BOARD OF COUNTY COMMISSIONERS LAND USE MEETING/PUBLIC HEARING

TUESDAY, MARCH 24, 2026

AGENDA

Tuesday, March 24, 2026 **2:30 PM** **Hearing Room**

2:30 PM

1. Call to Order

a. Pledge of Allegiance

b. Attorney Certification of Agenda

c. Commissioners Disclosure for Items on This Agenda

2. Land Use Meeting Agenda Items

No Items

3. Public Hearing Agenda Items

a. Pinery Village Filing 2 - Minor Development Final Plat - Project File: SB2021-049.
Mike Pesicka, AICP, Principal Planner — *Department of Community Development*

Attachments: Cover Page
Staff Report - SB2021-049

b. Resolution to Amend the Douglas County Building Codes by Adopting the 2024 International Codes, the 2026 National Electrical Code, the Colorado Model Electric Ready and Solar Ready Code, with Amendments, and the Douglas County Wildfire Resiliency Code.

Matthew Dziubanski, Chief Building Official and Tim Pendleton, Deputy Chief Building Official — *Building Department*

Attachments:
Cover Page
BOCC Staff Report Building Code- 2026
Final- Amendments 2024 Code Adoption- Attachmet A and B
Resolution - Adoption of 2024 I Codes and State Codes MC & MD edits
BOCC Staff Report Addendum- 2026
CAHB CWRC Code Recommendations
HBA Support Letter

c. Resolution Supplementing the 2026 Adopted Budget for the County of Douglas, Colorado to Appropriate Restricted, Committed, and Assigned Fund Balances in the Amount of $42,923,905 for the Re-Appropriation of Prior Year Purchase Orders.

Ryan Bolger, Budget Analyst — *Budget*

Attachments:
Cover Page
PO Roll Supplemental 3.24.26

4. Adjournment

The Next Land Use Meeting / Public Hearing Will be Held on Tuesday, April 14, 2026 @ 2:30 p.m.

MEETING DATE: March 24, 2026

STAFF PERSON RESPONSIBLE: Mike Pesicka, AICP, Principal Planner

DESCRIPTION: Pinery Village Filing 2 - Minor Development Final Plat - Project File: SB2021-049.

SUMMARY: The request is for approval of a minor development final plat consisting of 3 lots and 7 tracts within the Pinery Planned Development.

STAFF ASSESSMENT: Staff has evaluated the minor development final plat request in accordance with Article 6A of the Douglas County Subdivision Resolution. Should the Board of County Commissioners find that the approval standards for the minor development final plat are met, the following proposed conditions should be considered for inclusion in the motion:

1. Prior to approval of the minor development final plat, the associated Subdivision Improvements Agreement - Intergovernmental Agreement for the subdivision shall be approved by the Board.
2. Prior to recordation of the final plat, the applicant shall provide a copy of an executed license agreement with Xcel Energy.
3. During construction activity within the development, the applicant, its successors and assigns shall conduct a burrowing owl study if any earth moving will take place between March 15th and October 31st.
4. During construction activity within the development, the applicant, its successors and assigns shall take all reasonable care to watch for historic resources, paleontological resources, and other cultural history resources and shall immediately notify Douglas County and complete appropriate Colorado Office of Archaeology and Historic Preservation Data management forms in the event of such discovery.
5. Prior to recordation of the final plat, technical corrections to the final plat exhibit shall be made to the satisfaction of Douglas County.
6. All commitments and promises made by the applicant or the applicant's representative during the public hearing and/or agreed to in writing and included in the public record have been relied upon by the Board of County Commissioners in approving the application; therefore, such approval is condition upon the applicant's full satisfaction of all such

commitments and promises.

REVIEW:

Steven E Koster	Approve	2/26/2026
Jeff Garcia	Approve	2/27/2026
Christie Guthrie	Approve	2/27/2026
Doug DeBord	Approve	3/2/2026
Samantha Hutchison - FYI	Notified - FYI	3/2/2026
Steven E Koster	Approve	3/12/2026
Jeff Garcia	Approve	3/13/2026
Christie Guthrie	Approve	3/13/2026
Doug DeBord	Approve	3/17/2026
Samantha Hutchison - FYI	Notified - FYI	3/17/2026

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Doug DeBord	Approve	3/17/2026

ATTACHMENTS:

Staff Report - SB2021-049

DOUGLAS COUNTY
COLORADO

Minor Development Final Plat Staff Report

Date:	March 11, 2026
To:	Douglas County Board of County Commissioners
Through:	Douglas J. DeBord, County Manager
From:	Kati Carter, AICP, Director of Community Development
CC:	Mike Pesicka, Principal Planner Jeanette Bare, AICP, Planning Manager Steven E. Koster, AICP, Deputy Director
Subject:	**Pinery Village Filing 2, Minor Development Final Plat**
Project File:	**SB2021-049**

Planning Commission Hearing:	**March 2, 2026 @ 6:00 p.m.**
Board of County Commissioners Hearing (continued):	**March 10, 2026 @ 2:30 p.m.**
Board of County Commissioners Hearing:	**March 24, 2026 @ 2:30 p.m.**

I. EXECUTIVE SUMMARY

The request is for approval of Pinery Village Filing 2, a minor development final plat to create three new super-block lots for future commercial development and seven tracts for drainage, open space, and public right-of-way on 87.85 acres. Further Replats and Site Improvement Plan applications are anticipated in the near future.

The project site is located northwest of the intersection of State Highway 83 (SH 83) and Wellspring Drive. The site is zoned Planned Development (PD) within the Pinery PD and is part of the Pinery Separated Urban Area (SUA) of the 2040 Comprehensive Master Plan. The property is served by the Pinery Water and Wastewater District with access from an extension of Pinery Center Boulevard.

The application has been in process since 2021. During this time the applicant has been addressing drainage and utility issues and working with the Pinery Water and Wastewater District to establish a location for a lift station and force mains to provide sanitary service to the northern area of the project site. A Subdivision Improvements Agreement-Intergovernmental Agreement (SIA-IGA) is scheduled for Board consideration on the same hearing agenda as the minor development plat.

The Planning Commission heard the application at its March 2, 2026, public hearing and recommended approval by a vote of 7 to 0.

II. APPLICATION INFORMATION

A. Applicant

Pinery Owner, LLC
1919 14th St., Ste 700
Boulder, CO 80302

B. Applicant's Representative

Craig Campbell
1919 14th St., Ste 700
Boulder, CO 80302

C. Request

Approval of a minor development final plat consisting of 3 lots and 7 tracts within the Pinery PD. An SIA-IGA is also being considered with the minor development plat.

D. Process

A minor development final plat application for commercial use is processed pursuant to Article 6A of the Douglas County Subdivision Resolution (DCSR). Article 6A states that the intent of the process is "To provide a streamlined review process for nonresidential and multifamily subdivisions."

Section 604A.08 of the DCSR states: "The Board shall evaluate the minor development final plat application, staff report, referral agency comments, applicant responses, the Planning Commission recommendation, and public comment and testimony, and shall approved, approve with conditions, continue, table for further study, remand to the Planning Commission, or deny the minor development final plat. The Board's action shall be based on the evidence presented; compliance with adopted County standards, regulations, and policies; and other guidelines."

E. Location

The site is generally located northwest of the intersection of State Highway 83 (SH 83) and Wellspring Drive. A vicinity map, zoning map, and aerial map are attached to the staff report and show the general location of the project area.

F. Project Description

The applicant proposes 3 new superblock lots and 7 tracts within the Pinery Village subdivision of the Pinery PD. The proposed lots are being platted for future commercial and light industrial development. The project includes the extension of Pinery Center Boulevard to the project's northern boundary and a possible future connection with the Town of Parker. The project area is located within Planning Areas 41, 42, 43, and H-1 of the Pinery PD.

III. CONTEXT

A. Background

The site was rezoned to Planned Development (PD) with approval of the Pinery PD by the Board of County Commissioners in 1982. The PD has since the original approval anticipated commercial, business, and light industrial uses in the area around the wastewater treatment plant. By 1987, the plan had been modified to preserve the Cherry Creek floodplain as open space (rather than a golf course as previously anticipated) but continued to depict the land on the west side of SH 83 for commercial uses.

In 2019, the 27th Amendment changed the boundaries and roadway configurations associated with PAs 38, 41, 42, and 43. PAs 41, 42, and 43 were reconfigured by realigning the proposed configuration of "Collector Road B." PA 38 was modified to remove a previously anticipated loop road.

In 2021, the 28th Amendment approved changes to the Pinery PD map to revise the boundaries of PAs 41, 42, and 43 (Business Park), and revise associated language in the Pinery PD Development Guide to add additional uses and clean up existing text. In addition, PA 44 (Uplands Commercial) was eliminated and converted to Open Space, and the Uplands Commercial development standards text was removed from the Pinery PD Development Guide. Finally, the applicant proposed modifications to the existing access points from SH 83, and realignment of a previously approved drainageway.

In 2025, the 32nd Amendment was approved to allow mini warehouse uses in Business Park Planning Areas 38 and 41 where it was currently only allowed in Business Park Planning Areas 42 and 43.

There have been several replat applications approved for the area south of Wellspring Drive (Pinery Village Filing 1) that subdivided the area into buildable lots, one of which will be for a new King Soopers grocery store. The northern portion of Pinery Village is the subject of the current minor development plat request.

B. Adjacent Land Uses and Zoning

The project site is zoned PD within the Pinery PD with properties to the south, east, and west also within the Pinery PD. Properties to the north are zoned Agricultural One (A-1) or located within the Town of Parker.

Zoning and Land Use

	Zoning	Land Use
North	Agricultural One (A-1), Town of Parker	Open Space, agricultural uses
South	Pinery PD	Commercial

	Zoning	Land Use
East	Pinery PD, Reata South PD	Open Space, golf course, elementary school
West	Pinery PD	Open Space, wastewater treatment facility

IV. PHYSICAL SITE CHARACTERISTICS

A. Site Characteristics and Constraints

The project site consists of rolling terrain that generally slopes down from east to west towards Cherry Creek, and includes native grasses, shrubs, and various species of trees along Cherry Creek. The site is currently undeveloped. A Pinery Water and Wastewater treatment facility is located just west of the project area. No physical characteristics of the land would preclude development of the property.

B. Access

The project site is accessible from SH 83 via Wellspring Drive (which is now constructed) and Pinery Center Boulevard which is now open from N. Pinery Parkway to Wellspring Drive. Pinery Center Boulevard will be extended north to the Town of Parker as part of this minor development application. This road will be a public road, dedicated to the County via the minor development plat. Additional right-of-way (ROW) will be dedicated to Douglas County as Tract F for future expansion of SH 83. Engineering Services has reviewed and approved the Traffic Impact Study.

C. Soils and Geology

The Colorado Geological Survey (CGS) reviewed the request and stated that there are no geologic hazards or unusual geotechnical constraints known or suspected to be present that would preclude the proposed minor development final plat from being approved. CGS stated that additional soil analysis will be needed at the time of site design and building permit when building locations and loads are known.

D. Drainage and Erosion

A Phase III Drainage Report and Grading Erosion Sediment Control Plan (GESC) have been reviewed and accepted by Engineering Services. Regional drainage is available for the entire project area.

E. Floodplain

There is mapped 100-year floodplain within the bounds of the minor development plat, but it is not proposed to be developed and lies within open space planning areas of the Pinery PD.

F. Wildlife

The 2040 CMP Wildlife Resources map identifies this site as being of low wildlife habitat value with the exception of the Cherry Creek riparian areas, which are identified as moderate habitat value. Those portions of the site are contained within

Tract H, which is conveyed to the Pinery Commercial Metro Districts 1 and 2 for ownership and maintenance as an open space and drainage tract. Colorado Parks and Wildlife reviewed the referral request and stated that they have no objections to the application moving forward as proposed and they advise the applicant to refer to a previous comment letter from CPW dated February 11, 2020, for additional wildlife concerns and development recommendations for this area. The letter included a recommendation that a burrowing owl survey be performed if any earth moving activity occurs between March 15th and October 31st. This has been added as a condition of approval with this minor development application.

G. Historic Preservation

The Douglas County Curator recommended a Class II cultural resource survey for the site which was subsequently submitted by the applicant. The results of the survey noted that the site has no identified cultural resources.

V. PROVISION OF SERVICES

A. Schools

No land dedication or capital mitigation is required for this application as it does not create any new residential lots.

B. Fire Protection

South Metro Fire Rescue (SMFR) provides fire and emergency medical services to the site. SMFR had no objections to the proposed minor development final plat.

C. Sheriff Services

The Douglas County Sheriff's Office (DCSO) provides emergency services to the site. DCSO had no comments on the proposed minor development final plat. No response was received from DCSO E011 or the Office of Emergency Management.

D. Water

Water service is provided by the Pinery Water and Wastewater District (PWWD), which indicated its willingness and ability to provide water service to the project site within a letter dated January 5, 2026.

The Colorado Division of Water Resources (CDWR) provided correspondence indicating that the proposed water supply is adequate and can be provided without causing injury to decreed water rights.

E. Sanitation

Sanitation will be provided by the Pinery Water and Sanitation District (PWWD). The January 6, 2026, letter indicates the District's willingness and ability to serve the project with sanitary services. In October of 2022, the applicant received approval of a Location and Extent to construct a lift station and force mains to provide service to the north part of the project area. The lift station and force main will be owned and

maintained by the Pinery Commercial Metro District No. 1 and 2. The Tri-County Health Department provided a favorable recommendation regarding the proposed method of sanitary service.

F. Utilities

Utility service providers are AT&T , CenturyLink, Comcast, CORE (electric), and Xcel (gas). AT&T indicated that there may be a conflict with existing facilities along SH 83 and requested additional information. AT&T did not respond to follow-up correspondence. CORE is requesting additional utility easements be added to the plat exhibit and they have been added by the applicant. Xcel made the applicant aware of an existing high-pressure gas line in the project area and requested that a note be added to the plat, regarding existing easements and that additional easements may need to be granted to Xcel. The applicant has added the requested note to the plat exhibit. Xcel has also requested that the applicant enter into a license agreement prior to any final approval of the plat.

G. Dedications

A sanitary sewer easement will be dedicated to the Pinery Commercial Metro District No. 2 for a sanitary force main. Drainage easements will be dedicated to the Pinery Commercial Metro District No 2 for the drainage and stormwater facilities within proposed Lots 1 and 2. A back-up easement over the subdivision is also granted to Douglas County for the purpose of accessing and maintaining these improvements.

Pinery Center Boulevard will be dedicated to Douglas County for public right-of-way and will extend to the north property line for a possible future connection into the Town of Parker. A temporary access easement will be dedicated at the north end of Pinery Center Boulevard Area until a connection to the north is established. Tract F will dedicate ROW to the County for future expansion of SH 83. Tract D will be dedicated to RTD for a future park-n-ride facility.

A number of existing easements are present throughout the site, including water, sewer, drainage and utility easements within proposed Lots 1, 2 and 3 and along Pinery Center Blvd. CDOT slope easements along Parker Road right-of-way are within proposed Tract E and Lot 3. A 50-foot-wide Xcel high pressure gas easement is present within Tracts A, D, and G, and Lots 1, 2, and 3, and the Pinery Center Boulevard right-of-way

Public Right-of-way	Tract F will be dedicated to Douglas County as public right-of-way for SH 83. Pinery Center Blvd will be dedicated to Douglas County
Utility Easements	Utility easements for utility purposes, including but not limited to gas, electricity, telephone, and cable communication services.

Drainage and Blanket Access Easements	To Douglas County for access to drainage facilities in the event that the system owner fails to maintain the improvements.
Tracts A, B, C, and E	Dedication to the Pinery Commercial Metro District No. 2 for open space and drainage purposes.
Tract G	Dedication to the Pinery Commercial Metro District No. 2 for a sanitary sewer lift station, building, operation, and maintenance purposes.
Landscape Easement	20' landscape easement along SH 83 shall be owned and maintained by the Pinery Commercial Metro District No. 1 and 2.
Tract D	Dedicated to RTD for a future park-n-ride facility.

H. Parks and Trails, and Open Space

No park dedication is necessary as this requirement has previously been met for the Pinery PD. A new trail head and tot lot were conditions of approval as part of Pinery Village Filing 1 and are currently under construction.

I. Subdivision Improvements

The intent of the County's minor development process is "to provide a streamlined review process for nonresidential and multifamily subdivision." Per the DCSR, specific engineering reports, studies, and construction plans are required to be submitted and finally accepted or approved by Public Works Engineering with a minor development application. Cost estimates for the public and private improvements are generated from the approved construction plans and incorporated into the subdivision improvements agreement-intergovernmental agreement (SIA) for the plat. Per Section 604.07, the SIA must be approved by the County prior to the Board hearing on the minor development final plat.

Required improvements for Pinery Village Filing 2 include subdivision drainage facilities and wet and dry utilities, and grading and drainage facilities for the construction of Pinery Center Boulevard. All required engineering reports, studies, and construction plans for the plat have been reviewed by Public Works Engineering with only minor technical corrections remaining. It is anticipated that the construction plans and SIA will be approved prior to the Board hearing on the final plat. There is one future roadway connection, a short segment of Pinery Center Boulevard, that will be the responsibility of the Pinery Commercial Metro District to construct in the future. This improvement requires a SIA-IGA which is scheduled for Board consideration on the same agenda as the minor development plat.

VI. PUBLIC NOTICE AND INPUT

In accordance with Section 608A of the DCSR, public notice is required to be published in the Douglas County News-Press and posted on the site by the applicant. Adjacent landowners were also mailed courtesy notices at the beginning of the referral period.

All referral agency comments are outlined in the Referral Agency Response Report, as well as the Referral Response letters attached to this staff report. Staff received no written public comments for this application. The Pinery HOA did not respond to the referral request. The applicant's response letter to referral responses is included as an attachment to this staff report.

VII. PLANNING COMMISSION HEARING

The Planning Commission heard the application at its March 2, 2026, public hearing and recommended approval by a vote of 7 to 0. No one from the public spoke about the application. There were no substantive comments or questions raised by the Planning Commission members.

VIII. STAFF ANALYSIS

A minor development final plat may be approved upon the findings by the Board of County Commissioners that the following standards have been met:

603A.01: Conforms with the goals, objectives, and polices of the Master Plan:
Staff Comment: The property is located within the Pinery Separated Urban Area (SUA) as identified in Section 2 of the 2040 CMP. The 2040 CMP states that while approval criteria for land use applications require a finding of compliance with the 2040 CMP, "…the competing values of the Plan must be balanced through the public review process to achieve the larger vision of the community." As such, the 2040 CMP acknowledges its own competing values and that implementation can only be achieved through the balancing of community values during the review process. The proposed minor development application is consistent, on balance, with the goals and objectives of the 2040 CMP for urban development within this part of the County.

