, even a small chance, that with the Crystal Valley Interchange that people won't exit there and drive through our neighborhood?

NOBODY in our neighborhood wants a Metro District. Nobody I know wants more taxes. And it is the ONLY way we can stop traffic in our neighborhood. I've heard neighbors say we can do it with our HOA. The county has told us that's not an option, and I don't know of any HOA that is allowed to gate a county road.

PLEASE consider the relatively low cost, low maintenance option we are proposing to provide safety for our kids and our animals. Horses, llamas, donkeys, goats, cows, dogs...they all escape from time to time despite our best efforts. We can't afford to have more traffic, faster traffic, in our neighborhood around our kids and animals.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,



Name: Kimber Thomson Date: 3-6-24

Address & Lot Number: 1446 O'Brien Way * lot 24

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Kimber Thomson

Name: Gail Headley Date: 3/6/2024

Address & Lot Number: 1316 O'Brien Way
Lot #25

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Gail Headley

Name: Conrad R. Headley Date: 3/6/2024

Address & Lot Number: 1316 O'Brien Way, Castle Rock
Lot # 25

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Conrad R. Headley

Name: John Park Jennings Date: 3/17/2024

Address & Lot Number: 761 Twin Oaks Road - Lot 29

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Dear Ms. Pulver,

I, Katrina Jennings, am a resident and owner within the proposed Twin Mesa Metropolitan District. I want to take a moment to communicate to the County that I am strongly in favor of the proposed District. I am one of the owners who had concerns regarding the prior proposed Service Plan that went before the Planning Commission in July 2023. **All of those concerns have been addressed in the current proposed Service Plan. The proposed District therefore now has my full support.**

Many children live and play in Twin Oaks and many residents ride horses and walk our gravel roads. My three children love to walk Twin Oaks Road to visit friends' horses and wave to neighbors. This allows Twin Oaks to be a real community instead of just a collection of houses. If Twin Oaks Road becomes a thoroughfare for Costco traffic, we will lose all of that and so much more. Please grant us this opportunity to protect our homes, our children, our animals, and our quality of life.

Thank you,



Katrina Jennings

P.S. I am also signing my name to the attached form letter.

Name: Katrina Jennings Date: 3/17/2024

Address & Lot Number: 761 Twin Oaks Road - Lot 29

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,



Name: Scott Allison Date: 3-15-24

Address & Lot Number: 1260 Twin Oaks Ln #31

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Name: Amy Allmon Date: 3-15-24

Address & Lot Number: 1260 Twin Oaks Ln #31

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Amy Allmon

Name: Karyn Gollicher Date: 3-15-24

Address & Lot Number: 1260A Twin Oaks Ln #31

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,
Karyn Gollicher

Name: Michael Gollher Date: 3-15-24

Address & Lot Number: 1260A Twin Oaks Lane #31

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Michael Gollher

Name: Otto Biasio Date: 3/9/2024

Address & Lot Number: 1144 Twin Oaks Ln, Castle Rock, CO 80109

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that

process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,



Name: Judy Frueh Date: 3/6/24

Address & Lot Number: 1433 Twin Oaks Ln. Castle Rock, CO Lot 40

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Judy Frueh

Name: Kent Frueh Date: 3/6/24

Address & Lot Number: 40 1433 Twin Oaks Ln. Castle Rock CO

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Name: Joan Boyd Date: March 16, 24

Address & Lot Number: 904 Twin Oaks Rd Lot 42

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Joan Boyd

Name: Lisa Skidmore Date: 3-8-2024

Address & Lot Number: 712 Twin Oaks Road, Lot #44
Castle Rock, CO 80109

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Lisa Skidmore

Name: DONALD SKIDMORE Date: 3/8/2024

Address & Lot Number: 712 TWIN OAKS RD CASTLE ROCK CO. 80109 LOT #44

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Donald Skidmore

Name: Jamey Woodzell Date: 08-Mar-2024

Address & Lot Number: 616 Twin Oaks Rd., Castle Rock, CO Lot #45

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Ray J Woodzell

Name: Eileen Woodzell Date: March 8, 2024

Address & Lot Number: 616 Twin Oaks Rd, Castle Rock, CO Lot #45

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Eileen L. Woodzell

Name: Cheri Anstrand Date: 03/06/2024

Address & Lot Number: 522 Twin Oaks Rd., Lot 46

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Cheri M. Anstrand

Name: Michael Gabriel Date: 3/6/24

Address & Lot Number: 378 Twin Oaks Rd Lot #48

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Name: Katie Gabriel Date: 3/6/24

Address & Lot Number: 378 Twin Oaks Road Lot #48

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Name: Matt Horton Date: 3/27/24

Address & Lot Number: 1241 Clarkes Circle

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Name: Nina Tucker Date: 3-7-2024

Address & Lot Number: #54 1315 Clarkes Circle

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Nina Tucker

Name: Alena Tucker Date: 03/10/2024

Address & Lot Number: 1315 Clarkes Circle, Castle Rock, CO 80109, Lot #54

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Alena Tucker

Name: Ethan Tucker Date: 3-7-2024

Address & Lot Number: #54 1315 Clarkes Circle

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Name: CLARK TUCKER Date: 3/7/2024

Address & Lot Number: #54 1315 Clarkes Circle

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Name: Susie Harris Date: 3/13/24

Address & Lot Number: 1463 Clarkes Circle Lot 56
Castle Rock, CO 80109

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Susan Harris

Name: Daniel Lopez Date: 06 March 24

Address & Lot Number: 1463 Clarkes Circle #56

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Name: Gina Eckert Date: 3/6/24

Address & Lot Number: 571 Twin Oaks Rd Lot 23

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Gina Eckert

Name: JAI CHINAKONDA Date: 3/9/24

Address & Lot Number: 571 TWIN OAKS RD, CASTLE ROCK CO 80109
LOT NUMBER: 23

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Name: Dennis Ingram
Date: March 3, 2024

Address: 1268 Clarkes Circle
Castle Rock, CO 80109
Lot 21

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and

signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Dennis Ingram

Name: Regina K. Ingram
Date: 3-3-2024

Address: 1268 Clarkes Cir.
Castle Rock, CO 80109
Lot 21

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and

signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Regina K. Ingram

Name: Craig O'Brien Date: 3-6-24

Address & Lot Number: 1200 Clarkes Circle Lot 20

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Craig O'Brien

Name: Margit Evenstad Date: 3-6-24

Address & Lot Number: 1200 Clarkes Circle Lot # 20

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Margit Evenstad

Name: JOSEPH SHOWERS Date: MARCH 6, 2024

Address & Lot Number: LOT 19, 334 DILLON DR, CASTLE ROCK 80109

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Name: Lori Heniser Date: 3/6/24

Address & Lot Number: 521 Dillon Dr. Lot #17

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Lori Heniser

Name: Carey Kwiser Date: 3/6/24

Address & Lot Number: Lot # 17 Twin Oaks

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Name: Kelly Southerlin
Date: 2/10/24

Address & Lot Number: #16 415 Dillon Dr Castle Rock CO 80109

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic

controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

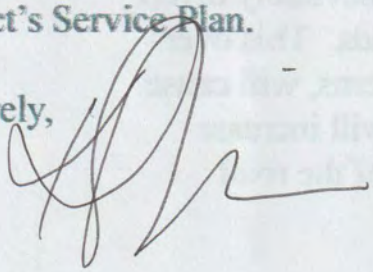
- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,



Name: Tyler Sutherlin
Date: 3/10/24

Address & Lot Number: 16
4115 Dillon Dr Castle Rock Co 80109

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic

controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

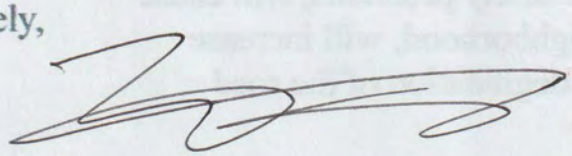
- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,



Name: Stephanie Southerlin
Date: 3/10/2024

Address & Lot Number:
415 Dillon Dr. Lot
Castle Rock. CO. 80109 #16

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic

controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Stephanie Southerlin

Name: Clorinda Salazar Date: 3-10-24

Address & Lot Number: 321 Dillon Dr, 80109, Lots 14 & 13

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

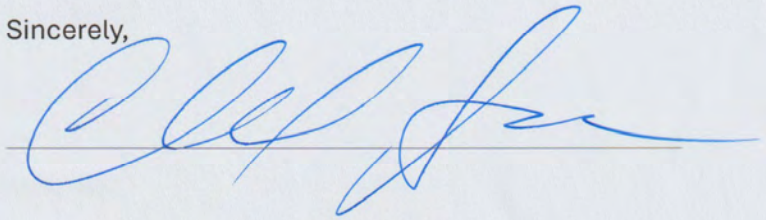
Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that

process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,



Name: Gabriel Salazar Date: March 10th, 2024

Address & Lot Number: 321 Dillon Dr, 80109, Lots 14 + 13

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

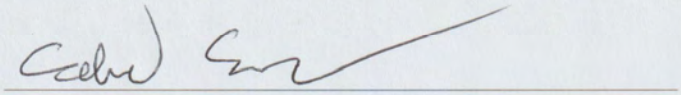
Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that

process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,



Name: Jimmy R. Calhoun Date: 3.18.2024

Address & Lot Number: 1063 Clarkes Ct & Lot 12

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Jimmy R Calhoun

Name: Melanie Calhoun Date: 3-18-24

Address & Lot Number: 1063 Clarke Ct - Lot 12

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Melanie Calhoun

Name: Tom Culhane Date: 3 18 2024

Address & Lot Number: 1063 Clarke Ct Lot 12

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Name: Leila F. Calhoun Date: 3.18.2024

Address & Lot Number: 1063 Clarkes Ct & Lot 12

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Leila F. Calhoun

Name: Bev Clemens Date: 3/11/24

Address & Lot Number: 1066 Clarke Ct. Castle Rock, CO Lot #11

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Beverly A. Clemens

Name: Dan Clemens Date: 3/8/24

Address & Lot Number: 1066 Clarke Ct. Castle Rock CO LOT #11

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

D. P. Clemens

Name: Rachel Clemens Date: 2/29/24

Address: 10616 Clarke Ct, Castle Rock (Lot 11)

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we don't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that

process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Rachel Clemens

Name: Diane W. Hollberg Date: 3/6/2024

Address & Lot Number: 1170 Clarke Ct. Castle Rock CO 80109
Twin Oaks Lot 10

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Diane W Hollberg

Name: John Hollberg Date: 2024-03-05

Address & Lot Number: 1170 Clarke Ct Castle Rock CO 80109
LOT 10

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Name: Marie Hallmark Date: 3/6/24

Address & Lot Number: 113 Briscoe Lane. Lot #9

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Marie Hallmark

Name: Heather Hallmark Date: 3/6/24

Address & Lot Number: 113 Briscoe Ln. Lot 9

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Name: Dawn Granie Date: March 13, 2024

Address & Lot Number: 181 Briscoe Lane, Castle Rock

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.
- The traffic control gate to be constructed, operated and maintained by the District will help dissuade non-resident use of our roads.
- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.
- The District will have no authority to issue debt and cannot impose a debt mill levy.
- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For the property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believer the District is the most equitable way for my neighbors and me to share the cost of the traffic control on the gravel roads that will we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Name: Steve Grawie Date: 3-16-24

Address & Lot Number: 181 Briscoe Lane

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Name: Judy Buchanan Date: 3/16/2024

Address & Lot Number: 181 Briscoe Lane Castle Rock CO 80109

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely, Judy Buchanan

Name: Stephen Granic JI. Date: 03-16-24

Address & Lot Number: 181 Bisque Cir. Castle Rock CO. 80109

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Name: Susan Clark Date: 3/16/2024

Address & Lot Number: 225 Briscoe Lane Castle Rock, CO 80109
Lot 7

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Susan Clark

Name: DEAN C. STANGE Date: 11 MAR 24

Address & Lot Number: 170 BRISCOE LANE, CASTLE ROCK CO LOT 2

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Dean C. Stange

Name: Barb Letherby Date: 3/13/24

Address & Lot Number: 170 Briscoe Lane Lot 2
Castle Rock Colo 80109

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Barbara Letherby

Name: Jasmine Linkenheil Date: 4-05-2024

Address: 950 Twin Oaks Rd, Castle Rock, Co 80109

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Jasmine Linkenheil

Name: Sandra Linkenheil Date: 4-5-24

Address: 950 Twin Oaks Rd, Castle Rock, CO 80109

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Sandra Linkenheil

Name: Lisa Linkenheil Date: 4-5-2024

Address: 950 Twin Oaks Rd. Castle Rock, CO 80109

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Lisa Linkenheil

Name: Richard Linkenheil Date: 4-5-2024

Address: 950 Twin Oaks Rd. Castle Rock. Co. 80109

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Richard Linkenheil

Name: G. D. Fuller Date: 4/4/24

Address & Lot Number 806 TWIN OAKS CR 80109 LOT 43

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

G D Fuller

Name: [print] Ann FREIBERGER

Address: 1951 Promontory DR., C/Rock CO 80109

Date: 3.19.24

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

A Freiberger

Name: [print] ANTON KARI

Address: 1938 W. VALLEY VISTA DR.

Date: 3-21-24

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely, Anton Kari

Name: Caleb Myhill Date: 3/22/2024

Address: 1150 S. Peak View Dr., Castle Rock, CO 80109

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Caleb Myhill

Name: Carley Hobbs Date: 04/02/24

Address: 870 South Mountain View Road
Castle Rock, Co 80109

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Name: Jeff and Diane McGonegal Date: March 15, 2024

Address: 1905 W Valley Vista Drive, Castle Rock, CO 80109

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

We are residents and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Name: [print] Cathy Collins Mondin

Address: 6551 Peak View Dr

Date: 3-23-24

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Name: Cesare E Morganti, Jr Date: 3/14/2024

Address: 1147 Peakview Dr Castlerock, Co 80109

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that

process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

cesare morganti jr

Name: DEBORAH D STATTER

Address: 1105 S PEAK VIEW DR, CASTLE ROCK, CO 80109

Date: 3/23/24 This page intentionally left blank.

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I ~~am a resident and/or~~ owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely, Deborah D Statter 3/23/24

501299 49665492.4 01555281 0-2
EGLR402A 5038 07 20231222 PG 5 OF 5

myhomedepotaccount.com
1-800-205-7262 (TTY: 711)

Name: CLAUDIA URA Date: 3-14-24

Address: 1147 S Peak View Dr Castle Rock CO 80109

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that

process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,



Name: Dalton Mackay

Address: 1405 S. Mountain View Rd.

Date: 3/21/24 This page intentionally left blank.

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I ~~am a resident and/or~~ owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

D Mackay

EOLR402A 5038 07 20231222 PG 5 OF 5
49665492.4 01555201 0-2
50L299

myhomedepotaccount.com
1-800-395-7363 (TTY: 711)

Name: Damian Cox Date: 3/14/24

Address: 1288 S. Peak View Dr.

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Name: Drew Edsall Date: 3/23/2024

Address: 1649 S Peak View Drive, Castle Rock, CO 80109

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Name: Dustin Hobbs Date: 3/12/24

Address: 870 S. Mountain View Rd. Castle Rock CO 80104

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Dustin Hobbs

Name: [print] Edward Freiberger

Address: 1951 Promontory Drive, CR 80109

Date: 3-12-2024

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Edward Freiberger

Name: [print] ELLE FREIBERGER

Address: 1951 Promontory Dr., Castle Rock CO 80109

Date: 3/26/24

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely, Elle Freiberger

Name: [print] Erik Matson

Address: 1801 Promontory Drive, Castle Rock, CO 80109

Date: 3/19/24

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Name: Rebecca S. Hissem Date: 3/19/24

Address: 641 Peak View Drive, Castle Rock, CO 80109

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Rebecca S. Hissem

Name: [print] Rebecca Matsan

Address: 1801 Promontory Drive Castle Rock, CO 80109

Date: 3-19-24

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Name: Philip Plum

Address: 1405 S MOUNTAIN VIEW RD CASTLE ROCK, CO 80109

Date: 3/21/2024

This page intentionally left blank.

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I ~~am a resident and/or~~ owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

EOLR402A 5038 07 20231222 PG 5 OF 5
5012299 49665492.4 01555201 0-2

myhomedepotaccount.com
1-800-395-7363 (TTY: 711)

Name: RICHARD FERGUSON Date: 4/02/24

Address: 929 S. MTN. VIEW RD
CASTLE ROCK, CO 80109

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that

process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Ronald Ferguson

Name: Robert Krautz Date: 3/8/24

Address: 1857 S. Peakview dr., Castle Rock, CO 80109

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that

process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

_____

Name: PAUL MYHILL Date: 3/22/24

Address: 1150 S. PEAK VIEW DR., CASTLE ROCK, CO 80109

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Name: Patti A. Pickell
Address: 1603 S. Peak View Dr., Castle Rock, CO 80109

Date: March 6, 2024

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

p. 1 of 2 PAP

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Patti Puckett

p2 of 2 pap

Gene A. Osborne

485 Peak View Drive.

Castle Rock, Colorado 80109

Douglas County Department of Community Development

100 Third Street

Castle Rock, Co. 80104

Attn: Ms. Lauren Pulver, Planning Supervisor.

Dear Ms. Pulver,

I am an owner and resident with my wife of 485 Peak View Drive in unincorporated Douglas County.

In spite of our property not being included in either the Twin Oaks or Castle Mesa subdivisions we have been provided with a copy of the proposed Service plan for the Twin Mesa Metropolitan District. (TMMD)

We have also been advised of the proposed Crystal Valley interchange and the Dawson Trails residential development and planned commercial uses.