Consistent with the objectives and policies of Urban Land Use Goal 2-1, the request proposes urban development in a designated urban area, specifically the Pinery SUA. Objective 2-15A supports the logical buildout of the SUAs. This site has been zoned for nonresidential development within the Pinery PD since 1982.

Consistent with the objectives and policies of Urban Land Use Goal 2-9, the request proposed urban development within an area that has existing and planned capacity in services and infrastructure. The site is located in and will be served by an existing water and sanitary sewer district, and nearby roads to serve the development have been constructed.

603A.02: Addresses the design elements established in Section 404 – Preliminary Plan, herein:
Staff Comment: The minor development final plat has addressed all applicable subdivision design elements as noted herein"

Per Section 404.01 – Each of the proposed lots meets the applicable requirements for minimum lot size, and setbacks.

Per Section 404.02 - Geotechnical conditions have been reviewed and determined acceptable. Floodplain areas are preserved as open space.

Per Section 404.03 – In accordance with commitments within the Pinery PD specific to this area, commercial development will be screened from SH 83 by landscaping within tracts and easements to be owned and maintained by the metropolitan district. Additional landscape buffering will be installed at the time of future replat or SIP applications.

Per Section 404.04 – Drainage and grading designs have been reviewed and accepted by Engineering Services.

Per Section 404.05 – Drainage design has been incorporated into the site's infrastructure construction plans.

Per Section 404.06 – No know archaeological or historic resources are present on site.

Per Section 404.07 – Roadway design will provide for additional vehicular and pedestrian connections through the subdivision.

Per Section 404.08 – Recommendations within the technical studies, including the geotechnical report and drainage report, will be further implemented through SIP, building permit, and construction plan processes.

603A.03: Conforms with Section 18A, Water Supply Overlay District Section of the Zoning Resolution.

1803A.01: The applicant has demonstrated that the water rights can be used for the proposed uses.
Staff Comment: PWWD has indicated that it has sufficient water rights that may be legally used to provide water service to this commercial subdivision.

The CDWR reviewed the application and indicated that the amount of water needed for the subdivision can be provided without affecting existing decreed water rights.

1804A.02: The reliability of a renewable right has been analyzed and is deemed sufficient by the County based on its priority date within the Colorado System of Water Rights Administration.

Staff Comment: All Denver Basin Groundwater beneath the property will be dedicated to PWWD. PWWD provided all required water documentation relative to its existing water portfolio and reserves the right to utilize any of its conjunctive use water supplies to serve the subdivision. This water portfolio has been fully evaluated with previous development applications served by PWWD.

1803A.03: The Water Plan is deemed adequate and feasible by the County to ensure that water supply shortages will not occur due to variations in the hydrologic cycle.
Staff Comment: A Water Plan is not required for projects served by a District.

1803A.04: The Water Plan is sufficient to meet the demand applicable to the project based on the minimum water demand standards in Section 1805A herein.
Staff Comment: A Water Plan is not required for projects served by a District.

603A.04: Provides for a public wastewater collection and treatment system, and, if other methods of wastewater collection and treatment are proposed, such systems shall comply with State and local laws and regulations.
Staff Comment: PWWD will provide wastewater services to the property. Tri-County Health Department provided a favorable recommendation regarding proposed sanitary service.

603A.05: Identifies all areas of the proposed subdivision, which may involve soil or topographical conditions presenting hazards or requiring special precautions have been identified by the subdivider and that the proposed uses of these areas are compatible with such conditions.
Staff Comment: Soils present on the site do not preclude development and CGS has no objections to the subdivision.

603A.06: Provides adequate drainage improvements.
Staff Comment: A Phase III Drainage Report was submitted by the applicant and accepted by Engineering Services.

603A.07: Provides adequate transportation improvements.
Staff Comment: The applicant's traffic impact study has been reviewed and by Engineering Services and found to be acceptable with the roadway improvements identified and secured in the SIA.

603A.08: Protects significant cultural, archaeological, natural, and historical resources, and unique landforms.
Staff Comment: The Douglas County Historic Preservation Board indicated that there are no known significant cultural, archaeological, natural, historical, or unique landforms on the site.

603A.09: Demonstrates the extraction of any known commercial mining deposit shall not be impeded.

Staff Comment: No known commercially viable mining deposits will be interfered with by this application.

603A.10: Has available necessary services, including fire and police protection, recreation facilities, utility service facilities, streets, and open space to serve the proposed subdivision.
Staff Comment: The proposed subdivision will be served by South Metro Fire Rescue, the DCSO, CORE electric, Comcast, CenturyLink, and Xcel. Roads are to be public and dedicated to Douglas County.

IX. STAFF ASSESSMENT

Staff has evaluated the minor development final plat request in accordance with Article 6A of the DCSR. Should the Board of County Commissioners find that the approval standards for the minor development final plat are met, the following proposed conditions should be considered for inclusion in the motion:

1. Prior to approval of the minor development final plat, the associated SIA-IGA for the subdivision shall be approved by the Board.

2. Prior to recordation of the final plat, the applicant shall provide a copy of an executed license agreement with Xcel Energy.

3. During construction activity within the development, the applicant, its successors and assigns shall conduct a burrowing owl study if any earth moving will take place between March 15th and October 31st.

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6. All commitments and promises made by the applicant or the applicant's representative during the public hearing and/or agreed to in writing and included in the public record have been relied upon by the Board of County Commissioners in approving the application; therefore, such approval is condition upon the applicant's full satisfaction of all such commitments and promises.

ATTACHMENTS **PAGE**

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Aerial Map 20
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Pinery Water and Wastewater District Will Serve Letter 112
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Minor Development Exhibit 277

DOUGLAS COUNTY
COLORADO

Department of Community Development

www.douglas.co.us

Planning Services

LAND USE APPLICATION

Please fill in this application form completely. An incomplete application will not be processed.

Note: Neither the Planning Commission nor the Board of County Commissioners should be contacted regarding an open application.

OFFICE USE ONLY

PROJECT FILE #:

PROJECT NAME: File #SB2021-049/Name: Pinery Village Filing 2, Minor Development

PROJECT TYPE: Minor Development Plat

MARKETING NAME: Pinery Village Filing No 2

SITE ADDRESS: NWC of Wellspring Drive and Parker Road (Hwy 83)

OWNER(S):

Name(s): Pinery Owner, LLC

Address: 1919 14th Street, Suite 700, Boulder, CO 80302

Phone: 303-720-4436

Email: craig@cairnrealestateinvestments.com

AUTHORIZED REPRESENTATIVE *(requires notarized letter of authorization if other than owner)*

Name: Craig Campbell

Address: same

Phone: same

Email: same

PLANNING FEES:

ENGINEERING FEES:

TOTAL FEES:

RELATED PROJECTS:

LEGAL DESCRIPTION:

Subdivision Name: Pinery Village

Filing #: 2 Lot #: _____ Block #: _____ Section #: 3 & 10 Township: 7 South Range: 66 West

STATE PARCEL NUMBER(S): _____

ZONING:

Present Zoning: Commercial Proposed Zoning: _____ Gross Acreage: 87.848

Gross Site Density (DU per AC): _____ # of Lots or Units Proposed: _____

SERVICE PROVIDERS:

Fire District: South Metro Metro District: Pinery Commercial MD Gas: Xcel

Water: PWWD Sewer: PWWWD Electric: CORE

Roads: ☐ Public ☐ Private (please explain): _____

To the best of my knowledge, the information contained on this application is true and correct. ***I have received the County's information sheet regarding the Preble's Meadow Jumping Mouse.***

Applicant Signature

2/2/2026
Date

Pinery Village Filing No. 2 Minor Development

PROJECT NARRATIVE

General Project Concept

TF Pinery West, LP is planning and engineering the northern 77 acres of Pinery Village in the Pinery West PD. The property is currently zoned Planned Development (PD) and is part of The Pinery 28th Amendment. The Minor Development includes the extension of Pinery Center Boulevard to the north property line, channelizing North Pinery Creek which bisects the property, and creates three (3) commercial/industrial lots for future development, and a lot for a planned RTD Park-N-Ride facility. Six (6) new tracts have also been created through this Minor Development. Tracts A, B, and E are owned and maintained by the Pinery Commercial Metro District and are for the purposes of drainage and open space. Tracts C, D, and F will be dedicated to Douglas County as right of way. It is anticipated that the building square footage for these new lots will range from 360,000-480,000 square feet. This is based on the calculation of 55 Acres of developable land at a 1.5 to 2.0 F.A.R.

Proposed Development Timeframe

Development is anticipated to begin in 2022 and will proceed over the course of the next 10 years.

ARTICLE 6A MINOR DEVELOPMENT NONRESIDENTIAL AND MULTI-FAMILY | 603A APPROVAL STANDARDS

A minor development final plat may be approved upon the finding by the Board that the minor development final plat:

603A.01 *Conforms with the goals, objectives, and policies of the Master Plan.*

This Minor Development Application does not propose anything that conflicts with the overall vision of the approved Master Plan. Lots and major infrastructure are laid out according to the planning areas and uses outlined by the plan and allow for flexibility of future planned development.

603A.02 *Addresses the design elements established in Section 404 - Preliminary Plan, herein.*

This Minor Development Application addresses the design elements established in Section 404 – Preliminary Plan, as further expanded upon below.

603A.03 *Conforms with Section 18A, Water Supply - Overlay District section of the Zoning Resolution.*

This Minor Development Application conforms with Section 18A, Water Supply-Overlay District section of the Zoning Resolution. The property is within the Pinery Water and Wastewater District and an updated will-serve letter is being provided by the District.

603A.04 *Provides for a public wastewater collection and treatment system, and, if other methods of wastewater collection and treatment are proposed, such systems shall comply with State and local laws and regulations.*

This Minor Development Application provides for a public wastewater collection and treatment system that complies with State, and local laws and regulations. The property is within the Pinery Water and Wastewater District and a will-serve letter is being provided by the District.

603A.05 *Identifies all areas of the proposed subdivision which may involve soil or topographical conditions presenting hazards or requiring special precautions have been identified by the subdivider and that the proposed uses of these areas are compatible with such conditions.*

This Minor Development Application identifies all areas of the proposed subdivision which may involve soil or topographical conditions presenting hazards or requiring special precautions. All proposed uses are compatible with such conditions. An integral part of this design is the management of the existing drainage channel to Cherry Creek, which is now being consolidated to one discharge point from two.

603A.06 *Provides adequate drainage improvements.*

This Minor Development Application provides adequate drainage improvements. Stormwater management improvements are being proposed in accordance with the County's Storm Drainage Design and Technical Criteria Manual as documented in the *Final Drainage Report for Pinery Village Filing No. 2* prepared by Redland and submitted with this application.

603A.07 *Provides adequate transportation improvements.*

This Minor Development Application provides adequate transportation improvements according to those envisioned in the Master Plan, including a planned RTD Park-N-Ride center.

603A.08 *Protects significant cultural, archaeological, natural, and historical resources, and unique landforms.*

This Minor Development Application for Filing 02 does not include any significant natural and unique landforms. There are no known significant cultural, archaeological or historical resources on this property. An integral part of this design is the management of the existing drainage channel to Cherry Creek, which is now being consolidated to one discharge point from two. All proposed uses are compatible with the existing conditions of the site.

603A.09 *Demonstrates the extraction of any known commercial mining deposit shall not be impeded.*

This Minor Development Application demonstrates the extraction of any known commercial mining deposit shall not be impeded. There are no known mining deposits located on site.

603A.10 *Has available necessary services, including fire and police protection, recreation facilities, utility service facilities, streets, and open space to serve the proposed subdivision.*

This Minor Development Application has available necessary services, including fire and police protection, recreation facilities, utility service facilities, streets, and open space to serve the proposed subdivision. This is clearly defined and evidenced by the information in this Minor Development application and the 28th amendment to the Pinery Planned Development.

ARTICLE 4 PRELIMINARY PLAN, SECTION 404 DESIGN ELEMENTS

The following shall be considered in reviewing the subdivision design, as appropriate to the urban, nonurban, or other community context:

404.01 Lots are of an appropriate size and configuration for the site's characteristics and intended uses, and otherwise capable of meeting minimum zone district standards such as lot size, setbacks, and off-street parking.

Lots have been laid out and sized with reference to the approved Master Plan and allow for flexibility with future development of site.

404.02 Geologic hazards, floodplains, wildfire, or other hazardous conditions are mitigated or avoided.

Any known potential hazardous conditions have been taken into account in the designing of this Minor Development. Existing slopes have been flattened along SH 83, North Pinery Creek has been channelize to eliminate the shallow flooding across the property, a roadway is being provided interior to the property to provide fire protection access, and the developable areas are located outside of the floodplain.

404.03 Conflicts between proposed and surrounding land uses are minimized through lot and tract orientation, setbacks, landscaping, or other buffering techniques.

Filing 02 Plat is consistent with the requirements of the Pinery Planned Development and allowed uses. Platted ROW included in this filing provides vehicular connectivity with planned and future land uses to the north.

Highway 83 (Parker Rd) is located along the eastern edge of the property, which has been appropriately buffered through existing (and expanded) Open Space H-1 and added landscape improvements.

This filing is also fronted by Wellspring Drive to the south, within Filing 01 of the Pinery Planned Development, and will provide vehicular and pedestrian access into and through future lots in Filing 02.

Pinery Center Blvd is continued from Filing 01 into Filing 02 and provides buffering from the Pinery Water and Sanitation property (similar to Filing 01), and pedestrian trail connectivity to the Cherry Creek Trail network further to the west.

Filing 02 is a continuation of the direction established with the Filing 01 Minor Development Plat.

404.04 Streets and stormwater facilities are laid out with the ability to meet the Douglas County Roadway Design and Construction Standards, Storm Drainage Design and Technical Criteria Manual, and other applicable County regulations.

Streets and stormwater facilities have been laid out in accordance with these resources and meet all County requirements.

404.05 Elements of the site's natural terrain, drainageways, riparian areas, and vegetation are preserved or integrated into the subdivision layout.

Site's natural drainage has been integrated into the subdivision layout and managed through major infrastructure. Minor Development follows natural topography and features of the site and drainage follows the existing flow across the site.

404.06 Archeological and historical resources of special significance are protected.

No known archeological or historical resources are located within the proposed Minor Development area.

404.07 Opportunities for safe and convenient vehicular, pedestrian, and other connections within the subdivision and adjacent neighborhoods, shopping, employment, and recreational areas are provided.

Vehicular, pedestrian, and other connections throughout the subdivision are laid out according to the approved Master Plan and provide safe and convenient access to the site's offerings.

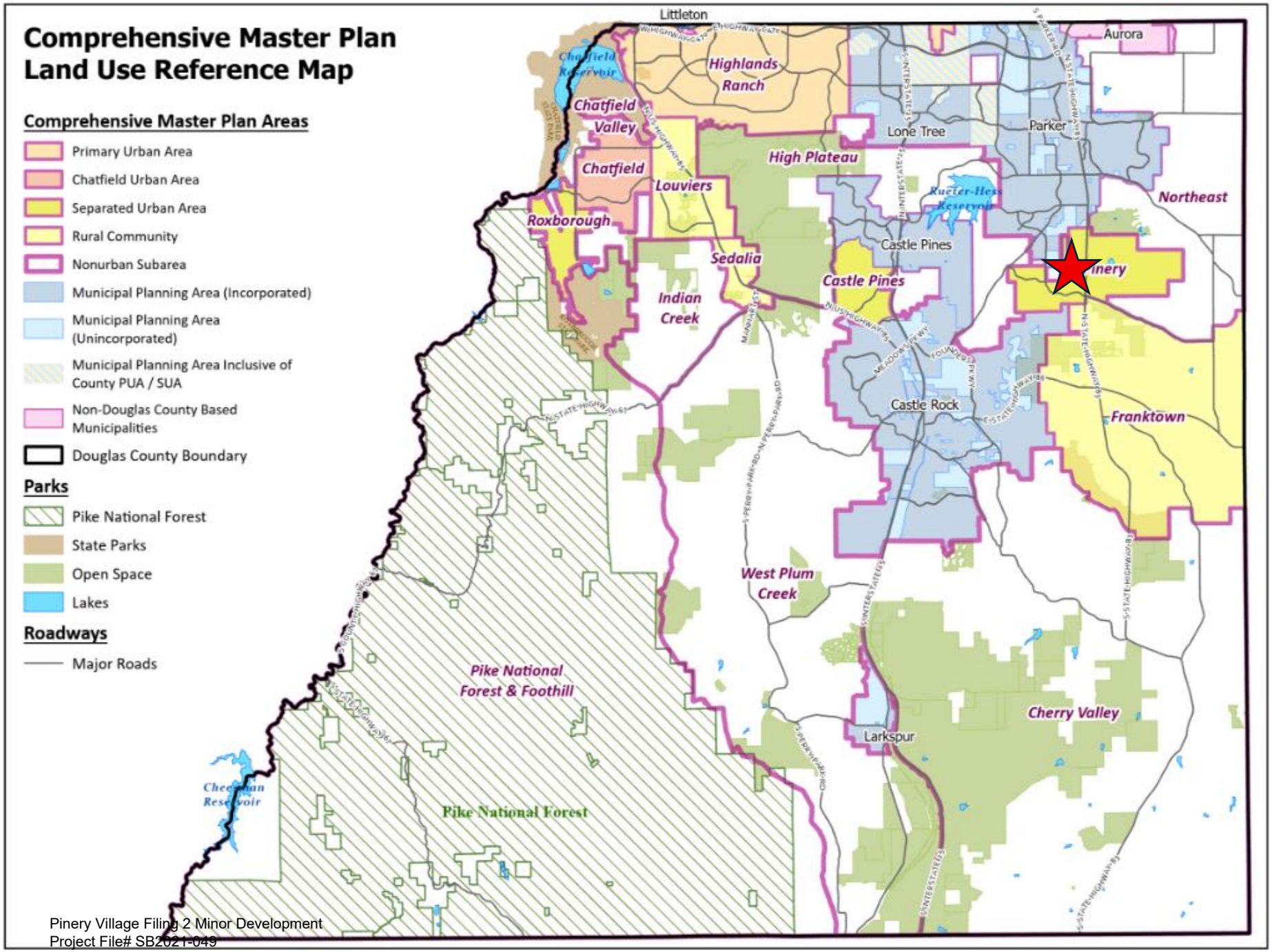
404.08 Specific recommendations of other required development reports or technical studies are implemented.

Any pertinent development or technical studies, such as the Drainage and Traffic studies, were referenced when laying out this Minor Development and utilized as appropriate and necessary.