The massive size of this development cannot help but substantially increase the traffic on our rural gravel roads. Our roads cannot handle this projected volume of traffic. Our property is already substantially damaged several times a year by drivers unfamiliar with Peak View Dr. plowing through our fences and landscape. In addition, common sense tells us that road degradation and dust will become unbearable not to mention the crime that increased traffic will automatically bring.

I am strongly favor the formation of (TMMD). I understand that my property will be taxed through a mill levy on my real estate not to exceed 10mills. TMMD will construct and operate a single traffic control gate and appurtenant signage.

Without TMMD, and its proposed traffic safety gate, I see no other way to prohibit the severely detrimental use of our roads for a purpose they were never designed for. This development is going to be constructed and our roads will be overwhelmed by the traffic it will generate.

I understand the eligible voters (my neighbors) in the district will ultimately decide in an organizational election whether the district should be formed. The first step in that process is the County approval of the Service plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the needed traffic safety controls.

Respectfully

Gene A. Osborne



Gene A. Osborne

1425 Castle Mesa Drive

Castle Rock, Colorado 80109

Douglas County Department of Community Development

100 Third Street

Castle Rock, Co. 80104

Attn: Ms. Lauren Pulver, Planning Supervisor.

Dear Ms. Pulver,

I am an owner with my wife of 1425 Castle Mesa Drive in unincorporated Douglas County.

Our property is within the Castle Mesa subdivision. We have been provided with a copy of the proposed Service plan for the Twin Mesa Metropolitan District. (TMMD)

We have also been advised of the proposed Crystal Valley interchange and the Dawson Trails residential development and planned commercial uses.

The massive size of this development cannot help but substantially increase the traffic on our rural gravel roads. Our roads cannot handle this projected volume of traffic. In addition, common sense tells us that road degradation and dust will become unbearable not to mention the crime that increased traffic will automatically bring.

I am strongly in favor the formation of (TMMD). I understand that my property will be taxed through a mill levy on our real estate not to exceed 10mills. TMMD will construct and operate a single traffic control gate and appurtenant signage.

Without TMMD, and its proposed traffic safety gate, I see no other way to prohibit the severely detrimental use of our roads for a purpose they were never designed for. This development is going to be constructed and our roads will be overwhelmed by the traffic it will generate.

I understand the eligible voters (my neighbors) in the district will ultimately decide in an organizational election whether the district should be formed. The first step in that process is the County approval of the Service plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the needed traffic safety controls.

Respectfully



Gene A. Osborne

Lyn M. Osborne

485 Peak View Drive.

Castle Rock, Colorado 80109

Douglas County Department of Community Development

100 Third Street

Castle Rock, Co. 80104

Attn: Ms. Lauren Pulver, Planning Supervisor.

Dear Ms. Pulver,

I am the owner and resident of 485 Peak View Drive in unincorporated Douglas County.

In spite of our property not being included in either the Twin Oaks or Castle Mesa subdivisions I have been provided with a copy of the proposed Service plan for the Twin Mesa Metropolitan District. (TMMD)

I have also been advised of the proposed Crystal Valley interchange and the Dawson Trails residential development and planned commercial uses.

The massive size of this development cannot help but substantially increase the traffic on our rural gravel roads. Our roads cannot handle this projected volume of traffic. My property is already substantially damaged several times a year by drivers unfamiliar with Peak View Dr. plowing through my fences and landscape.In addition, common sense tells me that road degradation and dust will become unbearable not to mention the crime that increased traffic will automatically bring.

I am strongly favor the formation of (TMMD). I understand that my property will be taxed through a mill levy on my real estate not to exceed 10mills. TMMD will construct and operate a single traffic control gate and appurtenant signage.

Without TMMD, and its proposed traffic safety gate, I see no other way to prohibit the severely detrimental use of our roads for a purpose they were never designed for. This development is going to be constructed and our roads will be overwhelmed by the traffic it will generate.

I understand the eligible voters (my neighbors) in the district will ultimately decide in an organizational election whether the district should be formed. The first step in that process is the County approval of the Service plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the needed traffic safety controls.

Respectfully LM Osborne

Lyn M. Osborne

Lyn M. Osborne

1425 Castle Mesa Drive

Castle Rock, Colorado 80109

Douglas County Department of Community Development

100 Third Street

Castle Rock, Co. 80104

Attn: Ms. Lauren Pulver, Planning Supervisor.

Dear Ms. Pulver,

I am an owner with my husband of 1425 Castle Mesa Drive in unincorporated Douglas County.

Our property is within the Castle Mesa subdivision. We have been provided with a copy of the proposed Service plan for the Twin Mesa Metropolitan District. (TMMD)

We have also been advised of the proposed Crystal Valley interchange and the Dawson Trails residential development and planned commercial uses.

The massive size of this development cannot help but substantially increase the traffic on our rural gravel roads. Our roads cannot handle this projected volume of traffic. In addition, common sense tells us that road degradation and dust will become unbearable not to mention the crime that increased traffic will automatically bring.

I am strongly in favor of the formation of (TMMD). I understand that my property will be taxed through a mill levy on our real estate not to exceed 10mills. TMMD will construct and operate a single traffic control gate and appurtenant signage.

Without TMMD, and its proposed traffic safety gate, I see no other way to prohibit the severely detrimental use of our roads for a purpose they were never designed for. This development is going to be constructed and our roads will be overwhelmed by the traffic it will generate.

I understand the eligible voters (my neighbors) in the district will ultimately decide in an organizational election whether the district should be formed. The first step in that process is the County approval of the Service plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the needed traffic safety controls.

Respectfully

Lyn Osborne

Lyn M. Osborne

Ronald Bergmann

485 Peak view Drive

Castle Rock, Colorado 80109

Douglas County Department of Community Development

100 Third Street

Castle Rock, Co. 80104

Attn: Ms. Lauren Pulver, Planning Supervisor.

Dear Ms. Pulver,

I am a long-time resident at 485 Peak View Drive in unincorporated Douglas County.

I have been provided with a copy of the proposed Service plan for the Twin Mesa Metropolitan District. (TMMD)

I have also been advised of the proposed Crystal Valley interchange and the Dawson Trails residential development and planned commercial uses.

The massive size of this development cannot help but substantially increase the traffic on our rural gravel roads. Our roads cannot handle this projected volume of traffic. In addition, common sense tells us that road degradation and dust will become unbearable not to mention the crime that increased traffic will automatically bring.

I am strongly in favor of the formation of (TMMD). I understand TMMD will construct and operate a single traffic control gate and appurtenant signage.

Without TMMD, and its proposed traffic safety gate, I see no other way to prohibit the severely detrimental use of our roads for a purpose they were never designed for. This development is going to be constructed and our roads will be overwhelmed by the traffic it will generate.

I understand the eligible voters (my neighbors) in the district will ultimately decide in an organizational election whether the district should be formed. The first step in that process is the County approval of the Service plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the needed traffic safety controls.

Respectfully

Ronald Bergmann

Name: Natalie Hobbs Date: 3/17/24

Address: 8705 mountainview Rd. castle Rock co 80108

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Natalie Hobbs

Name: Nancy Richards

Address: 1405 S. Mountain View Rd.

Date: 3/21/24 This page intentionally left blank.

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I ~~am a resident and/or~~ owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely, Nancy A. Richards

EOLR402A 5038 07 20231222 PG 5 OF 5
5012199 49665492.4 01555201 0-2

Name: Molly Hobbs Date: 3/17/24

Address: 870 South Mountain View Rd. Castle Rock, CO 80109

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Molly Hobbs

Name: [print] Mike Wise

Address: 1555 W Castle Mesa Dr, Castle Rock, CO 80109

Date: 3/28/24

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Mike Wise

Name: JOSEPH MICHAEL STATTER

Address: 1105 S PEAK VIEW DR CASTLE ROCK, CO 80109

Date: 3/23/24 This page intentionally left blank.

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I ~~am a resident and/or~~ owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely, jmstatter

EOLR402A 5038 07 20231222 P6 5 OF 5
49665492.4 01555201 0-2
50T299

myhomedepotaccount.com
1-800-395-7363 (TTY: 711)

Name: Rachel Cucarola_____ Date: 3-4-24

Address: 1127 South Mountain View Road – Castle Rock, CO 80109

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that

process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,



Name: Mark Cucarola_____ Date: 3-4-24

Address: 1127 South Mountain View Road – Castle Rock, CO 80109

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

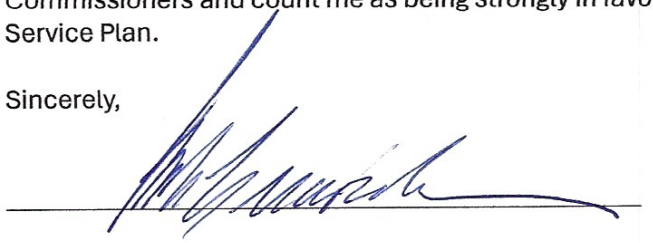
Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that

process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,



Name: John J Dissen Date: 3/19/24

Address: 641 PEAK VIEW DR, CASTLE ROCK, CO 80109

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

John J Dissen

Name: Lisa Myhill Date: 3/22/24

Address: 1150 S. Peak View Dr., Castle Rock, CO 80109

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Lisa Myhill

Name: Linda B Clark Date: 3/4/24

Address: 1358 Peak View Dr. Castle Rock CO 80109

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that

process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,



Name: ELAINE Stucy Date: 3/14/24

Address: 1426 W CASTLE MESA DR CASTLE ROCK CO 80109

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Name: Rick Stucy Date: 3-14-24

Address: 1426 W Castle Mesa Dr, Castle Rock, Co 80109

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Name: **Joan Lampe** Date: **March 11th, 2024**

Address: **871 S Peak View Dr., Castle Rock, CO 80109**

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

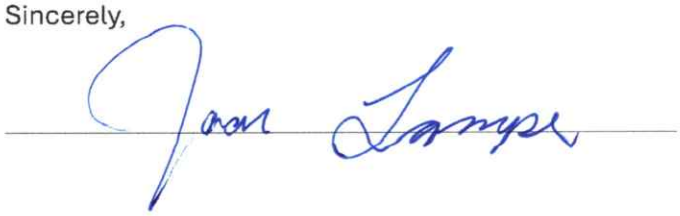
Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that

process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,



Name: [print] BRAD A STETTLER

Address: 1850 S PEAR VIEW DR

Date: 3/30/24

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Name: SUSAN KRAUT Date: 3/8/24

Address: 1857 PEAK VIEW DR, CASTLE ROCK CO 80109

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that

process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Susan V. Krantz

Name: [print] Tiernan Freiberger

Address: 1951 Promontory Dr. Castle Rock, Co 80109

Date: 3-14-24

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely, Tiernan Freiberger

Name: [print] Thomas Ashworth

Address: 1842 S. Peak View Dr.

Date: 3/23/24

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Name: Thomas L. Engleby Date: 3/23/2024

Address: 1110 S. Peak View Dr Castle Rock

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Thomas L Engleby

Name: [print] Anthony Palumbo
aPalumbo3@outlook.com

Address: 1875 Promontory Dr Castle Rock, CO

Date: 3/20/

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

(714) 274-5018

Anthony Palumbo

Home 6602 Kildare Circle Huntington Beach, CA 92647

Name: SARAH MOOR Date: 4/3/24

Address: 1289 Peakview Dr
Castle Rock, Co 80109

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Name: Andrea C. Pomarico Date: 3/6/24

Address & Lot Number: 411 S. Peak View Drive, Castle Rock, CO 80109

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Andrea C. Pomarico

Name: Ervin B. Pickell
Address: 1603 S. Peak View Dr., Castle Rock, CO 80109

Date: March 6, 2024

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

p 1 of 2 EBP

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Lisa R Mitchell

p202 SRP

Name: [print] FRANCIS LAMB

Address: 1833 Promontory Dr., Castle Rock, CO 80109

Date: 3/13/24

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Francis Lamb

Name: George Thomas Young Date: 7 Mar 24

Address: 1438 S. Mountain View Rd, CR, CO 80109

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that

process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

George Thomas Young

Name: [print] GERALD STASIAK

Address: 814 S. PEAK VIEW DR, CASTLE ROCK, CO 80109

Date: 3-23-24

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Name: [print] Hannah Matson

Address: 1801 Promontory Drive Castle Rock CO 80109

Date: 3-19-24

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely, Hannah Matson

Name: Hannah Myhill Date: 3/22/24

Address: 1150 S. Peak View Dr., Castle Rock, CO 80109

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Hannah Myhill

Name: [print] Jennifer Henry

Address: 928 S Peak View Dr Castle Rock CO 80109

Date: 03/26/2024

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Name: [print] Jennifer Lamb

Address: 1833 Promontory Dr., Castle Rock, CO 80109

Date: 3/13/24

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Jennifer Lamb

Name: Jill Cox Date: 3/14/24

Address: 1288 S. Peak View Dr.

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Name: [print] Jill Hughes

Address: 1742 S. Peak View Dr. Castle Rock CO 80109

Date: 3/19/24

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Name: **James Lampe** Date: **March 11th, 2024**

Address: **871 S Peak View Dr., Castle Rock, CO 80109**

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

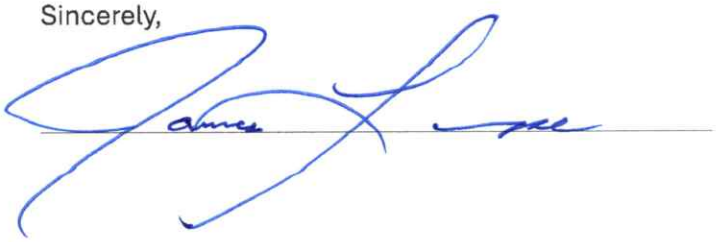
Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that

process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,



Name: [print] Cathy & Jim Manldin

Address: 1551 Post View Drive 80109

Date: 3-23-2024

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Name: [print] Judy MEYER

Address: 928 S. PEAK VIEW DR CASTLE ROCK CO 80109

Date: 5/26/24

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely, Judy A Meyer

Name: [print] Julia Ashworth

Address: 1842 S. Peak View Dr

Date: 3/23/24

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Name: Julie LEHRER Date: 3-15-24

Address: 15556 CASTLE MESA Dr

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Julie B. Lehrer 3/15/24

Name: [print] John Rodriguez

Address: 1749 - Peakview Dr

Date: 3-30-24

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Name: [print] Justin Henry

Address: 928 S. Peak View Dr.

Date: 3/26/24

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,



Name: Justin Stone Date: 3/11/24

Address: 1457 Peak View Dr, Castle Rock CO 80109

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,



Name: [print] Krista Stellar

Address: 1850 S Peak View Dr CR, CO 80109

Date: 3/30/2024

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Name: Jim Scherman Date: 3/18/2024

Address: 1548 S. Mountain View rd, Castle Rock, CO

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Jim Sche

Name: [print] LARA WISE

Address: 1555 W CASTLE MESA DR CASTLE ROCK 80109

Date: 3/28/24

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Name: Lauren Stone Date: 3/11/24

Address: 1457 Peak View Dr, Castle Rock, CO 80109

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

Lauren Stone

Name: Laurie Scherman Date: 3/17/2024

Address: 1548 S. Mountain View Rd, Castle Rock, Co

Douglas County Department of Community Development
100 Third Street, Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the Commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and all of these issues will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and I) will ultimately decide in an organizational election whether the District should be formed, but the first step in that process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

L. Scherman

Name: Leslie Krautz Date: 3-8-24

Address: 1857 S. Peakview dr., Castle Rock, CO 80109

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104
Attn: Ms. Lauren Pulver, Planning Supervisor

Dear Ms. Pulver,

I am a resident and/or owner of a property that would be included within the proposed Twin Mesa Metropolitan District ("District"). I have been provided a copy of the proposed Service Plan and I am strongly in favor of the formation of the District for the following reasons:

- The gravel roads in the neighborhood were designed for and have historically been used by local residents. I am concerned that the Dawson Trails development and the commercial development near Crystal Valley Parkway along with the Crystal Valley/I-25 Interchange will inevitably divert non-resident traffic onto our neighborhood roads. This over-use of the roads will create traffic safety problems, will cause excessive dust throughout the neighborhood, will increase crime and will result in the rapid degradation of the road surface.

- The traffic control gate to be constructed, operated and maintained by the District will help to dissuade non-resident use of our roads.

- The Service Plan for the District limits its authority solely to traffic control and safety, and maintenance of those traffic controls. The traffic controls are limited to a single gate and signage.

- The District will have no authority to issue debt and cannot impose a debt mill levy.

- The maximum mill levy the District can impose for operations is 10 mills, and budget estimates show that less than that should provide the needed funding. For a property within the boundaries of the District with the average actual value of $1,231,549, 10 mills equates to about $825.14 in annual property taxes using current State assessment ratios.

Without the District I see no other way to ensure that we won't have traffic problems on our roads as the surrounding developments advance. I believe the District is the most equitable way for my neighbors and me to share the cost of traffic control on the gravel roads that we all use.

I understand that the eligible voters in the District (i.e., my neighbors and me) will ultimately decide in an organizational election whether the District should be formed, but the first step in that

process is the County's approval of the Service Plan. I respectively urge both the Planning Commission and the Board of County Commissioners to approve the service plan based on the need for traffic safety controls. Without the County's approval, my neighbors and I will be denied the opportunity to vote on the formation of the District for our community.

Please share this letter with the County Planning Commission and the Board of County Commissioners and count me as being strongly in favor of the County approving the District's Service Plan.