Additional Items to Note:

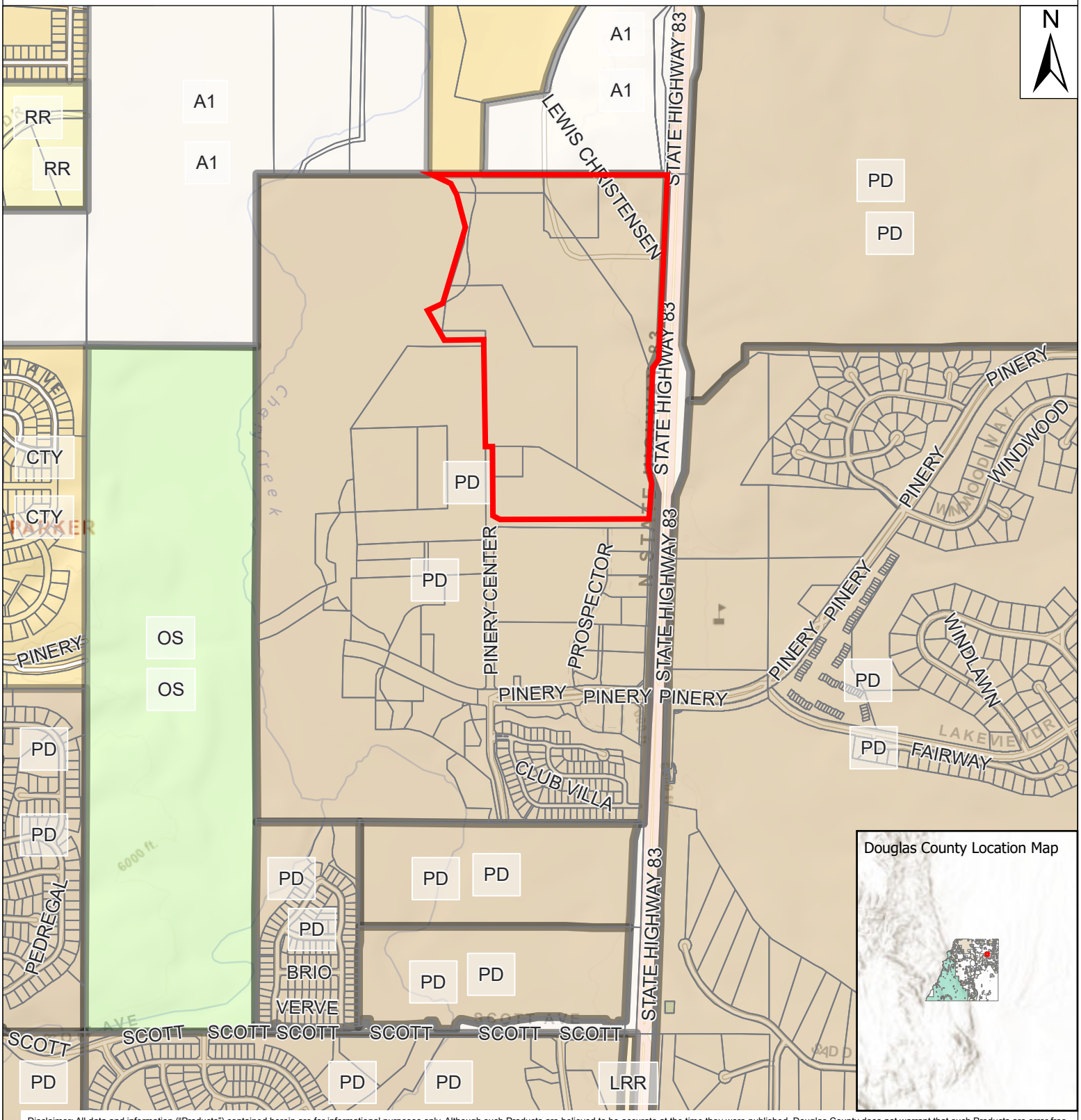
There were three approved CDOT access points that have been approved for the project along Highway 83. The first being North Pinery Parkway, which exists today and the future access of Wellspring Drive, which was platted with Filing 1. The third access point was eliminated (Road C), which was eliminated due to topography constraints of this access. There is no approved CDOT access for Lewis Christianson on the north side of the project and this access was never a part of any approved PD. Access will continue north from Pinery Center Blvd when the adjacent property owner develops. Other means of access and circulation for lots 2 and 4 will be a part of future Site Plans

Any park-related land requirements associated with Pinery Planned Development have been fulfilled through previous land use approvals, including the 2-acre dog park, the .21 acre tot-lot, and other Cherry Creek land use requirements.


Comprehensive Master Plan
Land Use Reference Map
Comprehensive Master Plan Areas
Primary Urban Area
Chatfield Urban Area
Separated Urban Area
Rural Community
Nonurban Subarea
Municipal Planning Area (Incorporated)
Municipal Planning Area (Unincorporated)
Municipal Planning Area Inclusive of County PUA / SUA
Non-Douglas County Based Municipalities
Douglas County Boundary
Parks
Pike National Forest
State Parks
Open Space
Lakes
Roadways
Major Roads
Littleton
Aurora
Highlands Ranch
Chatfield Reservoir
Chatfield Valley
Chatfield
Louviers
Roxborough
Lone Tree
Parker
High Plateau
Ruetter-Hess Reservoir
Northeast
Castle Pines
Sedalia
Indian Creek
Castle Pines
Castle Rock
Franktown
West Plum Creek
Pike National Forest & Foothill
Cherry Valley
Larkspur
Cheesman Reservoir
Pike National Forest

Pinery Village Filing 2, SB2021-049

DOUGLAS COUNTY COLORADO



Disclaimer: All data and information ("Products") contained herein are for informational purposes only. Although such Products are believed to be accurate at the time they were published, Douglas County does not warrant that such Products are error free.

Date Saved: 2/17/2026 9:02 AM

- A1 - AGRICULTURAL ONE
- LRR - LARGE RURAL RESIDENTIAL
- RR - RURAL RESIDENTIAL
- PD - PLANNED DEVELOPMENT
- OS - OPEN SPACE CONSERVATION
- PARCELS

Piney Village Filing 2, SB2021-049

DOUGLAS COUNTY COLORADO



Date Saved: 2/17/2026 8:37 AM

A1 - AGRICULTURAL ONE

PD - PLANNED DEVELOPMENT

OS - OPEN SPACE CONSERVATION

Project Name: Pinery Village Filing 2
Project File #: SB2021-049
Date Sent: 11/04/2021 **Date Due:** 12/02/2021

Agency	Date Received	Agency Response	Response Resolution
Addressing Analyst	11/04/2021	No Comment:	No Response Required.
Assessor		Received: Please be aware of the following comments and concerns: 1. Lot 2 & Tract E Pinery Village Filing 1 are being replatted by this subdivision. They should be listed in the legal description and plat sub-title. 2. Pinery Commercial Metro District 1 & 2 are the current owners of existing Tract E Pinery Village Filing 1 per plat dedication. They need to sign the plat as an owner. 2a. As platted, Lot 4 will be setup with mixed ownership and taxable status, which is very difficult for our office to track. Please clear title on Lot 4 via deed to eliminate the mixed ownership and taxable status. 3. There is a discrepancy regarding Tract C. The acceptance certificate, Land Use Table and Plat note 8 say dedication to the Pinery Commercial Metro 2, whereas Additional Tract Note 3 says dedication to Douglas County. 4. The vicinity map does not match the area being platted. 5. There is a missing dimension on the subdivision boundary on Sheet 2, the southeastern-most call 316.60 ft call is not dimensioned. -Per an email from the Assessor dated July 8, 2023, their comments have been addressed.	The applicant has provided updated documents to the Assessor, and their comments have been addressed.
AT&T Long Distance - ROW	11/04/2021	Received: I have attached an Earth map showing the project area in read and the buried AT&T Long Line Fiber Optics in yellow. As shown, there is a possibility of conflict along State HWY 83. Any other information you could provide about the projects would be appreciated in determining if a conflict will exist. On February 12, 2026, AT&T provided an updated response indicating that their facilities are location on the east side of SH 83 and there should be no conflict. Per an email from AT&T dated February 12, 2026, the long lines are located on the east side of SH 83 so there will be no conflicts.	No Response Required.
Black Hills Energy	11/04/2021	No Comment.	No Response Required.
Building Services	11/05/2021	No Comment.	No Response Required.
CenturyLink	11/15/2021	Received: Our engineer has reviewed this plat and their comments are: "I have no objections to this plat".	No Response Required.

Project Name: Pinery Village Filing 2
Project File #: SB2021-049
Date Sent: 11/04/2021 **Date Due:** 12/02/2021

Agency	Date Received	Agency Response	Response Resolution
Cherry Creek Basin Water Quality Authority	12/02/2021	Received: 1.The Authority's Control Regulation 72 requires construction and post-construction Best Management Practices (BMPs). 2. No exceptions taken with the proposed post construction BMPs using full spectrum detention. However please note this development appears to also be within the stream preservation area. Development in the stream preservation area requires additional post construction BMPs. Please see the control regulation document Chapter VI for additional guidance. Please provide additional information or justification in future submittals on how this is being met. 3. Provide construction BMP plan when available for our review and comment. 4. The Authority reserves the right to review and comment on future referrals for this project.	The applicant has acknowledged the comments. Any future referrals will be provided to the Authority.
Colorado Department of Transportation CDOT-Region 1	12/02/2021	Received: Following is a summary of comments received from CDOT. For details, please reference the letter dated December 2, 2021. -CDOT had comments related to the offsite flows and storm sewer design in the drainage report, traffic comments related to proposed traffic mitigation on Parker Road, proposed points of access on Parker Road, and accel and decel lanes at Wellspring Drive. -The applicant will need to adhere to the Access Control Plan for State Highway 83. CDOT does not object to removal of what was Collector Road "C". Extending the North-South collector to Stroh Rd is acceptable, but opportunity is lost in not providing a connection to Lewis Christensen Rd. -Applicant needs to review Figures 10 and 11 in the traffic study that project less traffic will occur on the SB to EB left turn movement between 2030-40. -Douglas County needs to ensure sufficient ROW is dedicated along State Highway 83 per the Corridor Optimization Plan to ensure auxiliary lanes, and room for multi-use pathways and utilities can occupy the ROW.	Revised documents were provided to CDOT for review. A response has not been received. -The applicant is dedicating Tract F to Douglas County for future ROW along SH 83.

Project Name: Pinery Village Filing 2
Project File #: SB2021-049
Date Sent: 11/04/2021 **Date Due:** 12/02/2021

Agency	Date Received	Agency Response	Response Resolution
Colorado Division of Water Resources	11/04/2021	Received: Following is a summary of comments received from the Division of Water Resources (DWR). For details, please reference their review letters dated July 29, 2022. -DWR provided a summary of the existing water portfolio from the Piney Water and Wastewater District (PWWD). -DWR also stated that is their opinion that the water supply for the development can be provided without causing injury to decreed water rights.	No Response Required.
Colorado Geological Survey	12/01/2021	Received: Following is a summary of comments received from the Colorado Geological Survey (CGS). For details please reference their review letter dated December 1, 2021. -CGS stated that no geologic hazards or unusual geotechnical constraints are known or suspected to be present that would preclude the proposed non-residential use and density. -Provided the recommendations in the study conducted by CTL are adhered to, and additional investigation and analysis are conducted once building locations and loads are known, CGS has no objection to approval of SB2021-049.	The applicant has acknowledged comments from CGS and will provide further analysis as the site develops.
Colorado Parks and Wildlife (Northeast DC)	11/30/2021	Received: Following is a summary of comments received from Colorado Parks and Wildlife. For details please reference their review letter dated November 30, 2021 Upon review of the proposed referral request, Colorado Parks and Wildlife (CPW) has no objections to the application moving forward as planned for approval. Please refer to the previous comment letter from CPW dated February 11, 2020 to Mr. Dan Avery for additional wildlife concerns and development recommendations.	The applicant has acknowledged comments from CPW and will coordinate with them on future earth moving activities to limit disturbance of burrowing owls
Comcast		No Response Received	No Response Required.
CORE Electric	12/01/2021	Received: CORE will require additional utility easements as shown on the attached markup.	The applicant has worked with CORE to add easements and CORE has acknowledged that dedication of additional easements will come with future replat and site plan applications.

Project Name: Pinery Village Filing 2
Project File #: SB2021-049
Date Sent: 11/04/2021 **Date Due:** 12/02/2021

Agency	Date Received	Agency Response	Response Resolution
Douglas County Historic Preservation	12/02/2021	Received: Upon researching the cultural resources on the property and the surrounding area, the Douglas County Curator recommends a Class II cultural resource survey of the project area. - In an email dated March 29, 2022, Douglas County Historic Preservation stated they had no comments on the Class II Cultural Resource Survey and there is nothing eligible to be listed on the National Register.	As requested by the Douglas County Curator, the applicant provided a Class II Cultural Resource Survey.
Douglas County Parks and Trails		No Response Received	No Response Required.
Douglas County School District		No Response Received	No Response Required.
Engineering Services	12/02/2021	Received: Following is a summary of comments from Engineering Services, for full details please reference the letter dated December 2, 2021. Engineering Services had comments related to plat notes, certificates, drainage easements, tracts for ROW, a requirement for a Subdivision Improvement Agreement, GESC comments, Construction Plan comments and Landscaping comments.	The applicant has provided revised plans and reports to address comments from Engineering Services. An SIA has also been provided for review and approval. The SIA needs to be approved by the BCC with the minor development final plat.
High Prairie Farms HOA		No Response Received	No Response Required.
Mile High Flood District		No Response Received	No Response Required.
Office of Emergency Management		No Response Received	No Response Required.
Open Space and Natural Resources		No Response Received	No Response Required.
Pinery Commercial Metro District		No Response Received	No Response Required.

Project Name: Pinery Village Filing 2
Project File #: SB2021-049
Date Sent: 11/04/2021 **Date Due:** 12/02/2021

Agency	Date Received	Agency Response	Response Resolution
Pinery Water and Wastewater District	11/18/2021	Received: Pinery Water and Wastewater District (PWWD) takes no exception to establish 4 commercial lots. The District is working with the developer to identify solutions for possible wastewater treatment and the associated collection system as gravity flow for the entirety of the project is not possible.	-In October 2022, the applicant received approval of a Location and Extent for a future lift station and force mains to address the comment from PWWD regarding gravity flow not being available for the entire site. The lift station and force mains will be owned and maintained by the Pinery Commercial Metro District No. 1 and 2.
RTD		No Response Received	No Response Required.
Sheriff's Office	11/22/2021	No Comment.	No Response Required.
Sheriff's Office E911		No Response Received	No Response Required.
South Metro Fire Rescue	11/22/2021	Received: South Metro Fire Rescue (SMFR) has reviewed the provided documents and has no objections to the proposed minor development. Applicants and Contractors are encouraged to contact SMFR regarding the applicable permit requirements for the proposed project.	No Response Required.
The Pinery HOA		No Response Received	No Response Required.
Town of Castle Rock	11/12/2021	Received: No concerns from the Town reviewers.	No Response Required.

Project Name: Pinery Village Filing 2
Project File #: SB2021-049
Date Sent: 11/04/2021 **Date Due:** 12/02/2021

Agency	Date Received	Agency Response	Response Resolution
Town of Parker Development Review	12/06/2021	Received: Following is a summary of comments received from the Town of Parker Development Review. For details please reference their letter dated December 6, 2021. The Town had comments related to future uses on the site, landscape buffering and design standards for future development, and incorporating pedestrian friendly infrastructure along Pinery Center Blvd. The Town would like to discuss possible annexation with the applicant.	-Development on future lots will address landscaping and buffering design standards. -Pinery Center Blvd will contain detached sidewalks to provide pedestrian friendly infrastructure. -The applicant has decided to not pursue annexation into the Town. -The Pinery PD and Douglas County Zoning Resolution contain development standards to address site and building design, as well as pedestrian connectivity.
Town of Parker Public Works		No Response Received	No Response Required.
Tri-County Health Department	11/29/2021	Received: Following is a summary of comments from the Tri-County Health Department (TCHD). For full details please reference the letter dated November 29, 2021. -A will-serve letter has been provided by Pinery Water and Wastewater District. Based on this letter, THCD is providing a favorable recommendation regarding the proposed method of sewage disposal.	No Response Required.
Wildfire Mitigation	11/08/2021	No Comment.	No Response Required.

Project Name: Pinery Village Filing 2
Project File #: SB2021-049
Date Sent: 11/04/2021 **Date Due:** 12/02/2021

Agency	Date Received	Agency Response	Response Resolution
Xcel Energy-Right of Way & Permits	12/09/2021	Received: Following is a summary of comments received from Xcel Energy. For details please reference their review letter dated December 9, 2021. -Xcel/PSCo requests that 10-foot wide dry utility easements are dedicated around the perimeter of each lot, and 15-feet abutting all major rights-of-way. PSCo also requested a specific note be added to the plat exhibit. -PSCo has an existing high-pressure natural gas transmission pipeline including a regulator station and associated land rights as shown within this property and it has been determined that an engineering review is necessary. -PSCo is requesting that the applicant enter into a license agreement prior to final approval of the final plat.	The applicant acknowledges Xcel's comments. -The requested note and easements have been added to the plat exhibit. -The applicant is required to provide staff with an executed license agreement with Xcel prior to recordation of the final plat.

From: Jeremy Hirsch
To: Michael Pesicka
Subject: RE: Pinery Village Filing 2 Minor Development-SB2021-049
Date: Friday, July 8, 2022 3:03:13 PM

Hello Mike,

I believe this resolves our previous comments.

Thanks,
Jeremy

Jeremy Hirsch
GIS Specialist II | Douglas County Assessor
301 Wilcox Street | Castle Rock, CO 80104
303-660-7450 ext. 4228 | 303-479-9751 Fax

From: Michael Pesicka <mpesicka@douglas.co.us>
Sent: Thursday, July 7, 2022 4:18 PM
To: Jeremy Hirsch <JHirsch@douglas.co.us>
Subject: RE: Pinery Village Filing 2 Minor Development-SB2021-049

Jeremy,

Attached for your review are the revised documents for Pinery Village Filing 2 Minor Development, Project No. SB2021-049. The response to your comments is on page 6 of the attached Comment Response Letter.

Thanks,

Mike Pesicka | Principal Planner
Douglas County Department of Community Development
Address | 100 Third St., Castle Rock, CO 80104
Direct | 303-814-4367 **Main** | 303-660-7460
Email | mpesicka@douglas.co.us

From: Jeremy Hirsch <JHirsch@douglas.co.us>
Sent: Thursday, May 12, 2022 11:14 AM
To: Michael Pesicka <mpesicka@douglas.co.us>
Subject: RE: Pinery Village Filing 2 Minor Development-SB2021-049

Hello Mike,

Please be aware of the following comments and concerns:

1. As noted on previous reviews, Pinery Commercial Metro District 1 & 2 are the current owners

of existing Tract E Pinery Village Filing 1 per plat dedication. Only Pinery Commercial Metro District No. 2 is singing on the plat as an owner, Pinery Commercial Metro District No. 1 needs to listed as well.