Sincerely,

_____

From: Tim Evans
To: Lauren Pulver
Subject: Opposing the TMMD Special District
Date: Thursday, April 11, 2024 12:31:37 PM

To the Board of County Commissioners of Douglas County
Messrs. George Teal, Abe Laydon
Mrs. Lora Thomas

Re: SV2023-003 5th Revision

Honorable Commissioners:
I write to oppose and urge you to deny the application of the proposed Twin Mesa Metro District 5th Revision for the reasons that the application does not meet standards in the statutes outlined in Title 32. Outlined in Red are why the TMMD proposal for a special district do not comply with the statute.
excerpt from Colorado Law Title 32.
TMMD does not provide for TWO services.

CHAPTER 32

Chapter 32-1-103. Definitions

10) "Metropolitan district" means a special district that provides for the inhabitants thereof any two or more of the following services:

(a) Fire protection; NA, Jackson Creek volunteer Fire Dept, provides
(b) Mosquito control; NA
(c) Parks and recreation; NA, each residence within boundaries is located on 10 acres or more
(d) Safety protection; NA, Our County gravel roads are as safe as in any other neighborhood in DC
(e) Sanitation; NA Each individual property has stand-alone septic system
(f) Solid waste disposal facilities or collection and transportation of solid waste; NA most residence use WM
(g) Street improvement; NA County maintains gravel roads quite adequately for last 40+ years
(h) Television relay and translation; NA
(i) Transportation; NA
(j) Water. NA Each individual lot has private well

Respectfully submitted,

Tim Evans
1103 Twin Oaks Lane
Castle Rock, CO 80109
Cell: 303-918-3000

Tel: (720) 473-7644
Fax: (720) 473-7647

Goodspeed Merrill
9605 S Kingston Ct., Suite 200
Englewood, CO 80112
www.goodspeedmerrill.com

Miro Kovacevic
mk@goodspeedmerrill.com
Direct: 720-531-4021

April 10, 2024

VIA EMAIL

Douglas County
Department of Community Development
tbedford@douglas.co.us; jbare@douglas.co.us;
mwillia1@douglas.co.us; agriffit@douglas.co.us;
lpulver@douglas.co.us

Twin Mesa Metropolitan District
legitdudedan21@gmail.com

The Town of Castle Rock
svossler@crgov.com;
jjensma@crgov.com;
rgermeroth@crgov.com;
bkelley@crgov.com

Westside Investment Partners, Inc.
ljacobson@westsideinv.com;
jschroeder@westsideinv.com

Re: Twin Mesa Special District's Service Plan Application

To whom it may concern:

As you are aware, this firm represents Tuscan Farm, LLC ("Tuscan Farm") in connection with Lots 58, 59, and 60 (the "Lots"). We are in receipt of the Twin Mesa Metropolitan District's (the "District") Special District Service Plan Application dated March 6, 2024 (the "Application"). We write to provide comments regarding the same.

While we understand that Tuscan Farm may not be a referral agency, we note that the first Tuscan Farm learned of the Application was March 25, 2024 – three days after the comment period ended. As has been the problem throughout this ongoing matter, the agents of the District, whom previously acted on behalf of the Twin Oak Homeowner's Association, Inc.'s ("Twin Oaks HOA") efforts, failed to confer with Tuscan Farm regarding their plans. This only results in Douglas County ("County") reviewing plans that need to be modified to address Tuscan Farm's concerns. With that being said, we write to raise concerns and offer alternatives in hopes of reaching an amicable solution for all involved.

The Application concerns modifications to two roads that serve as entry points for the Twin Oaks Subdivision: Twin Oaks Road and Clarke's Circle. We address each road in turn. Please note that we raise issues only with respect to items that are currently objectionable. Of course, if the plans were to change, Tuscan Farm reserves the right to raise issues with additional items at a later date.

GOODSPEED MERRILL

Twin Oaks Road

With respect to the entrance to Twin Oaks Subdivision via Twin Oaks Road, the District proposes installing a gate immediately to the northwest of the driveway entering Lot 59. In addition, the District proposes the construction of a turnaround on Twin Oaks Road immediately before (to the southeast of) the gate, which would be contiguous with Tuscan Farm's driveway. The District further seeks to vacate Twin Oaks Road from the gate northwest to the northerly border of Lot 59. These combined actions raise two issues for Tuscan Farm: (i) access to Lot 59; and (ii) title issues with respect to the vacated portion of Twin Oaks Road and impact upon future use of Lot 59.

As has been noted on multiple occasions, Tuscan Farm is in the process of establishing a tree farm on Lots 58-60. The entrance to Lot 59 via Twin Oaks Road will be an instrumental part of the tree farm's operations. As it has in the past, Tuscan Farm again objects to the installation of a gate anywhere along Lot 59. The gate should be installed along the northerly border of Lot 59. To the extent this would occur, Tuscan Farm would not object to a turnaround being installed immediately before the gate and would even offer an easement to the District for the same.

The problem raised by the location of the proposed gate and the turnaround is that it will cause traffic issues and interfere with access to Lot 59. Tuscan Farm anticipates that its operations will generate at least moderate traffic, which will be composed of a combination of private and commercial vehicles of varying sizes. Of course, the Twin Oaks Road acts as a major entrance from I-25 for the Twin Oaks and Castle Mesa neighborhoods, which include possibly hundreds of residents. This has resulted in significant traffic over Twin Oaks Road. It is anticipated that the logistics and realities of the gate, which include the fact that it will have to be opened and closed for each driver passing through, coupled the anticipated increase in traffic to the area, will become a major source of congestion. The concern is even more poignant when one considers the possibility of the gate failing. All of this will inhibit Tuscan Farm's agents, vendors and customers from having reasonable access to Lot 59 and will harm operations since they will have to literally wait in traffic to access Lot 59. It would also not be surprising if the increased traffic resulted in Twin Oaks Road being paved in the future, which presumably would only increase traffic more. All the while, moving the gate to the northerly boundary of Lot 59 would alleviate most of these concerns as it would eliminate the traffic to Lot 59 from the issues with the gate. We seriously question whether the District would propose or the County consider such a turnaround contiguous with any other residents' driveways in the Twin Oaks subdivision.

Pursuant to the Application, the District further seeks to vacate Twin Oaks Road from the proposed gate location all the way to the end of Lot 59's property and obtain title to the same. This is inappropriate. First, vacating the road from the proposed gate to the northerly property line will materially impair Tuscan Farm's ability to relocate access to Lot 59. As can be seen on Exhibit E of the Application, Lot 59 has limited access. The only road to which Lot 59 has direct access is Twin Oaks Road along Lot 59's westerly border. Further, due to the fact

that City of Castle Rock owns the strip of property that runs between Lot 59 and Twin Oaks Road starting just south of Tuscan Farm's driveway all the way to the south, Lot 59's access is limited to less than a quarter of its entire border. As a result, the District's proposal would limit Lot 59's access to some 20-30 feet total. This would eviscerate options for redevelopment and new access in the future and would significantly undermine the value of Lot 59.

Second, as has been previously noted, if the road were vacated, Tuscan Farms would be entitled to half of the real property. C.R.S. § 43-2-302(1)(a). As such, the District's proposal would amount to a taking.

Considering these issues and the fact that no harm would befall the District or the residents to the west if the gate was moved to the northerly border of Lot 59, Tuscan Farm objects to the proposed placement of the gate anywhere along Twin Oak Road if it is adjacent to Lot 59. But, as noted above, if the gate were moved to run along the northerly border of Lot 59, it would not object to the installation of a turnaround immediately in front of it and would offer an easement to the District for the same.

Clarke's Circle

With respect to Clarke's Circle, the District proposes to install a gate along the northerly border of Lot 60. It appears that the Application assumes the acceptability of and relies upon Westside Investment Partners, Inc.'s ("Westside") proposal for a "right in; right out" only entrance off of Gamble Ridge Boulevard ("Gamble Ridge").

Conceptually, Tuscan Farm does not have an issue with the location of the proposed gate. Importantly, Tuscan Farm's consent to the gate's location is contingent upon certain required modifications to the entrance to Clarke's Circle off of Gamble Ridge.

The problem caused by the current proposal is that large vehicles will not be able to enter and access Lots 58 and 60 off Gamble Ridge. As noted above, the tree farm will have vendors and customers accessing the property with large and commercial vehicles, including trucks. These individuals will need to be able to move their equipment and stock on and off site. The proposed turn off from Gamble Ridge, which will not have an acceleration or deceleration lane, and includes an island that further disrupts traffic flow, will not be large enough to accommodate this kind of traffic. Westside has confirmed this. Not only does this harm the anticipated operations of the Lots, it actually prevents the permitted use of these Lots under local zoning code as well. And while Westside has taken the position that any such access for larger and commercial vehicles could be obtained via Twin Oaks Road, the current proposal set forth by the District would eliminate that possibility.

As such, while Tuscan Farm does not take issue with the proposed modifications in the District's Application, it does so contingent upon the necessary changes being made to the exit at Clarke's Circle to ensure appropriate access. Proposals of acceptable changes to Gamble Ridge are attached.

GOODSPEED MERRILL

Conclusion

We appreciate the opportunity to provide our concerns regarding the Application. While the District has made a few modifications over the past year or so, there are still material issues that need to be addressed. Please note that as of today, Lot 58, 59, and 60 have reasonable access. The District and Westside are making proposals that will have a significant impact upon that access. To the extent any future proposal is acceptable, it would be expected that the cost to implement any such improvements would be borne by the party who submitted/benefitted from the same.

Finally, we note that my communication dated December 21, 2023 concerning the Twin Oaks HOA's proposals. We attach them again to complete the file.

Tuscan Farm reserves all rights and remedies. Please do not hesitate to contact me with any questions or concerns.

Sincerely,

GOODSPEED MERRILL

s/ Miro Kovacevic
Miro Kovacevic, Esq.

Tel: (720) 473-7644
Fax: (720) 473-7647

Goodspeed Merrill
9605 S Kingston Ct., Suite 200
Englewood, CO 80112
www.goodspeedmerrill.com

Miro Kovacevic
mk@goodspeedmerrill.com
Direct: 720-531-4021

December 21, 2023

VIA EMAIL

Douglas County
Department of Community Development
tbedford@douglas.co.us; jbare@douglas.co.us;
mwillia1@douglas.co.us; agriffit@douglas.co.us

Twin Oaks Homeowners Association, Inc.
sleff@wlpplaw.com; legitdudedan21@gmail.com

The Town of Castle Rock
svossler@crgov.com;
jjensma@crgov.com;
rgermeroth@crgov.com;
bkelley@crgov.com

Westside Investment Partners, Inc.
ljacobson@westsideinv.com;
jschroeder@westsideinv.com

Re: Twin Oaks Subdivision Entrance

To whom it may concern:

This firm represents Tuscan Farm, LLC ("Tuscan Farm") in connection with Lots 58, 59, and 60 (the "Lots"). We are in receipt of the Twin Oaks Homeowners' Association, Inc. (the "Association") submission dated November 27, 2023, regarding two "options" to modify Twin Oaks Road and Clarkes Circle (the "Proposals").

On behalf of Tuscan Farm, we write to inform Douglas County ("County") that Tuscan Farm unequivocally objects to the Proposals and any alleged options/suggestions contained therein.

At the outset, we would like to thank Matt Williams for forwarding the Proposals. Unfortunately, the Association continues to exclude Tuscan Farm from any discussions or consideration of suggestions to modify Twin Oaks Road and Clarkes Circle. As you will recall, just a few months ago, we were forced to submit a communication to the relevant parties in order to quell a false rumor that Tuscan Farm had agreed to a certain proposal that it had never seen or been contacted about. See the email trail and our letter dated October 16, 2023, attached as **Exhibit 1**. Unfortunately, the Association appears to be continuing this tactic. More disturbing is the fact that the Association appears to have wholly ignored our October 16 communication and nonetheless continues to falsely suggest that Tuscan Farm is supportive of the Proposals. We appreciate that Mr. Williams is attempting to share information with Tuscan Farm so that it can contribute to the discussion.

The Association's claim that the Proposals are the result of many discussions with various organizations including Tuscan Farm is false. Tuscan Farm had absolutely no involvement with the creation and submittal of the Proposals. Indeed, the Proposals were submitted without Tuscan Farm's knowledge or consent, just like virtually all of the Association's proposals to date. To the extent that the Association had "many discussions" with any other organization, it was to the exclusion of Tuscan Farm.

The Proposals are problematic and prejudicial. Tuscan Farm has already obtained approval and intends to imminently initiate construction on a driveway on Lot 59, which will branch off Twin Oaks Road sixty feet to the northwest of the property owned by The Town of Castle Rock. Please see the approved permit and the plans, attached as **Exhibit 2**. The Association's two options appear to ignore this driveway approval and seek to have Tuscan Farm's driveway cross the land owned by the Town of Castle Rock via an easement. As such, the Proposals are at odds with Tuscan' Farm's approved driveway plan and are therefore unacceptable.

Further, while option 1 may somewhat resemble a suggestion discussed with the County, the Association is intentionally leaving out context. When the issue was discussed with the County, Tuscan Farm had been led to believe that all of Twin Oaks Road was going to privatized, which is clearly not the case now. In any event, this item was discussed almost a year ago, Tuscan Farm made it known immediately after the meeting that it objected to the possibility, and there was never any agreement amongst the parties. Interestingly, it was the Association who objected to the suggestion at the time, but now many months later is attempting to revive it under false pretenses.

Tuscan Farm has incurred significant costs in the obtainment of the driveway approval and its plans to construct its approved driveway. Tuscan Farm intends to move forward with the same. In the interest of providing feedback, Tuscan Farm makes the following comments on the Proposals:

(i) Any and all gates along Twin Oaks Road must be moved northwest past Lot 59 and placed upon the Association's and/or an Association member's property, just like it is proposing with respect to Clarkes Circle;

(ii) Any and all roundabouts must be large enough to reasonably support tractor trailer access;

(iii) To the extent anymore "proposals" are submitted, Tuscan Farm will not agree to any such proposal if it offers any of the Lots any less access than they enjoy today; and

(iv) Tuscan Farm will object to any future proposal unless it is permitted a reasonably opportunity to have an agent present for any and all discussions

with any and all parties related to any proposals that may impact the Lots, their intended use, and access to them.

Please note that Tuscan Farm makes the above suggestions under paragraphs (i) and (ii) as suggestions only and does not intend to make an offer and will not be bound to the above until and unless it executes a final agreement to that effect.

In conclusion, Tuscan Farm objects to the Proposals for the reasons outlined herein and many additional reasons. Tuscan Farm reserves all rights and remedies. Please do not hesitate to contact me with any questions or concerns.

Sincerely,

GOODSPEED MERRILL

s/ Miro Kovacevic

Miro Kovacevic, Esq.

From:	Glen Tuscan Triple Protection Autocare
To:	Lawrence Jacobson
Cc:	Brendan Fitch; Andrew and Kimberly Hough; Miro Kovacevic; Nick Rudden
Subject:	RE: Twin Oaks entrance drawings
Date:	Tuesday, September 26, 2023 10:44:24 AM
Attachments:	image001.png image003.png

External

Larry,

We have not agreed to these at all !!!!

Sincerely,

photo

Glen Tuscan
Founder, CEO
(303) 435-1838
gat@tripac.net

Celebrating 33 Years

DCS | TRI-PAC | ONUST
7200 South Alton Way
Suite C-200
Centennial, CO 80112
303.435.1838 Cell
303.798.4499 Office
303-798-2480 Fax

This electronic transmission (and any attached document) contains confidential information from Triple Protection Auto Care, Inc., and is for the sole use of the individual or entity to whom it is addressed and may be privileged, confidential or exempt from disclosure under law. If you are not the intended recipient of this email, or the employee or agent responsible for delivering it to the intended recipient, you are hereby notified that any other dissemination, distribution or copying of this transmission is strictly prohibited. If you receive this message in error, please notify Triple Protection Auto Care, Inc., at info@tripac.net and destroy the attached message (and all attached documents) immediately. Thank you for your cooperation.

From: Lawrence Jacobson <ljacobson@westsideinv.com>
Sent: Tuesday, September 26, 2023 10:27 AM
To: Glen Tuscan Triple Protection Autocare <gat@tripac.net>
Subject: Twin Oaks entrance drawings

Glen – I hope that you're doing well.

EXHIBIT
1

My understanding is that the attached are the drawings which are being advanced for the Twin Oaks entrance, and were presented to Andy a month or so ago.

Please let me know if you have some time to speak later this afternoon.

Thx much.

Lawrence P. Jacobson
Principal
Westside Investment Partners, Inc.
4100 East Mississippi Avenue - Suite 500
Denver, CO 80246
p (303) 984-9800 c (303) 748-5466
ljacobson@westsideinv.com

From:	Nikki Kromenacker
To:	tbedford@douglas.co.us; jbare@douglas.co.us; mwillia1@douglas.co.us; agriffit@douglas.co.us; sleff@wlpplaw.com; legitdudedan21@gmail.com; svossler@crgov.com; rgermeroth@crgov.com; jjensma@crgov.com; bkelley@crgov.com; ljacobson@westsideinv.com; JSchroeder@westsideinv.com
Cc:	Miro Kovacevic; Joann Halpern
Subject:	Tuscan Farms, LLC/ Properties - Correspondence
Date:	Monday, October 16, 2023 2:04:35 PM
Attachments:	image001.png 725244.pdf

Please find the attached correspondence from Miro Kovacevic. If you have any questions, please do not hesitate to contact our firm.