2. Also as noted in a previous review, as platted, Lot 3 will be setup with mixed ownership and taxable status (per the ownership of existing Tract E), which is very difficult for our office to track. Please clear title on Lot 3 via deed to eliminate the mixed ownership and taxable status.
3. There is an acreage discrepancy. The subtitle lists 87.85 acres, however the legal and land use summary both indicate 87.484 acres.

Regards,
Jeremy

Jeremy Hirsch
GIS Specialist II | Douglas County Assessor
301 Wilcox Street | Castle Rock, CO 80104
303-660-7450 ext. 4228 | 303-479-9751 Fax

From: Michael Pesicka <mpesicka@douglas.co.us>
Sent: Monday, May 9, 2022 10:04 AM
To: Jeremy Hirsch <JHirsch@douglas.co.us>
Subject: Pinery Village Filing 2 Minor Development-SB2021-049

Jeremy,

Attached is the revised Pinery Village Filing 2 Minor Development plat for your review. Project No. is SB2021-049.

Thank you,

Mike Pesicka | Principal Planner
Douglas County Department of Community Development
Address | 100 Third St., Castle Rock, CO 80104
Direct | 303-814-4367 **Main** | 303-660-7460
Email | mpesicka@douglas.co.us

From:	annb cwc64.com
To:	Michael Pesicka
Cc:	Rob Williamson (rw7517@att.com); duanew cwc64.com; jt cwc64.com; danab cwc64.com
Subject:	Pinery Center Blvd Parker, Colorado Douglas County eReferral #SB2021-049
Date:	Thursday, November 4, 2021 4:24:12 PM

Hi Mike,

RE: Project No SB2021-049

This is in response to your eReferral for a utility map showing the buried AT&T Long Line Fiber Optics near Pinery Center Blvd Parker, Colorado. I attached an Earth map showing the project area in red and the buried AT&T Long Line Fiber Optics in yellow. As shown, there is a possibility of conflict along State HWY 83. Any other information you could provide about the projects would be appreciated in determining if a conflict will exist. Please pass on our contact information as well.

Please feel free to contact us with any questions or concerns.

Ann Barnowski
Clearwater Consulting Group Inc
120 9th Avenue South
Suite 140
Nampa, ID 83651
Annb@cwc64.com

The attached google earth maps are intended to show approximate locations of the buried AT&T long line fiber optic cable. The maps are provided for informational purposes only. In no way should the maps be used for anything other than general guidelines as to where the fiber is or is not and any other use of these maps is strictly prohibited.

-----Original Message-----
From: mpesicka@douglas.co.us <mpesicka@douglas.co.us>
Sent: Thursday, November 4, 2021 8:52 AM
To: annb cwc64.com <annb@cwc64.com>
Subject: Douglas County eReferral (Project Number SB2021-049) Is Ready For Review

There is an eReferral for your review. Please use the following link to log on to your account:
https://apps.douglas.co.us/planning/projects/Login.aspx

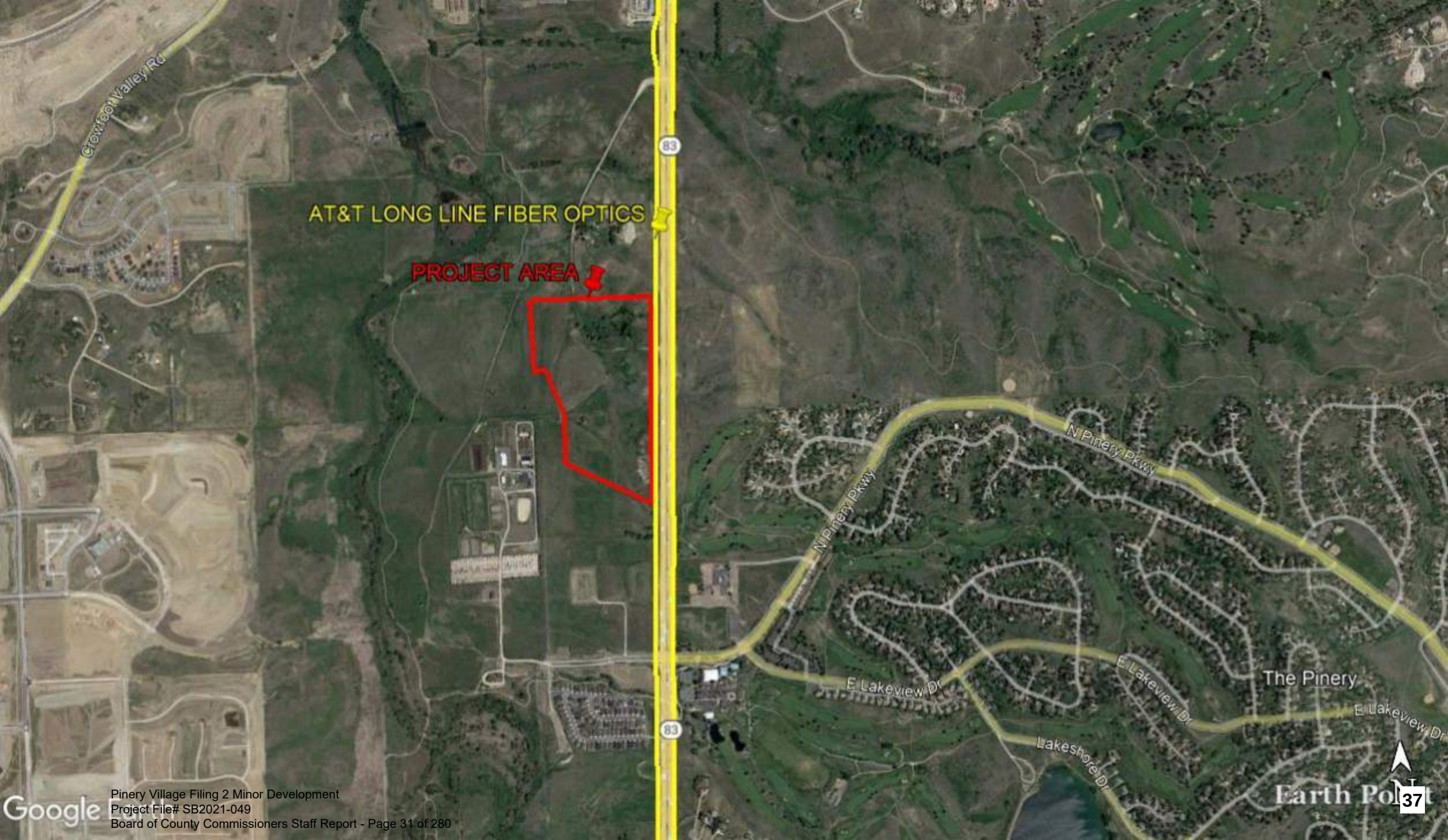
Project Number SB2021-049, Pinery Village Filing 2 Minor Development. The applicant proposes a Minor Development to subdivide 77.32 acres into 4 non-residential lots and 6 tracts and the extension of Pinery Center Blvd to the north property line. The property is zoned Planned Development and is located in the northeast portion of the County, approximately one-quarter mile north of North Pinery Parkway and west of State Highway 83 and partially bordered on the north by the Town of Parker.

This referral will close on Thursday, December 2, 2021.

If you have any questions, please contact me.

Sincerely,

Mike Pesicka, Principal Planner
Planning Services
100 Third Street


AT&T LONG LINE FIBER OPTICS
PROJECT AREA
Crowfoot Valley Rd
83
N Pinery Pkwy
E Lakeview Dr
Lakeshore Dr
The Pinery
Google

From: Michael Pesicka
To: Michael Pesicka
Subject: FW: Piney Center Blvd Parker, Colorado Douglas County eReferral #SB2021-049
Date: Thursday, February 12, 2026 12:59:30 PM

-----Original Message-----
From: annb cwc64.com <annb@cwc64.com>
Sent: Thursday, February 12, 2026 12:54 PM
To: Michael Pesicka <mpesicka@douglas.co.us>
Subject: Piney Center Blvd Parker, Colorado Douglas County eReferral #SB2021-049

Caution: This email originated outside the organization. Be cautious with links and attachments.

Hi Mike,

I am attaching an updated map, our lines moved to the east of HWY 83. Thank you for reaching out! It does not look like there will be a conflict.

Ann Barnowski
Clearwater Consulting Group Inc
120 9th Avenue South
Suite 140
Nampa, ID 83651
Annb@cwc64.com

The attached google earth maps are intended to show approximate locations of the buried AT&T long line fiber optic cable. The maps are provided for informational purposes only. In no way should the maps be used for anything other than general guidelines as to where the fiber is or is not and any other use of these maps is strictly prohibited.


Cherry Creek
Kinney Creek
AT&T LONG LINE FIBER OPTICS
PROJECT AREA
Rebel Cookie Dough and Confections
Cherry Creek
Cherry Creek
Cherry Creek Trail Pinery Trailhead
Cherry Creek
Google Earth
Image Landsat / Copernicus
N Piney Pkwy
Windhood Way
Windview West
Aurora Residential Al
Northeast Elementary
N Piney Pkwy
E Windview
Windrora
E Windview
E Lakeview Dr
The Pinery Country Club
Lakecliff Way
N

STATE OF COLORADO

Traffic & Safety
Region 1
2829 W. Howard Place
Denver, Colorado 80204

COLORADO
Department of Transportation

Project Name: **Pinery Village in Pinery West**

		Highway:	Mile Marker:
Print Date:	12/2/2021	083	55.355

Drainage Comments:

11-15-21 - Tanner

After reviewing the drainage report, I have the following comment:

The site primarily drains away from CDOT ROW and flows are conveyed, ultimately, to Cherry Creek via the proposed realigned North Pinery Creek. My primary concern is in regards to the calculations and documentation included in Appendix 7 which provides information on the offsite flows that impact the site from the East side of Parker Road. The proposed design shows a storm sewer that will intersect the three existing culverts that convey flows under Parker Road, the system is shown on Profiles STORM-8 and STORM-9 on page C6.7. There is documentation inlcuded in the Appendix that shows capacity calculations of the pipes in the system, however, as this system will have immediate impacts to the infrastructure within Parker Road I would like to see the HGL's for the Minor and Major storms included on these profiles to verify that there is no surcharging within CDOT ROW.

Traffic Comments:

Scherner 3-22-21

After review of the TIS, the proposed mitigation at the intersections on Parker Rd at Stroh Rd and Pinery West is maximiized to the most reasonable extent possible and therefore is an acceptable strategy.

The distance between Parker Rd and Access "C" needs to be, at a minimum, 550 ft from PC (Parker Rd) to PC (Access "C") Thi

s is not stated in the TIS. If this distance is not met, then the signal cannot be installed and full movement designation will likely require re-designation to a more restricted condition. It is also unclear why Access "C" is signalized when the primary access appears to be Pinery Center Blvd.

The Wellspring Dr RIRO will require both accel and decel auxiliary lanes meeting the requirements stated in the Access Code

Scherner 11-29-21

Previous comments still apply, Access C shall not be signalized if the 550 ft separation from Parker Rd is not met.

There are no plans showing the necessary modifications of Stroh Rd and Parker Rd to review. It is also unclear how the Access C intersection geometric design influences the Parker Rd/Stroh Rd intersection design.

The required addition of a NB left lane on Parker Rd at Stroh Rd needs to occur and be included in the roadway plans required for permit approval. Traffic signal modification may also be necessary

Right of Way Comments:

11/10/21 - SDH - No ROW comments except to reiterate the need for sufficient ROW to be dedicated to the County

along SH-83 as related to the Corridor Optimization Plan.

Resident Engineer Comments:

11/17/2021 MAK

If an intersection or sidewalks will be modified/constructed on Parker Rd Roadway plans will need to be submitted for review.

4/2/21 MAK

No Comments at this time.

Permits Comments:

There was no referral responses to CDOT previous remarks. We had mentioned in an earlier meeting the need to adhere to the Access Control Plan (ACP) for SH 83. We *assume* that the Town of Parker has reviewed this proposed development plan and has made comments in regards to the ACP and local plans as there are off-site connections to be made to the north. If there are any deviations or changes to the ACP, the Town of Parker must approve of those revisions as outlined in the IGA.

It will be important for the alternative N-S roadways, their functional design/cross sections, and timing to be in alignment with those planned by the Town of Parker. These provide essential access connections without the need to use the highway for short trips. Town of Parker has recently updated their Transportation vision/plan for SH 83.

Intersection improvements (including new auxiliary lanes) and those with > 20% traffic will require new Access permits. Any work in CDOT RoW including landscaping, signal upgrades and utilities is by permit.

The 2004 Corridor Optimization Plan calls for a 175-ft RoW profile for SH 83 in this area, half of which would come from the centerline (87.5-ft) . The plat does not show this to exist along the length of the property. Additional RoW should be dedicated to the county, to in-turn deed to CDOT at the time it is needed. Please call out the RoW for SH 83 along the length of theis property.

- RS 11-23-21

We have no issues with the removal of what was Collector Road “C". However, on the north end of this property, cross- property connections will be necessary. Extending the N-S collector to Stroh is acceptable, but opportunity is lost in not providing a connection into Lewis Christensen Rd Neither the maps provided or the TIS show enough context to the SH 83 corridor and existing local roadway rights-of-way on the north end of this project (and not consistent with Douglas County Assessor property lines/info)

With the removal of the ¾ turn movement previously permitted, a double NB to WB left turn should go into Pinery Parkway intersection – by 2030. That un-built ¾ Access permit shall be officially 'retired'.

I do not believe less traffic will occur on the SB to EB Left urn movement between 2030-40. The study's figure 10 &

11 is peculiar showing a drop from of peak hour left turns from 405 to 330.

County needs to ensure sufficient RoW is dedicated along SH 83 per the Corridor Optimization Plan to ensure auxiliary lanes, and room for multi-use pathways and utilities can occupy the RoW.

See Attached Red-line

RS 03-30-21

Other Comments:

3-31-2021

A State Highway access permit, 119094 was issued for the proposed Right-in, Right-out access and is still valid. It is currently extended to 8/29/2021. This permit may need to be either revised or repermitted to reflect the change in traffic due to the redistribution with the elimination of the 3/4 access to this development. Douglas county is the issuing authority for State Highway Access permits within their jurisdiciton. Contact at the County for access permits is Chris Martin.

The proposed improvements at Pinery Parkway and Parker Road will require new State Highway Access Permits. Improvements include a second NB left turn lane. Since Pinery Pkwy is a County Roadway, Douglas County must be the Permittee for the permit. If improvements are proposed on both the east and west side, then separate permit applications will be needed for each side.

We will want to review the drainage report for this development to insure there will be no negative impact to the State Highway.

All signing for this development that is visible to or advertises to State Highway 83 must be on-premise and must comply with any applicable rules governing outdoor advertising in Colorado per State of Colorado Rules **2 CCR 601-3**

--Steve Loeffler, 3-31-2021

From: PlatReview
To: Michael Pesicka
Cc: Benson, William
Subject: RE: Douglas County eReferral (Project Number SB2021-049) Is Ready For Review
Date: Monday, November 15, 2021 7:17:36 AM

Requester,

Our engineer has reviewed this plat and their comments are: "I have no objections to this plat"
If you require signatures, you can contact the engineer CC'd on this email and if you have any further questions, please don't hesitate to reach out.

Thank you!

-----Original Message-----
From: mpesicka@douglas.co.us <mpesicka@douglas.co.us>
Sent: Thursday, November 4, 2021 9:52 AM
To: PlatReview <PlatReview@lumen.com>
Subject: Douglas County eReferral (Project Number SB2021-049) Is Ready For Review

There is an eReferral for your review. Please use the following link to log on to your account: https://imss91-ctp.trendmicro.com:443/wis/clicktime/v1/query?url=https%3a%2f%2fapps.douglas.co.us%2fplanning%2fprojects%2fLogin.aspx&umid=B837CF1F-CFF7-B205-AE20-1EC4BA6A4238&auth=19120be9529b25014b618505cb01789c5433dae7-7de8ecbaa03f4c076da1622e26bf21d24e5a7fc2

Project Number SB2021-049, Pinery Village Filing 2 Minor Development. The applicant proposes a Minor Development to subdivide 77.32 acres into 4 non-residential lots and 6 tracts and the extension of Pinery Center Blvd to the north property line. The property is zoned Planned Development and is located in the northeast portion of the County, approximately one-quarter mile north of North Pinery Parkway and west of State Highway 83 and partially bordered on the north by the Town of Parker.

This referral will close on Thursday, December 2, 2021.

If you have any questions, please contact me.

Sincerely,

Mike Pesicka, Principal Planner
Planning Services
100 Third Street
Castle Rock, CO 80104
303-660-7460 (main)

This communication is the property of Lumen Technologies and may contain confidential or privileged information. Unauthorized use of this communication is strictly prohibited and may be unlawful. If you have received this communication in error, please immediately notify the sender by reply e-mail and destroy all copies of the communication and any attachments.

STATE OF COLORADO

Traffic & Safety
Region 1
2829 W. Howard Place
Denver, Colorado 80204

COLORADO
Department of Transportation

Project Name: **Pinery Village in Pinery West**

		Highway:	Mile Marker:
Print Date:	12/2/2021	083	55.355

Drainage Comments:

11-15-21 - Tanner

After reviewing the drainage report, I have the following comment:

The site primarily drains away from CDOT ROW and flows are conveyed, ultimately, to Cherry Creek via the proposed realigned North Pinery Creek. My primary concern is in regards to the calculations and documentation included in Appendix 7 which provides information on the offsite flows that impact the site from the East side of Parker Road. The proposed design shows a storm sewer that will intersect the three existing culverts that convey flows under Parker Road, the system is shown on Profiles STORM-8 and STORM-9 on page C6.7. There is documentation inlcuded in the Appendix that shows capacity calculations of the pipes in the system, however, as this system will have immediate impacts to the infrastructure within Parker Road I would like to see the HGL's for the Minor and Major storms included on these profiles to verify that there is no surcharging within CDOT ROW.

Traffic Comments:

Scherner 3-22-21

After review of the TIS, the proposed mitigation at the intersections on Parker Rd at Stroh Rd and Pinery West is maximiized to the most reasonable extent possible and therefore is an acceptable strategy.

The distance between Parker Rd and Access "C" needs to be, at a minimum, 550 ft from PC (Parker Rd) to PC (Access "C") Thi

s is not stated in the TIS. If this distance is not met, then the signal cannot be installed and full movement designation will likely require re-designation to a more restricted condition. It is also unclear why Access "C" is signalized when the primary access appears to be Pinery Center Blvd.