Nikki Kromenacker
Legal Assistant
9605 South Kingston Court 200
Englewood, Colorado 80112
O (720) 473-7644
D (720) 512-2015

Tel: (720) 473-7644
Fax: (720) 473-7647

Goodspeed Merrill
9605 S Kingston Ct., Suite 200
Englewood, CO 80112
www.goodspeedmerrill.com

Miro Kovacevic
mk@goodspeedmerrill.com
Direct: 720-531-4021

October 16, 2023

VIA EMAIL

Douglas County
Department of Community Development
tbedford@douglas.co.us;
jbare@douglas.co.us; mwillia1@douglas.co.us
agriffit@douglas.co.us

Twin Oaks Homeowners' Association, Inc.
sleff@wlpplaw.com; legitdudedan21@gmail.com

The Town of Castle Rock
svossler@crgov.com;
rgermeroth@crgov.com;
jjensma@crgov.com;
bkelley@crgov.com

Westside Investment Partners, Inc.
ljacobson@westsideinv.com;
JSchroeder@westsideinv.com

Re: Lots 58, 59, and 60

To whom it may concern:

As you know, this firm represents Tuscan Farm, LLC ("Tuscan Farm") in connection with Lots 58, 59, and 60 (the "Properties").

In recent weeks, Westside circulated certain drawings related to a new proposal for the entrance to the Twin Oaks neighborhood. It has been suggested that Tuscan Farm may have agreed to the proposal.

Please be advised that Tuscan Farm has not agreed and does not agree with any such proposal and will not agree to any proposal where access to the Properties will require traversing a roundabout.

Tuscan Farm reserves all rights and remedies. Please do not hesitate to contact me with any questions or concerns.

Sincerely,
GOODSPEED MERRILL

s/ Miro Kovacevic

Miro Kovacevic, Esq

DOUGLAS COUNTY
BUILDING DIVISION COLORADO

Douglas County Building Division
100 Third Street STE #20
Castle Rock, CO 80104
Phone: 303.660.7497
Email: dcbuilding@douglas.co.us

Permit Number: 23-11773
Inspection Number: 03830917

Building Inspection Report

Code Reviewed Under:

Permit Information

Job Address: 93 TWIN OAKS RD CASTLE ROCK
Job Type: Building
Description: CM - Commercial
Scope of Work: New

Inspection Details

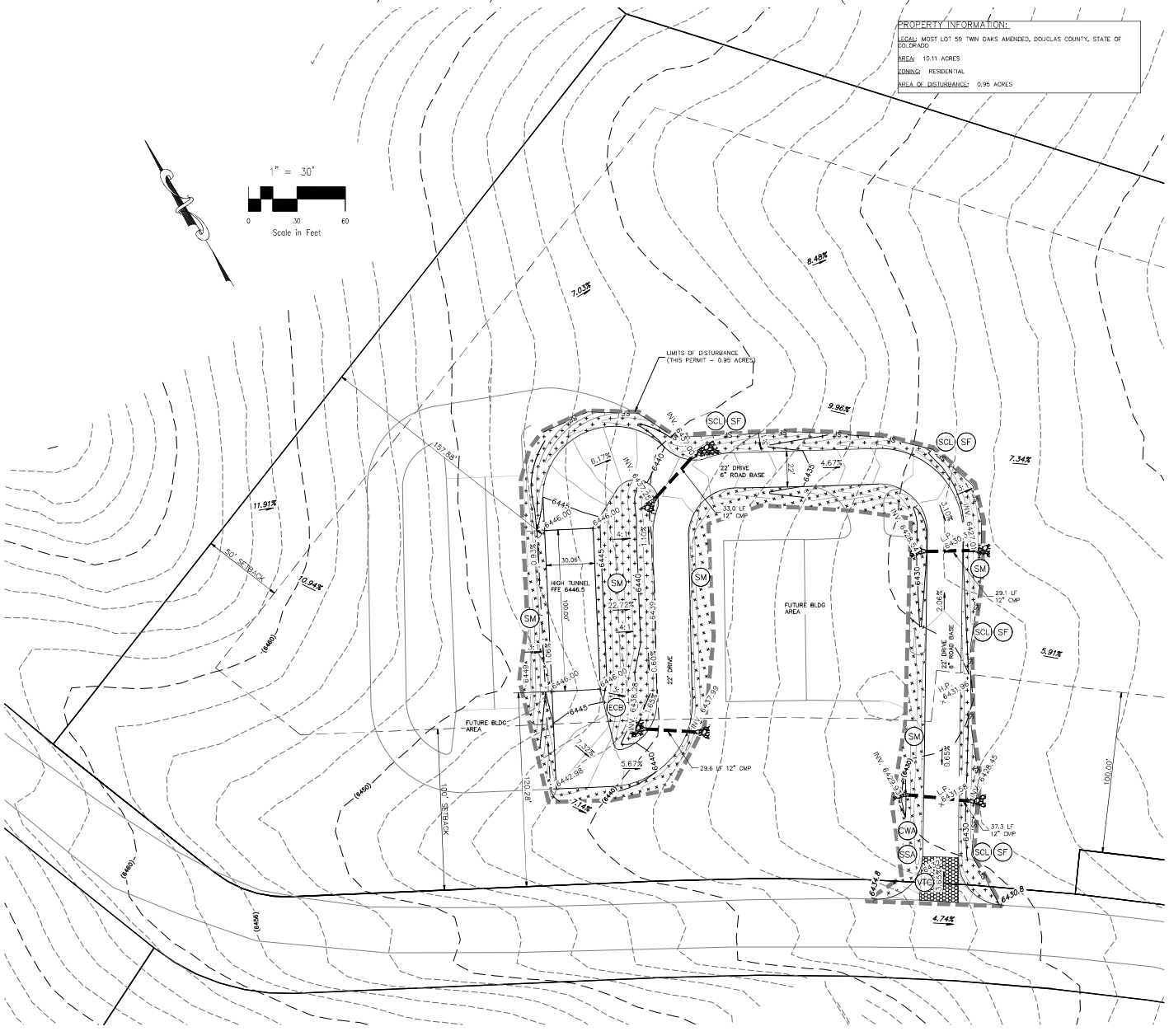
Inspection Date: 08/29/2023
Inspection Time: 8:32 AM
Inspection Type: Driveway Preliminary
Inspection Code: 48
Outcome: Approved
Inspected By: June Amicucci
Charge Reinspection Fee: No

Comments

Drive entry must be 16-22’ wide for Residental 18-24’for agricutural., storm culvert required of either CMP or RCP., Provide a slope away from road 2% and not exceeding 4% for at least 10’., Provide permanent address marker at street prior to final inspection., Entrance gates must be 30’ from road edge and open in toward property not the road., Entry monuments must be located outside the ROW., Driveway must provide a minimum of 12’ all weather driving surface equal to class 6 road base and no more than 10% gade at any one point and provide vertical and horizontal clearance., Driveway form inspection is required on any hard surface placed in ROW., Retain all cut/fill slopes maximum 3:1 slope. Revegetate all disturbed areas., Driveway must have turn around at house if length is 150’ also minimum turnaround is 20x40 and all weather surface 36’radius on circular is required., Driveway with 400’ or longer must have a turn out lane of 10’x30’ for a total width of 22’ must be placed with good sight distance.,
COMPLY WITH Douglas County Standards

EXHIBIT
2

PHASED DRAINAGE, EROSION, & SEDIMENT CONTROL PLAN (DESC)



LEGEND

- PROPERTY LINE
- EXISTING EOP
- 5231.00 PROPOSED SPOT ELEVATION
- SETBACK
- (6920) EXISTING MAJOR CONTOUR
- 6920 PROPOSED MAJOR CONTOUR
- GRASSED SWALE
- 2.0% FLOW DIRECTION & SLOPE
- FFE FINISHED FLOOR ELEVATION (ESTIMATED)
- FFE FINISHED FLOOR ELEVATION (ESTIMATED)
- SCL SF — SF — SILT FENCE (OR SEDIMENT CONTROL LOG) – INITIAL
- VTC VEHICLE TRACKING CONTROL – INITIAL
- CWA CONCRETE WASHOUT AREA – INITIAL
- SSA STABILIZED STAGING AREA – INITIAL
- LIMITS OF DISTURBANCE
- SM SEEDING & MULCHING – INTERIM/FINAL
- ECB EROSION CONTROL BLANKETING (REQUIRED ON ALL SLOPES STEEPER THAN 4:1)

REFER TO DOUGLAS COUNTY DESC PLAN STANDARD NOTES AND DETAILS FOR INSTALLATION DETAILS AND SEEDING MIX CHARTS. E&SC SHALL BE INSTALLED IN PHASES PER BELOW.

1 PHASE I – INITIAL DRAINAGE, EROSION, & SEDIMENT CONTROL MEASURES

2 PHASE II – INTERIM DRAINAGE, EROSION, & SEDIMENT CONTROL MEASURES

3 PHASE III – FINAL DRAINAGE, EROSION, & SEDIMENT CONTROL MEASURES

THE DRAINAGE, EROSION AND SEDIMENT CONTROL DRAWING INCLUDED HEREIN HAS BEEN PREPARED UNDER MY DIRECT SUPERVISION IN ACCORDANCE WITH THE REQUIREMENTS OF THE GRADING EROSION AND SEDIMENT CONTROL (GESC) CRITERIA MANUAL OF DOUGLAS COUNTY, AS AMENDED.