The Wellspring Dr RIRO will require both accel and decel auxiliary lanes meeting the requirements stated in the Access Code

Scherner 11-29-21

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--Steve Loeffler, 3-31-2021

From: Doyle - DNR, Katie
To: Michael Pesicka
Subject: Re:Douglas County eReferral (Project Number SB2021-049) Is Ready For Review
Date: Tuesday, November 30, 2021 8:59:24 AM

Dear Mr. Pesicka,

Thank you for the opportunity to comment on the Pinery Village Filing 2 Minor Development under Project #SB2021-049. Our goal in responding to land use proposals such as this is to provide complete, consistent, and timely information to all entities who request comment on matters within our statutory authority.

Upon review of the proposed referral request, Colorado Parks and Wildlife (CPW) has no objections to the application moving forward as planned for approval. Please refer to the previous comment letter from CPW dated February 11, 2020 to Mr. Dan Avery for additional wildlife concerns and development recommendations.

Please do not hesitate to contact us about ways to continue developing and managing your properties in order to maximize wildlife value while minimizing potential conflicts. If you have any further questions, please contact me at (303) 291-7114.

Thank you,

Katie Doyle
District Wildlife Manager - Parker/Castle Rock East

Field Services

Denver Office 303.291.7227
C 720.930.8039 | P 303.291.7114
6060 Broadway, Denver, CO 80216
katie.doyle@state.co.us | www.cpw.state.co.us

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February 11, 2026

Douglas County Department of Community Development
100 Third Street
Castle Rock, Colorado 80104

Attn: Mr. Mike Pesicka
Principal Planner

Subject: Review of Water Demand and Water Supply Availability for The Pinery Village Filing 2, File No. SB2021-049.

Project No. 24822

Dear Mike,

Moore Engineering, Inc., dba Lytle Water Solutions, LLC ("LWS"), has reviewed the pertinent documents related to the proposed minor development at the Pinery Village Filing 2, File No. SB2021-041. This property encompasses 77 acres ("ac") and is proposed to be developed with four commercial lots and water service for this area is to be by the Pinery Water and Wastewater District ("Pinery").

There was an undated, anonymous narrative of the proposed development in Pinery Village Filing 2 provided. However, there were no specific land development plans in this narrative, therefore, we have had to evaluate the proposed demand in Filing 2 based on the will-serve letter provided by the Pinery.

A January 5, 2026 will-serve letter was provided by the Pinery relative to the commitment of service to this property. According to the January 5 will-serve letter, the Pinery is prepared to serve this property. While no specifics were provided in the Pinery will-serve letter, it was estimated that the annual demand would be 95 acre-feet per year ("ac-ft/yr").

Attached to the Pinery January 5 will-serve letter was a February 2018 summary of present and future water sources, as well as current and build out demands, prepared by HRS Water Consultants, Inc. ("HRS"). The HRS analysis has been updated by Pinery staff in September 2025. According to the most recent Pinery summary, the Pinery has four types of water available to it, (a) senior tributary ditch rights diverted through alluvial groundwater wells, as well as junior tributary alluvial well water rights, (b) nontributary Denver Basin aquifer groundwater rights, (c) reusable water stored in Walker Reservoir, and (d) water contracted for through the Water Infrastructure Supply Efficiency ("WISE") project and the Cherry Creek Project Water Authority ("CCPWA"). The Pinery also has adjudicated augmentation plans which allow it to claim return flow credits from reusable water sources.

According to information provided in the updated Pinery summary, the Pinery has 1,220 ac-ft/yr of senior Harrison and Haley Ditch water rights which are diverted through alluvial wells, as well as 13,954 ac-ft/yr of nontributary Denver Basin aquifer water. These senior ditch rights and the Denver Basin aquifer water rights (located in the Central Basin) are considered firm water supplies. The Pinery's interest in the CCPWA is a 20.489 percent share, which includes Denver Basin aquifer and alluvial water. It was estimated that the yield from CCPWA water is 1,570 ac-ft/yr, with 1,530 ac-ft/yr associated with Denver Basin aquifer water and 40 ac-ft/yr associated with senior tributary alluvial water rights. It is unclear how this water will be developed for use in the Pinery or if it has been developed for use. As such, the Pinery has 15,174 ac-ft/yr of firm first-use water supplies, and 16,704 ac-ft/yr if the CCPWA supplies are considered. While the Pinery has a subscription for 500 ac-ft/yr of WISE water, this is an interruptible supply and, therefore, cannot be relied upon as a firm yield.

The amount of reusable return flow credits from the Pinery's current augmentation plans was quantified as approximately 47 ac-ft/yr, after meeting all of the augmentation plan requirements. This water is exchanged from the Pinery's wastewater effluent up to Walker Reservoir and stored for future use.

Information was also provided in the updated summary on current and projected buildout demands within the Pinery service area. The most recent data from 2024 indicates an annual demand of 3,098 ac-ft/yr, with a maximum annual historical demand of 3,861 ac-ft/yr in 2022. While not provided in the updated water rights summary, the previous HRS buildout demand estimate for the Pinery was 4,200 ac-ft/yr. Assuming the Pinery's estimated buildout demand has not appreciably changed, the available firm water supply for the Pinery is approximately 11,000 ac-ft/yr in excess of the projected buildout demand.

Based on the overall water supply (15,174 to 16,704 ac-ft/yr) and demand estimates (4,200 ac-ft/yr at buildout) for the Pinery service area, while specific details of the water demands in Filing 2 were not provided, it is our opinion that there is a sufficient water supply to serve the proposed demand associated with the Pinery Village, Filing 2 (95 ac-ft/yr).

If you have questions regarding our review of the water supply availability and demand to serve the proposed development in the Pinery Village, Filing 2, please do not hesitate to give us a call.

Yours truly,

Bruce A. Lytle, P.E.
Senior Project Manager

COLORADO
Division of Water Resources
Department of Natural Resources

July 29, 2022

Mike Pesicka, Principal Planner
Douglas County Planning Services
Transmission via email: mpesicka@douglas.co.us

Re: **Pinery Village Minor Development (Filing 2)** – 2nd Letter
Case No. SB2020-004
Part of the SE ¼ of Sec. 3 and part of the NE ¼ of Sec. 10, T 7S, R 66W, 6th P.M.
Water Division 1, Water District 8

Dear Mike Pesicka:

We have reviewed the July 19, 2022 re-referral concerning the proposal to subdivide a 77-acre parcel located within the Pinery West Commercial Development ("Development") and part of The Pinery 28th Amendment. The proposal is to divide the parcel into 3 commercial/industrial lots and 6 open space/drainage/right-of-way tracts. Proposed land uses are industrial, office, retail, and other commercial uses. This office previously commented on Filing 1 of the planned development on October 28, 2018 and February 4, 2020 (project no. SB2018-079).

Water Supply Demand

According to the March 8, 2022 letter from the Pinery Water & Wastewater District ("District"), the estimated water demand is 117 acre-feet/year for domestic service and 14 acre-feet per year for irrigation service, for a total estimated water demand of 131 acre-feet per year.

Source of Water Supply

The proposed water supply for the subdivision is service provided by the District. According to the March 8, 2022 letter, the District is willing and able to provide domestic and irrigation service to the proposed subdivision.

According to the "Present and Future Water Sources" report dated May 2014 and updated February 2018 prepared by HRS Consultants Inc. ("Report"), the Pinery Water & Wastewater District has a total of 15,037 acre-feet per year of water rights. This amount consists of 13,466 acre-feet of nontributary water rights, 1,220 acre-feet of senior tributary water rights, an additional 351 acre-feet of nontributary water rights that are dedicated to development of the Broe property, and as a member of the WISE Authority the District has subscribed to 500 acre-feet per year on average of renewable and reusable water. In addition, the District has two existing augmentation plans, decreed in Division 1 Water Court Case nos. W-6268 and 11CW198. Under those augmentation plans, return flows from the use of nontributary water, along with other replacement sources, are used to offset out-of-priority depletions from pumping of junior wells.

As of 2017, the District's water requirements from existing commitments totaled 3,098 acre-feet. Projected commitments at full build out are estimated at 4,200 acre-feet.

The majority of the Pinery Water & Wastewater Treatment District's water supply is water from bedrock aquifers in the Denver Basin. The State Engineer's Office does not have evidence regarding the length of time for which this source will be a physically and economically viable source of water. According to 37-90-137(4)(b)(I), C.R.S., "Permits issued pursuant to this subsection (4) shall allow withdrawals on the basis of an aquifer life of one hundred years." Based on this **allocation** approach, the annual amounts of water decreed are equal to one percent of the total amount, as determined by rules 8.A and 8.B of the Statewide Nontributary Ground Water Rules, 2 CCR 402-7. Therefore, the water may be withdrawn in those annual amounts for a maximum of 100 years.

State Engineer's Office Opinion

Based upon the above and pursuant to sections 30-28-136(1)(h)(I) and 30-28-136(1)(h)(II), C.R.S., it is our opinion that the proposed water supply is adequate and can be provided without causing injury to decreed water rights.

Our opinion that the water supply is **adequate** is based on our determination that the amount of water required annually to serve the subdivision is currently physically available, based on current estimated aquifer conditions.

Our opinion that the water supply can be **provided without causing injury** is based on our determination that the amount of water that is legally available on an annual basis, according to the statutory **allocation** approach, for the proposed uses is greater than the annual amount of water required to supply existing water commitments and the demands of the proposed subdivision.

Our opinion is qualified by the following:

The Division 1 Water Court has retained jurisdiction over the final amount of water available pursuant to the above-referenced decree, pending actual geophysical data from the aquifer.

The amounts of water in the Denver Basin aquifer, and identified in this letter, are calculated based on estimated current aquifer conditions. The source of water is from a non-renewable aquifer, the allocations of which are based on a 100 year aquifer life. The county should be aware that the economic life of a water supply based on wells in a given Denver Basin aquifer may be less than the 100 years used for allocation due to anticipated water level declines. We recommend that the county determine whether it is appropriate to require development of renewable water resources for this subdivision to provide for a long-term water supply.

Additional Comments

The application materials indicate that storm water detention structure(s) will be constructed as a part of this project. The applicant should be aware that unless the structure(s) can meet the requirements of a "storm water detention and infiltration facility" as defined in section 37-92-602(8), C.R.S., the structure may be subject to administration by this office. The applicant should review the Division of Water Resources' *Administrative Statement Regarding the Management of Storm Water Detention Facilities and Post-Wildland Fire Facilities in Colorado*, attached, to ensure that the notification, construction and operation of the proposed structure meets statutory and administrative requirements. The applicant is encouraged to use *Colorado Stormwater Detention and Infiltration Facility Notification Portal* to meet the notification requirements, located at https://maperture.digitaldataservices.com/gvh/?viewer=cswdif.

If you or the applicant have any questions, please contact Wenli Dickinson at 303-866-3581 x8206 or at wenli.dickinson@state.co.us.

Sincerely,

Joanna Williams, P.E.
Water Resources Engineer

Attachment: *Administrative Statement Regarding the Management of Storm Water Detention Facilities and Post-Wildland Fire Facilities in Colorado*

Ec: Subdivision file no. 26980
Pinery Water & Wastewater Treatment District file
William Conway (wconway@redland.com); Mark Cevaal (mcevaal@redland.com)

PINERY VILLAGE FILING NO. 2

A PORTION OF PLANNING AREAS 41, 42, 43, & OPEN SPACE H-1
LOCATED IN THE SOUTHEAST QUARTER OF SECTION 3 AND THE NORTHEAST QUARTER OF SECTION 10,
TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
COUNTY OF DOUGLAS, STATE OF COLORADO.
77.320 ACRES - 4 COMMERCIAL LOTS - 6 TRACTS SB2021-049

LEGAL DESCRIPTION

A PARCEL OF LAND SITUATED IN THE SOUTHEAST QUARTER OF SECTION 3 AND THE NORTHEAST QUARTER OF SECTION 10, TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF DOUGLAS, STATE OF COLORADO, MORE PARTICULARLY DESCRIBED AS FOLLOWS;

COMMENCING AT THE CENTER-SOUTH ONE-SIXTEENTH CORNER OF SAID SECTION 3, WHENCE THE NORTH LINE OF THE SOUTH HALF OF THE SOUTHEAST QUARTER OF SAID SECTION 3 BEARS NORTH 89°32'31"EAST, A DISTANCE OF 2635.68 FEET WITH ALL BEARINGS HEREON REFERENCED TO SAID LINE;

THENCE ALONG SAID NORTH LINE, NORTH 89°32'31"EAST, A DISTANCE OF 40.73 FEET TO THE NORTHEAST CORNER OF PINERY VILLAGE FILING NO. 1 AS RECORDED AT RECEPTION NO. 2020006468 IN THE OFFICIAL RECORDS OF THE DOUGLAS COUNTY CLERK AND RECORDER'S OFFICE, AND THE **POINT OF BEGINNING**;

THENCE CONTINUING ALONG SAID NORTH LINE, NORTH 89°32'31" EAST, A DISTANCE OF 1,817.24 FEET TO THE WESTERLY RIGHT-OF-WAY OF PARKER ROAD, RECORDED IN BOOK 1805 AT PAGE 1143, OF SAID RECORDS;

THENCE ALONG SAID WESTERLY RIGHT-OF-WAY THE FOLLOWING FOUR (4) COURSES:

1. SOUTH 01°44'50" WEST, A DISTANCE OF 1,329.43 FEET;
2. SOUTH 19°39'08" WEST, A DISTANCE OF 211.40 FEET;
3. SOUTH 01°44'27" WEST, A DISTANCE OF 749.39 FEET;
4. SOUTH 18°46'51" EAST, A DISTANCE OF 86.02 FEET TO THE BOUNDARY OF SAID PINERY VILLAGE FILING NO. 1;

THENCE ALONG SAID BOUNDARY THE FOLLOWING SIXTEEN (16) COURSES;

1. SOUTH 01°44'50" WEST, A DISTANCE OF 316.60 FEET TO THE BEGINNING OF A NON-TANGENT CURVE CONCAVE NORTHERLY HAVING A RADIUS OF 35.00 FEET, THE RADIUS POINT OF SAID CURVE BEARS NORTH 23°37'47" WEST;
2. SOUTHWESTERLY ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 23°34'56", AN ARC LENGTH OF 14.41 FEET;
3. SOUTH 89°57'09" WEST, A DISTANCE OF 1,163.73 FEET;
4. NORTH 45°19'53" WEST, A DISTANCE OF 42.44 FEET;
5. NORTH 00°37'01" WEST, A DISTANCE OF 528.99 FEET;
6. SOUTH 89°45'03" WEST, A DISTANCE OF 66.50 FEET;
7. NORTH 00°37'01" WEST, A DISTANCE OF 780.33 FEET;
8. NORTH 00°36'54" WEST, A DISTANCE OF 116.93 FEET;
9. SOUTH 89°39'16" WEST, A DISTANCE OF 330.91 FEET;
10. NORTH 06°01'28" EAST, A DISTANCE OF 235.83 FEET;
11. NORTH 17°28'32" EAST, A DISTANCE OF 468.15 FEET;
12. NORTH 03°50'12" EAST, A DISTANCE OF 121.74 FEET;
13. NORTH 16°22'12" WEST, A DISTANCE OF 279.83 FEET;
14. NORTH 37°38'54" WEST, A DISTANCE OF 83.00 FEET;
15. NORTH 68°29'08" WEST, A DISTANCE OF 133.11 FEET;
16. NORTH 00°32'20" WEST, A DISTANCE OF 24.94 FEET TO THE **POINT OF BEGINNING**.

CONTAINING AN AREA OF 87.848 ACRES, (3,826,658 SQUARE FEET), MORE OR LESS.

DEDICATION STATEMENT

THE UNDERSIGNED, BEING ALL THE OWNERS, MORTGAGEES, BENEFICIARIES OF DEEDS OF TRUST AND HOLDERS OF OTHER INTERESTS IN THE LANDS DESCRIBED HEREIN, HAVE LAID OUT, SUBDIVIDED AND PLATTED SAID LANDS INTO LOTS, TRACTS, STREETS AND EASEMENTS AS SHOWN HEREON UNDER THE NAME AND SUBDIVISION OF **PINERY VILLAGE FILING NO. 2.** THE UTILITY EASEMENTS SHOWN HEREON ARE HEREBY DEDICATED FOR PUBLIC UTILITIES AND CABLE COMMUNICATION SYSTEMS AND OTHER PURPOSES AS SHOWN HEREON. THE ENTITIES RESPONSIBLE FOR PROVIDING THE SERVICES FOR WHICH THE EASEMENTS ARE ESTABLISHED ARE HEREBY GRANTED THE PERPETUAL RIGHT OF INGRESS AND EGRESS FROM AND TO ADJACENT PROPERTIES FOR INSTALLATION, MAINTENANCE AND REPLACEMENT OF UTILITY LINES AND RELATED FACILITIES. TRACT D, KNOWN AS PINERY CENTER BOULEVARD, AND TRACT F RIGHTS-OF-WAY, AS SHOWN HEREON ARE DEDICATED AND CONVEYED TO DOUGLAS COUNTY, COLORADO, IN FEE SIMPLE ABSOLUTE, WITH MARKETABLE TITLE, FOR PUBLIC USES AND PURPOSES. UTILITY EASEMENTS, DRAINAGE AND BLANKET ACCESS EASEMENTS, SIGHT DISTANCE EASEMENTS, ACCESS EASEMENT, AND DRAINAGE EASEMENTS ARE DEDICATED AND CONVEYED TO DOUGLAS COUNTY, COLORADO, FOR PUBLIC USES AND PURPOSES.

OWNER

TF PINERY WEST, L.P., A DELAWARE LIMITED PARTNERSHIP

BY: _____

STATE OF COLORADO)
)SS
COUNTY OF DOUGLAS)

ACKNOWLEDGED BEFORE ME THIS ___ DAY OF _____, 20__
BY _____, AS _____
OF TF PINERY WEST, L.P., A DELAWARE LIMITED PARTNERSHIP

WITNESS MY HAND
AND OFFICIAL SEAL

MY COMMISSION
EXPIRES: _____ _____
NOTARY PUBLIC

ACCEPTANCE CERTIFICATE

THE DEDICATION OF TRACTS A, B, C, E, AND LOT 3 ARE HEREBY ACCEPTED FOR OWNERSHIP AND MAINTENANCE BY THE PINERY COMMERCIAL METROPOLITAN DISTRICT NO. 2

THE PINERY COMMERCIAL METROPOLITAN DISTRICT NO. 2:

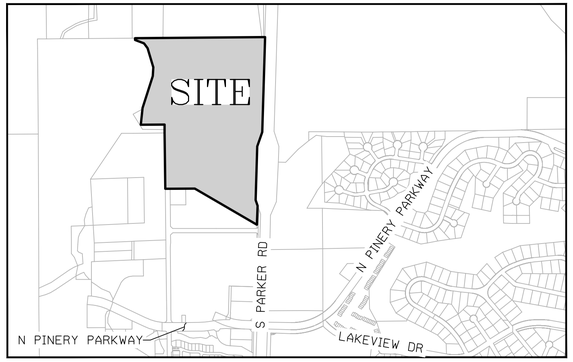
BY: _____

STATE OF COLORADO)
)SS
COUNTY OF DOUGLAS)

ACKNOWLEDGED BEFORE ME THIS ___ DAY OF _____, 20__
BY _____, AS _____
OF THE PINERY COMMERCIAL METROPOLITAN DISTRICT NO.'S 1 AND 2

WITNESS MY HAND
AND OFFICIAL SEAL

MY COMMISSION
EXPIRES: _____ _____
NOTARY PUBLIC



VICINITY MAP
SCALE 1" = 1,000'

NORTH

TITLE VERIFICATION

WE, FIRST AMERICAN TITLE INSURANCE COMPANY, DO HEREBY CERTIFY THAT WE HAVE EXAMINED THE TITLE OF ALL LAND PLATTED HEREON AND THAT TITLE TO SUCH LAND IS IN THE DEDICATOR(S) FREE AND CLEAR OF ALL LIENS, TAXES AND ENCUMBRANCES.

FIRST AMERICAN TITLE INSURANCE COMPANY

BY: _____

TITLE: _____

DATE: _____

STATE OF COLORADO)
)SS
COUNTY OF _____)

ACKNOWLEDGED BEFORE ME THIS _____ DAY OF _____, 20__

BY _____ AS _____

OF FIRST AMERICAN TITLE INSURANCE COMPANY

WITNESS MY HAND AND OFFICIAL SEAL

MY COMMISSION EXPIRES: _____ _____
NOTARY PUBLIC

BOARD OF COUNTY COMMISSIONERS CERTIFICATE

THIS PLAT WAS APPROVED FOR FILING BY THE BOARD OF COUNTY COMMISSIONERS OF DOUGLAS COUNTY,

COLORADO, ON THE _____DAY OF _____ , 20___, SUBJECT TO ANY CONDITIONS SPECIFIED HEREON.

TRACT D, KNOWN AS PINERY CENTER BOULEVARD, AND TRACT F, UTILITY EASEMENTS, AND DRAINAGE AND BLANKET ACCESS EASEMENTS ARE ACCEPTED.

ALL EXPENSES INCURRED WITH RESPECT TO IMPROVEMENTS FOR ALL UTILITY SERVICES, PAVING, GRADING, LANDSCAPING, CURBS, GUTTER, SIDEWALKS, ROAD LIGHTING, ROAD SIGNS, FLOOD PROTECTION DEVICES, DRAINAGE STRUCTURES, AND ALL OTHER IMPROVEMENTS THAT MAY BE REQUIRED SHALL BE THE RESPONSIBILITY OF THE SUBDIVIDER AND NOT DOUGLAS COUNTY.

THIS ACCEPTANCE DOES NOT GUARANTEE THAT SOIL CONDITIONS, SUBSURFACE GEOLOGY, GROUNDWATER CONDITIONS OR FLOODING CONDITIONS OF ANY LOTS SHOWN HEREON ARE SUCH THAT A BUILDING PERMIT, WELL PERMIT OR SEWAGE DISPOSAL PERMIT WILL BE ISSUED.

_____
CHAIR, BOARD OF COUNTY COMMISSIONERS

LAND USE TABLE

TRACT	AREA (SQ.FT)	AREA (AC ±)	USE	OWNED BY / MAINTAINED BY
LOT 1	215,107	4.938	COMMERCIAL	OWNER
LOT 2	641,506	14.727	COMMERCIAL	OWNER
LOT 3	128,796	2.957	REGIONAL TRANSPORTATION DISTRICT (RTD)	THE PINERY COMMERCIAL METROPOLITAN DISTRICT NO. 2
LOT 4	1,411,946	32.414	COMMERCIAL	OWNER
TRACT A	162,913	3.740	OPEN SPACE / DRAINAGE	THE PINERY COMMERCIAL METROPOLITAN DISTRICT NO. 2
TRACT B	113,415	2.604	OPEN SPACE / DRAINAGE	THE PINERY COMMERCIAL METROPOLITAN DISTRICT NO. 2
TRACT C	537	0.012	OPEN SPACE / DRAINAGE	THE PINERY COMMERCIAL METROPOLITAN DISTRICT NO. 2
TRACT D	139,327	3.199	RIGHT-OF-WAY	DOUGLAS COUNTY
TRACT E	1,010,903	23.207	OPEN SPACE / DRAINAGE	THE PINERY COMMERCIAL METROPOLITAN DISTRICT NO. 2
TRACT F	2,208	0.051	RIGHT-OF-WAY	DOUGLAS COUNTY
LOT TOTAL	2,397,355	55.036		
TRACT TOTAL	1,429,303	32.812		
TOTAL	3,826,658	87.848		

(SEE ADDITIONAL TRACT NOTES THIS SHEET)

SHEET INDEX

SHEET 1 COVER SHEET

SHEET 2 OVERALL SHEET

SHEETS 3-4 LOT AND EASEMENT DETAIL SHEETS

PLANNING COMMISSIONERS CERTIFICATE

THE MINOR DEVELOPMENT FINAL PLAT (SB2021-049) WAS REVIEWED BY THE PLANNING COMMISSION ON _____ __, 20__.

_____ _____
PLANNING DIRECTOR, ON BEHALF OF THE PLANNING COMMISSION DATE

GENERAL NOTES

1. ANY PERSON WHO KNOWINGLY REMOVES, ALTERS OR DEFACES ANY PUBLIC LAND SURVEY MONUMENT OR LAND BOUNDARY MONUMENT OR ACCESSORY COMMITS A CLASS TWO (2) MISDEMEANOR PURSUANT TO STATE STATUTE 18-4-508, COLORADO REVISED STATUTE.
2. PER C.R.S. 38-51-106, "ALL LINEAL UNITS DEPICTED ON THIS LAND SURVEY PLAT ARE U.S. SURVEY FEET. ONE METER EQUALS 39.37/12 U.S. SURVEY FEET, EXACTLY ACCORDING TO THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY."
3. THE FIELD WORK FOR THIS SURVEY WAS PERFORMED BY AN AZTEC CONSULTANTS, INC. SURVEY CREW AND COMPLETED ON APRIL 01, 2021.
4. BASIS OF BEARINGS - BEARINGS SHOWN HEREON ARE GRID BEARINGS DERIVED FROM GPS OBSERVATION BASED UPON THE COLORADO COORDINATE SYSTEM OF 1983 CENTRAL ZONE (NAD 83, 2011) REFERENCED TO THE NORTH LINE OF THE SOUTH HALF OF THE SOUTHEAST QUARTER OF SECTION 3, TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE 6TH PRINCIPAL MERIDIAN BEING MONUMENTED AS SHOWN HEREON, TAKEN TO BEAR NORTH 89°32'31" EAST, A DISTANCE OF 2,635.68 FEET.
5. FIRST AMERICAN TITLE INSURANCE COMPANY COMMITMENT NO. NCS-927312-CO, EFFECTIVE 10/21/2020 AT 5:00 P.M. WAS RELIED UPON FOR RECORD INFORMATION REGARDING RIGHTS-OF-WAY, EASEMENTS AND ENCUMBRANCES. THIS SURVEY DOES NOT REPRESENT A TITLE SEARCH BY AZTEC CONSULTANTS INC. TO DETERMINE OWNERSHIP, RIGHTS-OF-WAY, EASEMENTS OR OTHER MATTERS OF PUBLIC RECORD.
6. BASED ON A GRAPHICAL REPRESENTATION OF FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP (FIRM) NO. 08035C0184G, WITH AN EFFECTIVE DATE OF MARCH 16, 2016, THE SUBJECT PROPERTY LIES WITHIN ZONE "AE" AREAS WHERE BASE FLOOD ELEVATIONS HAVE BEEN DETERMINED, WITHIN ZONE "X" OTHER AREAS, AND WITHIN "ZONE X" BEING DEFINED AS "AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
7. PARCEL IS BEING SUBDIVIDED INTO 4 COMMERCIAL LOTS AND 6 TRACTS.
8. TRACTS A, B, C, & E SHALL BE OWNED AND MAINTAINED BY THE METROPOLITAN DISTRICT, ITS SUCCESSORS AND ASSIGNS, FOR OPEN SPACE.
9. TRACTS D & F SHALL BE OWNED AND MAINTAINED BY DOUGLAS COUNTY, ITS SUCCESSORS AND ASSIGNS, FOR RIGHT-OF-WAY.

ADDITIONAL TRACT AND EASEMENTS NOTES:

1. TRACT A, AS SHOWN HEREON IS DEDICATED TO THE PINERY COMMERCIAL METROPOLITAN DISTRICT NO. 2 FOR OPEN SPACE AND DRAINAGE PURPOSES.
2. TRACT B, AS SHOWN HEREON IS DEDICATED TO THE PINERY COMMERCIAL METROPOLITAN DISTRICT NO. 2 FOR OPEN SPACE AND DRAINAGE PURPOSES.
3. TRACT C, AS SHOWN HEREON IS DEDICATED TO DOUGLAS COUNTY FOR RIGHT-OF-WAY, ACCESS, AND UTILITY PURPOSES. THIS TO BE WRITTEN BY SEPARATE DOCUMENT.
4. TRACT D, KNOWN AS PINERY CENTER BOULEVARD, AS SHOWN HEREON IS DEDICATED TO DOUGLAS COUNTY FOR RIGHT-OF-WAY, ACCESS, AND UTILITY PURPOSES.
5. TRACT E, AS SHOWN HEREON IS DEDICATED TO THE PINERY COMMERCIAL METROPOLITAN DISTRICT NO. 2 FOR OPEN SPACE AND DRAINAGE PURPOSES.
6. TRACT F, AS SHOWN HEREON IS DEDICATED TO DOUGLAS COUNTY FOR RIGHT-OF-WAY, ACCESS, AND UTILITY PURPOSES.

SURVEYOR'S CERTIFICATE

I, MICHAEL J. NOFFSINGER, A DULY REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF COLORADO, DO HEREBY CERTIFY THAT THIS PLAT TRULY AND CORRECTLY REPRESENTS THE RESULTS OF A SURVEY MADE ON APRIL 28, 2021, BY ME OR UNDER MY DIRECT SUPERVISION AND THAT ALL MONUMENTS EXIST AS SHOWN HEREON; THAT MATHEMATICAL CLOSURE ERRORS ARE LESS THAN 1:50,000 (SECOND ORDER); AND THAT SAID PLAT HAS BEEN PREPARED IN FULL COMPLIANCE WITH ALL APPLICABLE LAWS OF THE STATE OF COLORADO DEALING WITH MONUMENTS, SUBDIVISIONS OR SURVEYING OF LAND, ALL SURVEYING REGULATORY RULES, REQUIREMENTS, AND STANDARDS OF PRACTICE, AND ALL APPLICABLE PROVISIONS OF THE DOUGLAS COUNTY SUBDIVISION RESOLUTION. THIS CERTIFICATION IS BASED ON MY KNOWLEDGE, INFORMATION AND BELIEF AND IS NOT A GUARANTY OR WARRANTY, EITHER EXPRESSED OR IMPLIED.

I ATTEST THE ABOVE ON THIS _____ DAY OF _____, 20__

FOR REVIEW

_____
MICHAEL J. NOFFSINGER, LICENSED PROFESSIONAL LAND SURVEYOR COLORADO P.L.S. NO. 38367
FOR AND ON BEHALF OF AZTEC CONSULTANTS, INC.

NOTICE: ACCORDING TO COLORADO LAW, YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF THE CERTIFICATION SHOWN HEREON.

NOTICE: PER THE STATE OF COLORADO BOARD OF LICENSURE FOR ARCHITECTS, PROFESSIONAL ENGINEERS, AND PROFESSIONAL LAND SURVEYORS RULE 1.6.B.2 THE WORD "CERTIFY" AS USED HEREON MEANS AN EXPRESSION OF PROFESSIONAL OPINION AND DOES NOT CONSTITUTE A WARRANTY OR GUARANTEE, EXPRESSED OR IMPLIED. THE SURVEY REPRESENTED HEREON HAS BEEN PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION IN ACCORDANCE WITH APPLICABLE STANDARDS OF PRACTICE AND IS BASED UPON MY KNOWLEDGE, INFORMATION AND BELIEF.

CLERK AND RECORDERS CERTIFICATE

STATE OF COLORADO)
COUNTY OF DOUGLAS)

I HEREBY CERTIFY THAT THIS PLAT WAS FILED IN MY OFFICE ON THIS __ DAY OF _____ 2021,

A.D., AT _____ A.M./P.M. AND WAS RECORDED AT RECEPTION NO. _____

_____
DOUGLAS COUNTY CLERK AND RECORDER

AZTEC CONSULTANTS, INC.
300 East Mineral Ave., Suite 1
Littleton, Colorado 80122
Phone: (303) 713-1898
Fax: (303) 713-1897
www.aztecconsultants.com

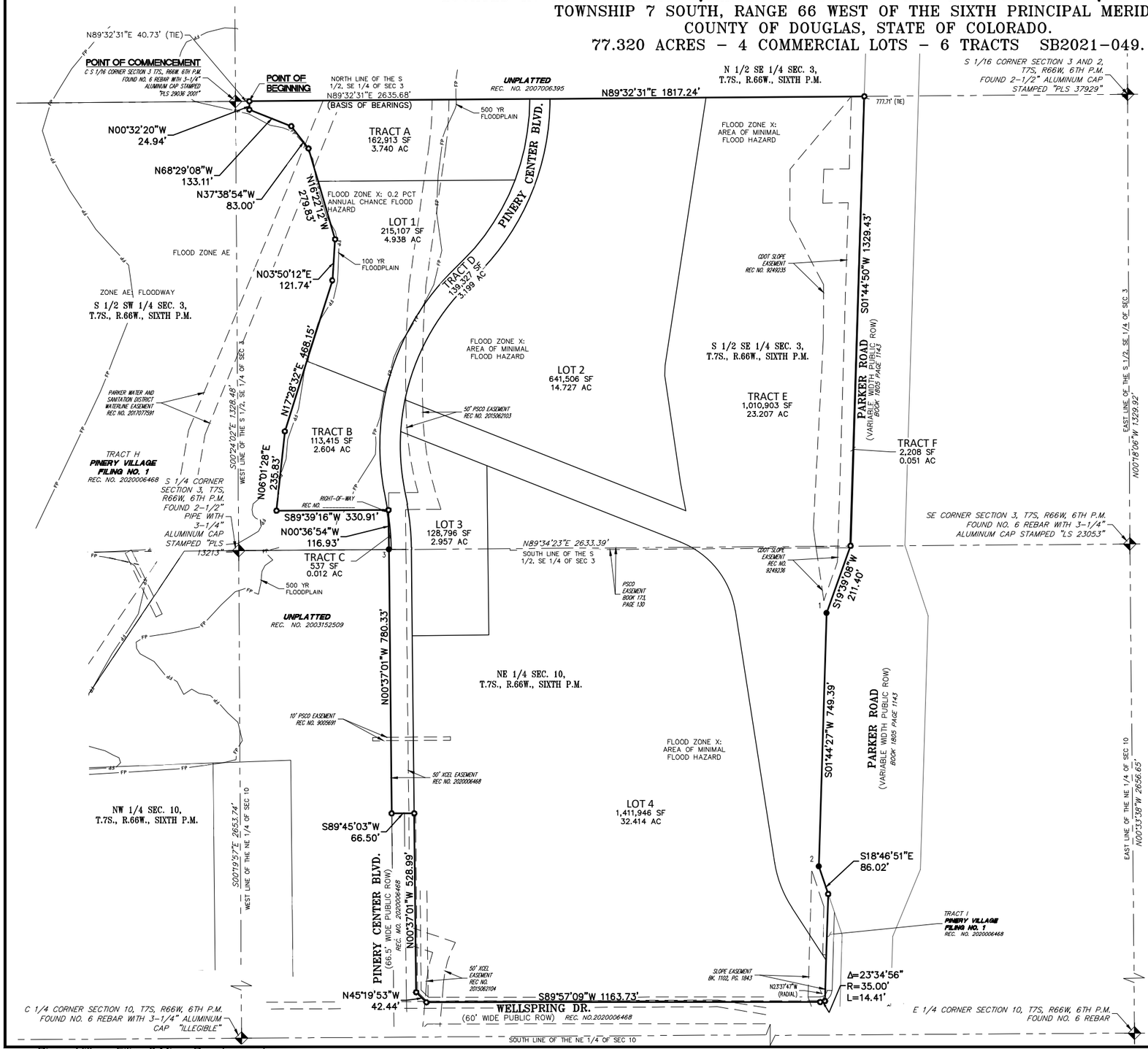
AzTec Proj. No.: 54820-23 Drawn By: RDR

DEVELOPER
STARWOOD LAND
1500 W. CANAL COURT
LITTLETON, COLORADO 80120

DATE OF PREPARATION:	07-12-2021
SCALE:	NA
SHEET 1 OF 4	

PINERY VILLAGE FILING NO. 2

A PORTION OF PLANNING AREAS 41, 42, 43, & OPEN SPACE H-1
LOCATED IN THE SOUTHEAST QUARTER OF SECTION 3 AND THE NORTHEAST QUARTER OF SECTION 10,
TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
COUNTY OF DOUGLAS, STATE OF COLORADO.
77.320 ACRES - 4 COMMERCIAL LOTS - 6 TRACTS SB2021-049.