E-SIGNATURE:

COLORADO LICENSED JEFFREY S. BIRCH 47389 PROFESSIONAL ENGINEER 11/3/23

ENGINEERING DIVISION ACCEPTANCE BLOCK

DEVELOPMENT REVIEW ENGINEER

DATE

THIS DESC PLAN HAS BEEN REVIEWED BY DOUGLAS COUNTY FOR DRAINAGE, EROSION, AND SEDIMENT CONTROL IMPROVEMENTS ONLY

COLORADO 811 KNOW WHAT'S BELOW. CALL BEFORE YOU DIG.

REVISIONS

REV#	DATE	DESCRIPTION

PHASED DESC PLAN

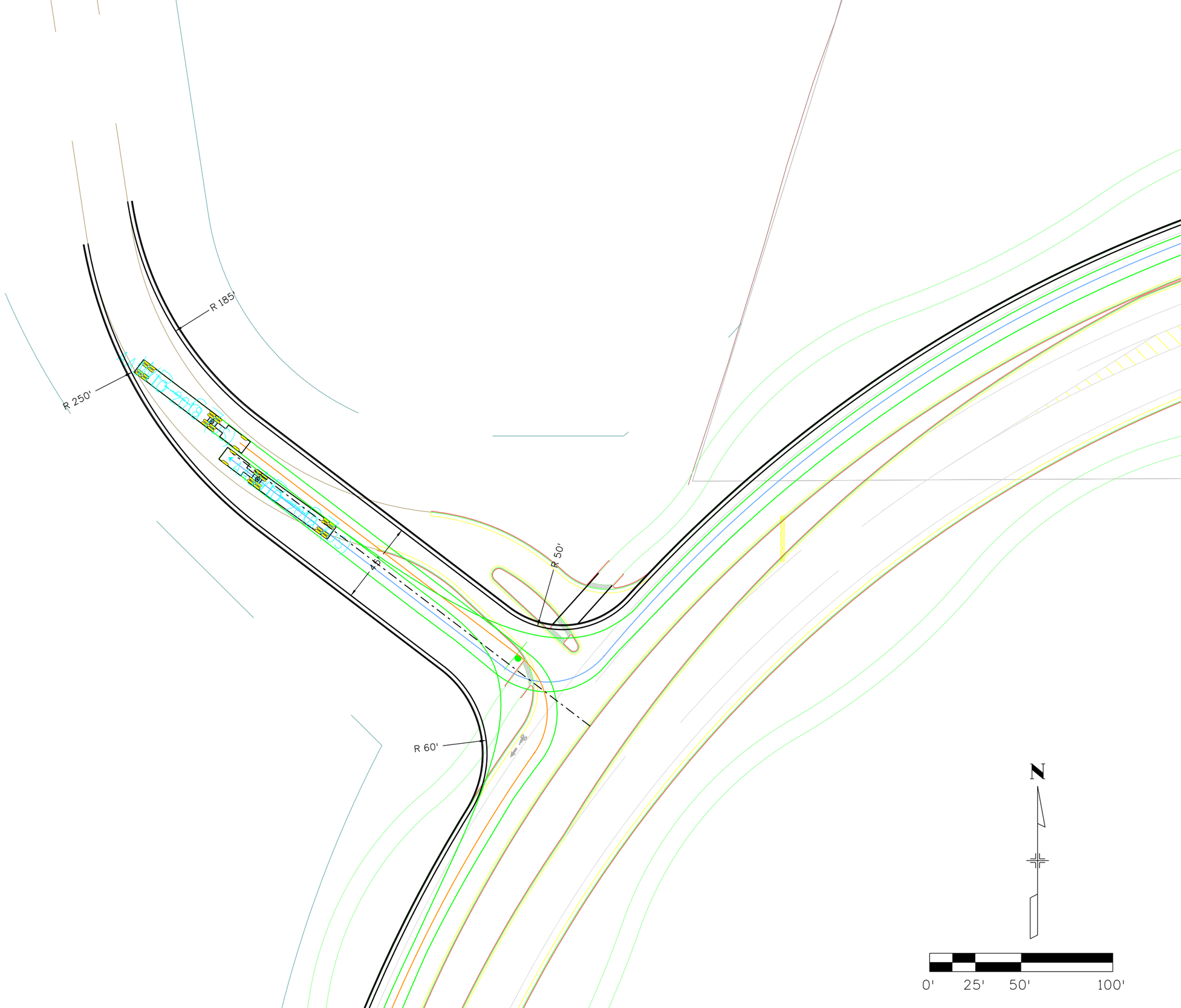
PROJECT LOCATION:
93 TWIN OAKS
DOUGLAS COUNTY
COLORADO

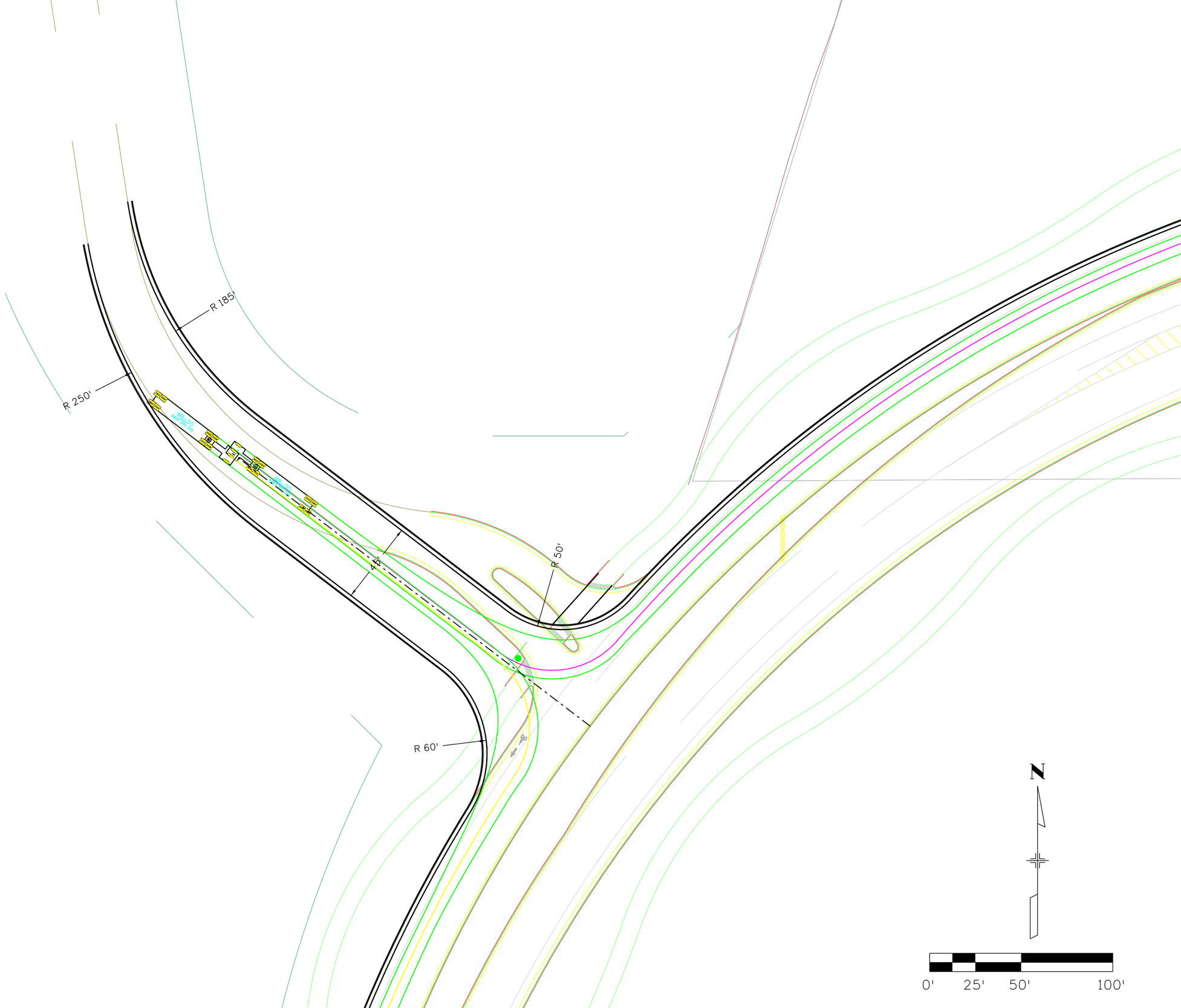
PREPARED FOR:
Twin Mesa Metropolitan District

PREPARED BY:
Colorado Civil Service & Design, Inc.
P.O. BOX 68
FRANKTOWN, CO. 80116
PHONE: 303.660.1393

JOB NUMBER: 23-184
DRAWN BY: JD
DATE: 5-31-23
DESIGN BY: JD
SCALE: NOTED
SHEET: 1 OF 1

Twin Mesa Metropolitan District New Service Plan
SV2023-003
Planning Commission Supplemental Memo Page 1220 of 1222


R 185'
R 250'
R 50'
R 60'
40'
0'
25'
50'
100'


R 185'
R 250'
R 50'
R 60'
45'
N
0'
25'
50'
100'