MONUMENT SYMBOL LEGEND

- SET NO. 5 X 18" REBAR WITH 1-1/4" ORANGE PLASTIC CAP STAMPED "AZTEC LS 38367"
- 1 FOUND 4"X4" CONCRETE WITH NO. 5
- 2 FOUND 5" DIAMETER CONCRETE WITH 3" BRASS CAP STAMPED "CDOT ROW"
- 3 FOUND NO. 5 REBAR WITH 1-1/4" YELLOW PLASTIC CAP STAMPED "LS5112"
- (ROW) RIGHT-OF-WAY
- —•— LIMITS OF FLOOD PLAIN

N

0' 75' 150' 300'
SCALE: 1" = 150'

FOR REVIEW

FOR AND ON BEHALF OF
AZTEC CONSULTANTS, INC

AZTEC CONSULTANTS, INC.
300 East Mineral Ave., Suite 1
Littleton, Colorado 80122
Phone: (303) 713-1898
Fax: (303) 713-1897
www.aztecconsultants.com

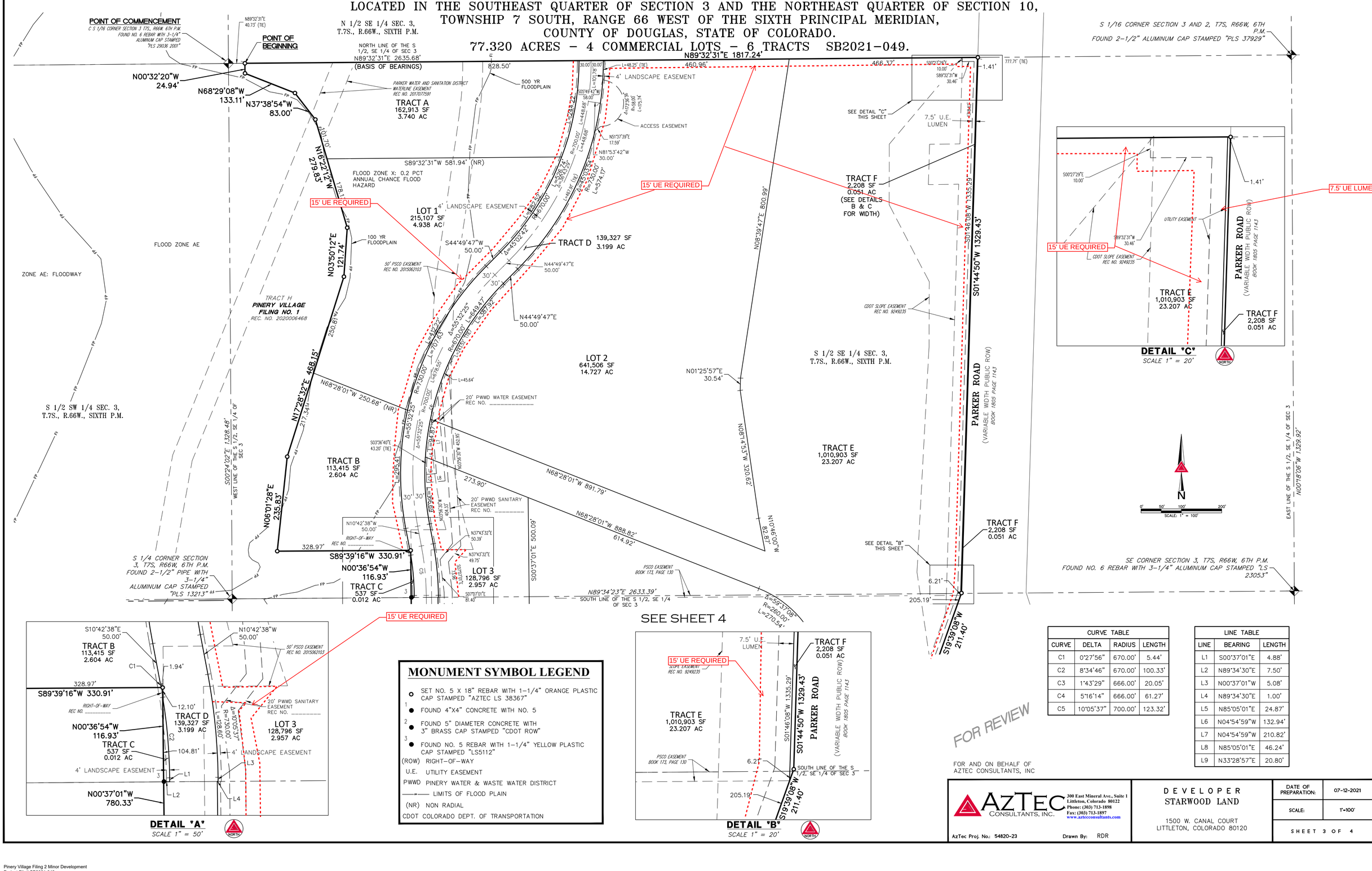
AzTec Proj No 54820-23 Drawn By RDR

DEVELOPER
STARWOOD LAND
1500 W. CANAL COURT
LITTLETON, COLORADO 80120

DATE OF PREPARATION	07-12-2021
SCALE	1"=150'
SHEET 2 OF 4	

PINERY VILLAGE FILING NO. 2

A PORTION OF PLANNING AREAS 41, 42, 43, & OPEN SPACE H-1
LOCATED IN THE SOUTHEAST QUARTER OF SECTION 3 AND THE NORTHEAST QUARTER OF SECTION 10,
TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
COUNTY OF DOUGLAS, STATE OF COLORADO.
77.320 ACRES – 4 COMMERCIAL LOTS – 6 TRACTS SB2021-049.



DETAIL "A"
SCALE 1" = 50'

DETAIL "B"
SCALE 1" = 20'

DETAIL "C"
SCALE 1" = 20'

MONUMENT SYMBOL LEGEND

- ○ SET NO. 5 X 18" REBAR WITH 1-1/4" ORANGE PLASTIC CAP STAMPED "AZTEC LS 38367"
- ● [1] FOUND 4"X4" CONCRETE WITH NO. 5
- ● [2] FOUND 5" DIAMETER CONCRETE WITH 3" BRASS CAP STAMPED "CDOT ROW"
- ● [3] FOUND NO. 5 REBAR WITH 1-1/4" YELLOW PLASTIC CAP STAMPED "LS5112"

(ROW) RIGHT-OF-WAY
U.E. UTILITY EASEMENT
PWWD PINERY WATER & WASTE WATER DISTRICT
—//— LIMITS OF FLOOD PLAIN
(NR) NON RADIAL
CDOT COLORADO DEPT. OF TRANSPORTATION

CURVE TABLE			
CURVE	DELTA	RADIUS	LENGTH
C1	0°27'56"	670.00'	5.44'
C2	8°34'46"	670.00'	100.33'
C3	1°43'29"	666.00'	20.05'
C4	5°16'14"	666.00'	61.27'
C5	10°05'37"	700.00'	123.32'

LINE TABLE		
LINE	BEARING	LENGTH
L1	S00°37'01"E	4.88'
L2	N89°34'30"E	7.50'
L3	N00°37'01"W	5.08'
L4	N89°34'30"E	1.00'
L5	N85°05'01"E	24.87'
L6	N04°54'59"W	132.94'
L7	N04°54'59"W	210.82'
L8	N85°05'01"E	46.24'
L9	N33°28'57"E	20.80'

FOR REVIEW

FOR AND ON BEHALF OF
AZTEC CONSULTANTS, INC

AZTEC CONSULTANTS, INC.
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Phone: (303) 713-1898
Fax: (303) 713-1897
www.aztecconsultants.com

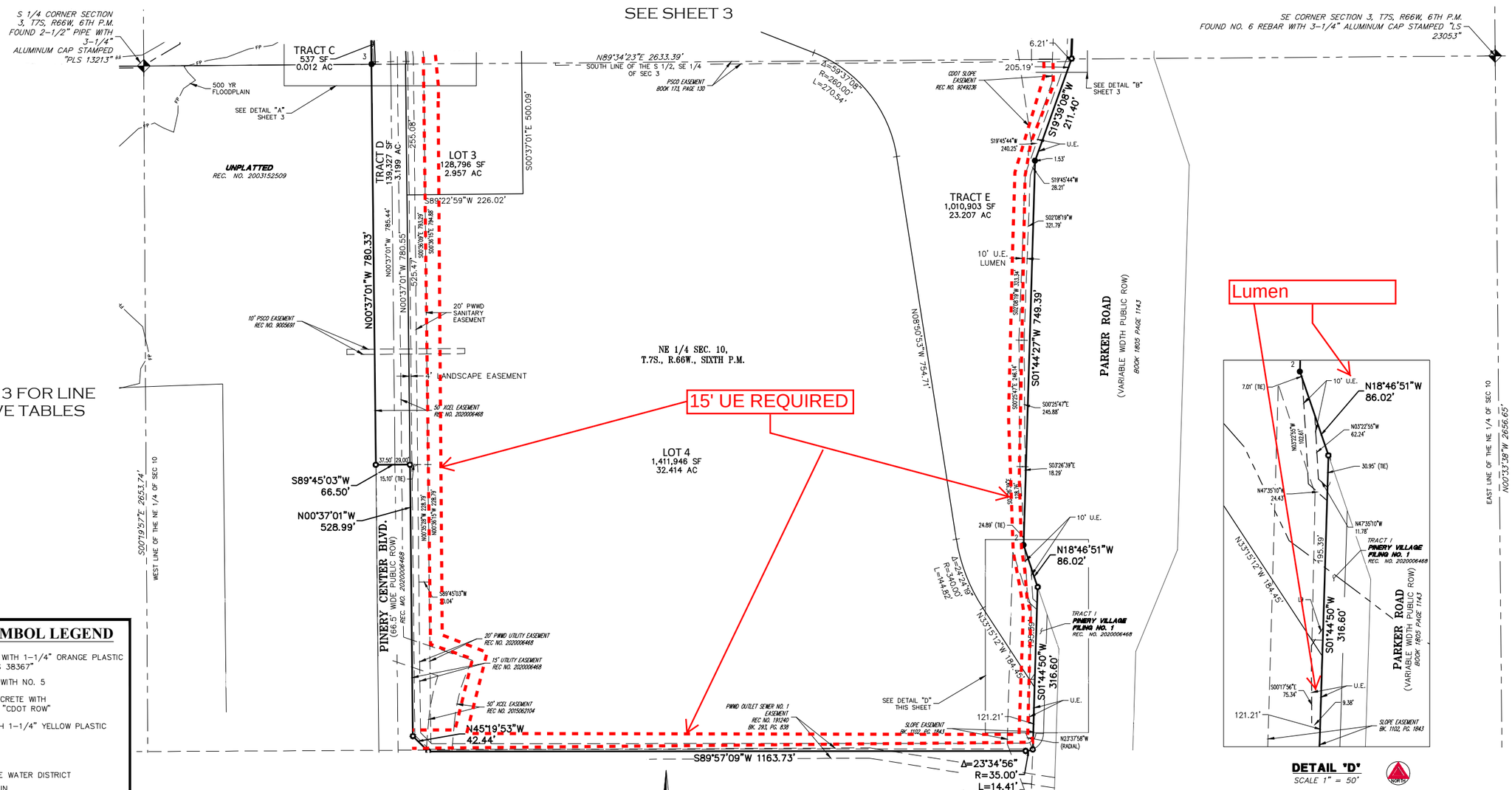
AzTec Proj. No.: 54820-23 Drawn By: RDR

DEVELOPER
STARWOOD LAND
1500 W. CANAL COURT
LITTLETON, COLORADO 80120

DATE OF PREPARATION: 07-12-2021
SCALE: 1"=100'
SHEET 3 OF 4

PINERY VILLAGE FILING NO. 2

A PORTION OF PLANNING AREAS 41, 42, 43, & OPEN SPACE H-1
LOCATED IN THE SOUTHEAST QUARTER OF SECTION 3 AND THE NORTHEAST QUARTER OF SECTION 10,
TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
COUNTY OF DOUGLAS, STATE OF COLORADO.
77.320 ACRES - 4 COMMERCIAL LOTS - 6 TRACTS SB2021-049.



MONUMENT SYMBOL LEGEND

- SET NO. 5 X 18" REBAR WITH 1-1/4" ORANGE PLASTIC CAP STAMPED "AZTEC LS 38367"
- 1 FOUND 4"X4" CONCRETE WITH NO. 5
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- U.E. UTILITY EASEMENT
- PWWD PINERY WATER & WASTE WATER DISTRICT
- LIMITS OF FLOOD PLAIN
- (NR) NON RADIAL
- CDOT COLORADO DEPT. OF TRANSPORTATION

N
0' 50' 100' 200'
SCALE: 1" = 100'

FOR REVIEW

FOR AND ON BEHALF OF
AZTEC CONSULTANTS, INC

DETAIL "D"
SCALE 1" = 50'

AZTEC CONSULTANTS, INC.
300 East Mineral Ave., Suite 1
Littleton, Colorado 80122
Phone: (303) 713-1898
Fax: (303) 713-1897
www.aztecconsultants.com

AzTec Proj No 54820-23 Drawn By RDR

DEVELOPER
STARWOOD LAND
1500 W. CANAL COURT
LITTLETON, COLORADO 80120

DATE OF PREPARATION	07-12-2021
SCALE	1"=100'
SHEET 4 OF 4	

From:	Brooks Kaufman
To:	Michael Pesicka
Cc:	Craig Campbell
Subject:	RE: Pinery Village Filing No. 2 Minor Development Pinery Village Filing 2-SB2021-049
Date:	Friday, February 13, 2026 11:32:18 AM
Attachments:	image001.png image002.png image003.png image004.png image005.png image006.png Pinery Village Filing No. 2 - Final Plat_8th Submittal_12-17-25.pdf

Caution: This email originated outside the organization. Be cautious with links and attachments.

Good morning, Michael

CORE Electric Cooperative and the applicant met this morning pertaining to Pinery Village Filing 2- (SB2021-049)

CORE Electric Cooperative approves and agrees to the applicant's responses below.

CORE Electric Cooperative
1. CORE will require additional utility easements as shown on the attached markup.
Response: A 15' Utility Easement has been added along Pinery Center Boulevard except for areas where a retaining wall is proposed. Perimeter lot easements will be deferred until the lots are subdivision for specific development.

Respectfully

Brooks Kaufman
Lands and Rights of Way Manager

800.332.9540 **MAIN**
720.733.5493 **DIRECT**
303.912.0765 **MOBILE**

www.core.coop.

ELECTRIC COOPERATIVE

The Energy to Thrive™

Book time to meet with me

From: Michael Pesicka <mpesicka@douglas.co.us>
Sent: Thursday, February 12, 2026 8:16 AM

To: Brooks Kaufman <BKaufman@core.coop>
Subject: RE: Pinery Village Filing No. 2 Minor Development

[CAUTION:] This email is from an external source. Avoid clicking links or opening attachments unless you trust the sender and verify the content's safety.

Brooks, thanks for the response. I have notified the applicant to contact you.

Mike Pesicka | Principal Planner
Douglas County Department of Community Development
Address | 100 Third St., Castle Rock, CO 80104
Direct | 303-814-4367 **Main** | 303-660-7460
Email | mpesicka@douglas.co.us

NOTICE: Douglas County Planning does not charge "Approval" fees. Douglas County communicates through our official email accounts ending in @douglas.co.us; beware of phishing scams using similar addesses. If you have questions or concerns about the validity of an email or invoice, please call our Public Outreach and Assistance team at 303-660-7460 or email planning@douglas.co.us

---

From: Brooks Kaufman <BKaufman@core.coop>
Sent: Thursday, February 12, 2026 6:13 AM
To: Michael Pesicka <mpesicka@douglas.co.us>
Subject: RE: Pinery Village Filing No. 2 Minor Development

Caution: This email originated outside the organization. Be cautious with links and attachments.

Good morning, Michael

The applicant did not address our comments, CORE will require a meeting with the applicant on this matter.

Respectfully

Brooks Kaufman
Lands and Rights of Way Manager

800.332.9540 **MAIN**
720.733.5493 **DIRECT**
303.912.0765 **MOBILE**

www.**core**.coop.

Book time to meet with me

From: Michael Pesicka <mpesicka@douglas.co.us>
Sent: Wednesday, February 11, 2026 11:22 AM
To: Brooks Kaufman <BKaufman@core.coop>
Subject: Pinery Village Filing No. 2 Minor Development

[CAUTION:] This email is from an external source. Avoid clicking links or opening attachments unless you trust the sender and verify the content's safety.

Brooks,

Its been awhile since you have reviewed this project (Pinery Village Filing 2-SB2021-049) but I wanted to verify that the applicant's response addresses your comments, see below. Updated plat exhibit attached.

Core Electric Cooperative
1. CORE will require additional utility easements as shown on the attached markup.
Response: A 15' Utility Easement has been added along Pinery Center Boulevard except for areas where a retaining wall is proposed. Perimeter lot easements will be deferred until the lots are subdivision for specific development.

Thank you,

Mike Pesicka | Principal Planner
Douglas County Department of Community Development
Address | 100 Third St., Castle Rock, CO 80104
Direct | 303-814-4367 **Main** | 303-660-7460
Email | mpesicka@douglas.co.us

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From: Doyle - DNR, Katie
To: Michael Pesicka
Subject: Re:Douglas County eReferral (Project Number SB2021-049) Is Ready For Review
Date: Tuesday, November 30, 2021 8:59:24 AM

Dear Mr. Pesicka,

Thank you for the opportunity to comment on the Pinery Village Filing 2 Minor Development under Project #SB2021-049. Our goal in responding to land use proposals such as this is to provide complete, consistent, and timely information to all entities who request comment on matters within our statutory authority.

Upon review of the proposed referral request, Colorado Parks and Wildlife (CPW) has no objections to the application moving forward as planned for approval. Please refer to the previous comment letter from CPW dated February 11, 2020 to Mr. Dan Avery for additional wildlife concerns and development recommendations.

Please do not hesitate to contact us about ways to continue developing and managing your properties in order to maximize wildlife value while minimizing potential conflicts. If you have any further questions, please contact me at (303) 291-7114.

Thank you,

Katie Doyle
District Wildlife Manager - Parker/Castle Rock East

Field Services

Denver Office 303.291.7227
C 720.930.8039 | P 303.291.7114
6060 Broadway, Denver, CO 80216
katie.doyle@state.co.us | www.cpw.state.co.us

December 2, 2021

Craig Campbell
West Region President
Starwood Land Advisors, LLC
385 Inverness Parkway, Suite 310
Englewood, CO 80112

DV 2021-332

Subject: Pinery Village Filing No. 2 – Minor Development Plat

Dear Craig,

Plan Review Summary:

Submitted to Engineering	-	11/4/21
Comments Sent Out	-	12/2/21

Engineering has reviewed the above referenced submittal and have the following comments:

Final Plat Comments

Comment #1-On sheet 1, it appears the Dedication Statement and Board of County Commissioners Certification are missing information. There is right-of-way being dedicated, easements, etc.

Comment #2-On sheet 2, please clarify why the extension of Pinery Center Blvd. is in a Tract.

Comment #3-The plat should provide a Tract for the North Piney Creek channel and the following language should be included for both the channel and the detention facilities: “Drainage Easements are hereby granted to Douglas County across Tracts _____& _____ in Pinery Village Filing No. 2 (the “Subdivision”) for the purpose of accessing, maintaining and repairing storm water management improvements, including but not limited to inlets, pipes, culverts, channels, ditches, hydraulic structures, riprap, detention basins, forebays, micropools and water quality facilities (collectively, the “Facilities”). In the event the Pinery Commercial Metropolitan District, its successors, and assigns (“System Owner”) fails to satisfactorily maintain said facilities, a blanket access easement over the subdivision is also granted to Douglas County, but only for the purpose of accessing the facilities in the event that the drainage easements do not provide adequate access. The maintenance and repair of the facilities located in the subdivision, as shown on the construction plans accepted by Douglas County or on the plat for the subdivision, shall be the responsibility of the system owner in the event such maintenance and repair are not performed by the system owner to the satisfaction of

Douglas County, then Douglas County shall have the right, but not the obligation to enter said subdivision after ten (10) prior written notice to the system owner. Unless there is an emergency, in which case Douglas County shall give notice as soon as practicable, to perform all necessary work, the cost of which shall be paid by the system owner upon billing. In the event the system owner fails to reimburse Douglas County within thirty (30) days after submission of the bill for the costs incurred, Douglas County shall have the right to enforce such obligation by appropriate legal action. It is the system owner's responsibility to construct, maintain, and repair the facilities in a manner consistent with all applicable plans approved or accepted by Douglas County".

Comment #4-The drainage channels/swales along the north & east side of the development should also be included in drainage easements.

Comment #5-Additional right-of-way for North State Highway 83 may be required. This portion of the corridor requires a minimum right-of-way width of 175-ft.

Comment #6-A Subdivision Improvements Agreement (SIA) will be required for this project. The applicant can get a copy of this document from our office or from the Douglas County website. When submitting this document, please provide us with 1-copy with original signatures. Please include a "letter of authorization" for whoever signs the agreement, and the cost estimate exhibits need to be signed by this individual as well. This document will need to be submitted and approved prior to the approval of the final plat.

GESC Comments

Comment #1-On sheet G0.0, please revise the wording of the Douglas County Acceptance Block as follows, "…Douglas County for GESC improvements only". This is a typical comment for all sheets with our signature block.

Comment #2-On sheet G0.1, please remove the Douglas County Acceptance Block from this sheet.

Comment #3-On sheet G0.2, please remove this sheet from the GESC package. The notes are included with our standard notes/detail sheets.

Comment #4-On sheet G1.1, rather than installing the silt fence across the future drainage channel, please look at another option of containing the sediment (check dam, etc.).

Comment #5-On sheets G1.1 – G1.10, please include the length for each segment of silt fence as well as each length of construction fence.

Comment #6-On sheet G1.2, the plans show “JB” (jersey barrier) within the proposed diversion ditches. Our standard details don’t include a detail for a jersey barrier. Please reference BMP’s that are included with our standard notes/detail sheets.

Comment #7-On sheets G1.2, G1.4, & G1.6 please specify the pipe diameter and riprap size for the proposed temporary slope drains.

Comment #8-On sheet G1.5, the proposed silt fence is shown crossing slopes steeper than 5%. Please stager the silt fence to keep from exceeding the 5% slope.

Comment #9-On sheet G1.8, a “temporary construction access” permit may be required for the access onto North Pinery Parkway.

Comment #10-On sheets G2.1 – G2.10, please specify the type and quantity for each area of erosion control blanket.

Comment #11-On sheet G2.3, please include cross sections for the proposed drainage swales.

Comment #12-On sheets G2.5 & G2.7, please show the grades along the easterly bank.

Comment #13-On sheet G2.8, please clarify the surface treatment at the northwesterly corner of the disturbance.

Construction Plan Comments

Comment #1-On sheets C1.1 & C1.2, please remove the Douglas County Acceptance Block from these sheets.

Comment #2-On sheet C1.2, it appears that the Douglas County Storm Sewer Notes are included in the Douglas County Standard Notes.

Comment #3-On sheet C1.2, please remove the pavement thickness from the details. The thickness will be determined by the pavement design report.

Comment #4-On sheet C1.2, please include the centerline stationing that coordinates with the proposed street cross sections.

Comment #5-On sheet C1.2, please relocate the proposed trench drain to the back of sidewalk.

Comment #6-On sheets C4.0 – C4.9, please remove these sheets from this construction package since the grading plans are included in a separate GESC package.

Comment #7-The detention pond calculations for the north pond shows a “depth to invert of outlet pipe” difference of 1.5-ft. (Outlet pipe w/ flow restriction plate). The plans show an elevation difference of 2-ft. Please revise.

Comment #8-On sheet C4.10, please clarify the 20-ft. driveway along the north side of the detention pond.

Comment #9-On sheet C4.10, please provide cross sections for the forebay and include the structural design. Also, please include the structural information for the connections between the baffle blocks and the forebay.

Comment #10-On sheet C4.10, please provide and dimension control joints for the forebay.

Comment #11-On sheet C4.11, please include the structural design for the outlet structure in Section D-D.

Comment #12-On sheet C4.11, please lower the front wall of the outlet structure to within 3 to 4-inches of the bottom of the micropool and the orifice plate needs to extend to the bottom of the micropool in Section D-D.

Comment #13-On sheet C4.11, please include the dimensions for the trash rack and orifice plate.

Comment #14-Please review the following information from the detention pond calculations for the south pond:

- Depth at top of Zone using Orifice Plate – shows 6.42-ft which doesn’t appear to be correct
- Clarify the number of orifices (we try and minimize the number to 3)
- Overflow Weir Front Edge Height – shows 6.42-ft. which doesn’t appear to be correct
- Depth to Invert of Outlet Pipe – shows 0.5-ft. which doesn’t appear to be correct
- Spillway invert Stage – shows 7.9-ft. which doesn’t appear to be correct

Comment #15-On sheet C4.12, please provide a cross section though Pinery Center Blvd. showing the road in relationship to the retaining wall.

Comment #16-On sheet C4.12, please provide cross sections for the forebay and include the structural design. Also, please include the structural information for the connections between the baffle blocks and the forebay.

Comment #17-On sheet C4.12, please provide and dimension control joints for the forebay.

Comment #18-On sheet C4.13, please include the structural design for the outlet structure in Section D-D.

Comment #19-On sheet C4.13, please lower the front wall of the outlet structure to within 3 to 4-inches of the bottom of the micropool and the orifice plate needs to extend to the bottom of the micropool in Section D-D.

Comment #20-On sheet C4.13, please include the dimensions for the trash rack and orifice plate.

Comment #21-On sheets C4.15 – C4.18, please verify the proposed handrail/guardrail meets AASHTO Roadside Design Guide for clear zone and crash criteria.

Comment #22-On sheets C4.15 – C4.18, a License Agreement will be required for the landscaping and retaining walls within the public right-of-way. I will provide you with our standard License Agreement document.

Comment #23-On sheet C4.19, please remove the Douglas County Acceptance Block from this sheet.

Comment #24-Engineering is not familiar with the hydraulic model that was used for this project and will request that the project engineer provide a comparison between this model and the UD-Sewer modeling supported by Urban Drainage & Flood Control District.

Comment #25-On sheet C6.1, please include the flowline transition profiles per Figure 4-6 of our road design manual (typical comment for all sump conditions).

Comment #26-On sheet C6.2, please clarify why manholes A7 & A8 are labeled twice in the profile.

Comment #27-On sheet C6.2, engineering has concerns regarding the proposed cover over the box culvert in regard to the future pavement section. Please look at lowering this box to account for the future pavement section (should be consistent with the storm sewer depths 3.5 to 4-ft.).

Comment #28-On sheet C6.3, the proposed Pinery Center Blvd. roadway improvements need to extend to the northerly property line.

Comment #29-On sheets C6.3 & C6.4, the depth of the proposed storm sewer is a concern (depth needs to be a minimum of 3.5 – 4-ft. without a preliminary pavement design).

Comment #30-On sheet C6.5, our drainage manual requires a 6-ft. manhole for a 48-in. pipe. Please revise.

Comment #31-On sheet C6.7, please clarify that the existing 36-in. pipe will be removed near manhole F4-A. Also, please include the invert information at both manholes.

Comment #32-On sheets C7.1 – C7.14, Douglas County is meeting with Mile High Flood District on Friday to discuss the proposed channel improvements. We will provide comments on the channel re-alignment within the next couple of weeks.

Comment #33-On sheets C7.15 & C7.16, the proposed open channel swales need to be designed per Chapter 8 (Volume 1) of the Mile High Flood Control Districts criteria manual. Please include their figures in the drainage report that applies to each channel section.

Comment #34-On sheets C11.1 & C11.2, our traffic group will be reviewing the signage & striping plans and once I get their comments, I will forward them to you.

Comment #35-Our traffic group has reviewed the traffic analysis and overall, there were no significant changes in the findings of the original traffic study. The purpose of the proposed updated traffic analysis was to incorporate two changes:

- Removal of a roadway connection to Hwy 83 (known as Access A, a 3/4 movement access).
- Changes to Land Use projection and trip generation at the north end of the project. 50,000 square feet of office use was added to the trip generation to replace the previously planned charter school. This results in a decrease of AM peak hour trips and a minor change to the PM peak hour trips.

<u>Required Improvements to accommodate the project are:</u>

- Access Permit for the project Access to US 83 – Right-in/Right-out – the currently issued State Hwy Access Permit for the RI/RO access to SH 83 north of North Pinery Parkway may need to be re-issued due to the increase in trips proposed to use this access (because of the elimination

of Access A which causes volumes using the access to exceed the original (original: 345 vph, new: 515 vph) – Access Permit for the Access at North Pinery Parkway & State Highway 83

- 2030 – US83/North Pinery Parkway – 2nd northbound left-turn lane & Modify the east leg of the median to include a new exclusive westbound left turn lane.
- North Pinery Parkway/Access C – Traffic signal – check warrants at build-out of project
- 2040 – North Pinery Parkway/Pinery Center Blvd. (J Morgan Blvd) – traffic signal
- Auxiliary Lane Evaluation – Access B & Parker Road (with initial development) – Southbound right-turn deceleration lane (378-ft. + 222-ft. taper, 600-ft. total length) – Southbound right-turn acceleration lane (tie into the exiting southbound right-turn deceleration lane approaching North Pinery Parkway, approximately 370-ft. south of Access B)
- Parker Road and Pinery Parkway (short-term) – Second northbound left-turn lane (build parallel to the existing 600-ft. total lane length)
- Parker Road and Pinery Parkway (long-term) – New eastbound left-turn lane (110-ft. lane + 60-ft. taper)

Landscaping Comments

Comment #1-On sheet L-01, please add the Douglas County Acceptance Block to this sheet.

Comment #2-On sheets L-05, please clarify the purpose of the driveway onto Pinery Center Blvd.

We cannot recommend approval of this final plat and/or construction plans until these comments have been addressed. If you have any questions, please give me a call.

Sincerely,

Chuck Smith
Development Review Engineer

cc: Matt Williams, P.E.; Assistant Director of Development Review & Stormwater
Mike Pesicka, AICP, Principal Planner

DV21332

December 2, 2021

Mike Pesicka
Principal Planner
Douglas County Community Development
100 Third Street
Castle Rock, CO 80104

Re: SB202-049 Pinery Village Filing No. 2 Minor Development

Dear Mr. Pesicka:

The letter provides comments regarding the Pinery Village Filing 2 Minor Development project to subdivide 77.32 acres into 4 non-residential lots and 6 tracts and the extension of Pinery Center Blvd to the north property line in Douglas County.

Upon researching the cultural resources on the property and the surrounding area the Douglas County Curator recommends a Class II cultural resource survey of the project area.

There is potential for buried archaeological resources related to prehistoric activities in the project area and potential for the discovery of subsurface cultural deposits during ground moving activities. Should buried artifacts and features be discovered, we recommend completion of the appropriate Colorado Office of Archaeology and Historic Preservation (OAHP) Data Management and Historic and/or Prehistoric Component forms, following OAHP guidelines, with accompanying sketch maps and photographs. Completed forms are submitted to OAHP to ensure that Douglas County's historic or prehistoric data is included in the Colorado OAHP state-wide database of cultural resources.

Thank you in advance for your attention to the preservation and protection of Douglas County's cultural resources for future generations.

Sincerely,

Brittany Cassell

Brittany Cassell, Curator

From: Brittany Cassell
To: Michael Pesicka
Subject: RE: Cultural Resource Survey for Project No. SB2021-049
Date: Tuesday, March 29, 2022 8:18:27 AM

Hi Mike,

I have no questions or concerns on the report. Sounds like this property had a lot of activity in the past but nothing eligible to be listed on the National Register.

Thank you!
Brittany

From: Michael Pesicka <mpesicka@douglas.co.us>
Sent: Tuesday, March 29, 2022 8:02 AM
To: Brittany Cassell <bcassell@douglas.co.us>
Subject: RE: Cultural Resource Survey for Project No. SB2021-049

Hi Brittany, do you have any questions or concerns for the applicant about the Cultural Resource Survey for SB2021-049?

Thanks,

Mike Pesicka | Principal Planner
Douglas County Department of Community Development
Address | 100 Third St., Castle Rock, CO 80104
Direct | 303-814-4367 **Main** | 303-660-7460
Email | mpesicka@douglas.co.us

From: Brittany Cassell <bcassell@douglas.co.us>
Sent: Thursday, March 17, 2022 2:33 PM
To: Michael Pesicka <mpesicka@douglas.co.us>
Subject: RE: Cultural Resource Survey for Project No. SB2021-049

Hi Mike,

Thank you for sharing this with me. I am glad the got the survey completed.

Thank you!
Brittany

From: Michael Pesicka <mpesicka@douglas.co.us>
Sent: Thursday, March 17, 2022 2:27 PM
To: Brittany Cassell <bcassell@douglas.co.us>
Subject: Cultural Resource Survey for Project No. SB2021-049

Hi Brittany,

During the referral process for Project No. SB2021-049, DC Historic Preservation recommended submittal of a Cultural Resource Survey. Attached is that survey from the applicant. Please let me know if you have any comments.

Thank you,

Mike Pesicka | Principal Planner
Douglas County Department of Community Development
Address | 100 Third St., Castle Rock, CO 80104
Direct | 303-814-4367 **Main** | 303-660-7460
Email | mpesicka@douglas.co.us

From: Chuck Smith
To: Mark Cevaal; Laura Hinds
Cc: Michael Pesicka; Craig Campbell; William Conway; Jim Watt; Mary Powell
Subject: RE: Pinery Village Filing No. 2 - Vegetation Management Plan
Date: Friday, February 17, 2023 11:01:46 AM
Attachments: image002.png
image007.png
MEP - 109059 - Pinery Village F2 Design Approval Letter.msg

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Good Morning All,

Attached is the email from MHFD on the design approval for Pinery Village #2 – I thought I had send this out. However their approval is attached

Thanks

From: Mark Cevaal <mcevaal@redland.com>
Sent: Monday, January 9, 2023 5:06 PM
To: 'Laura Hinds' <lhinds@mhfd.org>
Cc: Michael Pesicka <mpesicka@douglas.co.us>; Chuck Smith <CSmith@douglas.co.us>; Craig Campbell <ccampbell@starwoodland.com>; William Conway <wconway@redland.com>; 'Jim Watt' <jwatt@mhfd.org>; 'mpowell@mhfd.org' <mpowell@mhfd.org>
Subject: Pinery Village Filing No. 2 - Vegetation Management Plan

Laura,
Please find attached a revised Vegetation Management Plan for Pinery Village Filing No. 2 along with our responses to the comments. We have incorporated Mary's recommendations into the Plan.

Let us know if you have any questions.

Thanks,

MARK CEVAAL, P.E.
Sr. Project Manager
Associate Principal

signature_931543734

1500 West Canal Court
Littleton, CO 80120
Office: (720) 283-6783 x136
Cell: (303) 517-2464

mcevaal@redland.com
www.redland.com

From: Chuck Smith <CSmith@douglas.co.us>
Sent: Thursday, December 22, 2022 12:51 PM
To: Mark Cevaal <mcevaal@redland.com>; Craig Campbell <ccampbell@starwoodland.com>
Cc: Michael Pesicka <mpesicka@douglas.co.us>
Subject: [External] FW: Pinery Commercial - Drainage

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Good Afternoon All,

Attached are a couple of comments from MHFD regarding the weed management plan

Hope you all have a Merry Christmas!!

From: Laura Hinds < >
Sent: Thursday, December 22, 2022 12:08 PM
To: Chuck Smith <CSmith@douglas.co.us>
Cc: Jim Watt < >; Mary Powell < >
Subject: RE: Pinery Commercial - Drainage

Hi Chuck,
Please see attached - the MHFD Environmental Manager, Mary Powell, review the Vegetation Management plan and provided her feedback. There were a few recommendations on the values in the tables but overall felt it was a well thought out plan.

Please let us know if there are any questions or concerns.

Thank you,

Laura

Laura Hinds, P.E.
MILE HIGH FLOOD DISTRICT

From: Chuck Smith <CSmith@douglas.co.us>
Sent: Thursday, December 15, 2022 12:48 PM
To: Jim Watt <jwatt@mhfd.org>
Cc: Laura Hinds <lhinds@mhfd.org>

Subject: RE: Pinery Commercial - Drainage

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Hi Jim & Laura

Attached is the applicants vegetation management plan and a response to comments (I highlighted MHFD response in yellow). If you need anything else, please let me know

Thanks

From: Jim Watt <jwatt@mhfd.org>
Sent: Tuesday, November 8, 2022 10:24 AM
To: Chuck Smith <CSmith@douglas.co.us>
Cc: Laura Hinds <lhinds@mhfd.org>
Subject: RE: Pinery Commercial - Drainage

Chuck,

Thanks for coordinating the Pinery meeting today. I wanted to reshare this attached email with the vegetation management plan template that we discussed. Let me know if there is a need for any follow up outside of the direct coordination with the developer.

Could you help me to understand if the county has other processes or report products that may overlap with a revegetation management plan? Outside of the SWMP are there any other weed management plans that the County already requires?

Thanks,
Jim

Jim Watt, P.E., CFM
Watershed Manager
MILE HIGH FLOOD DISTRICT
2480 W. 26th Ave. Suite 156-B | Denver, CO 80211
Office: 303-455-6277 | **Direct:** 303-749-5455 | www.mhfd.org

Protecting People, Property, and our Environment

From: Jim Watt
Sent: Thursday, October 27, 2022 2:59 PM
To: Chuck Smith <CSmith@douglas.co.us>
Cc: Laura Hinds <lhinds@mhfd.org>
Subject: RE: Pinery Commercial - Drainage

Hi Chuck – Thanks for reaching out to coordinate on this topic.

Is the current request from Starwood to forego this Vegetation Management Plan altogether or just for the exclusion area that they highlighted?

The only outstanding comment that MHFD has for this project is to provide a vegetation management plan for the low flow channel and the spill floodplain channel associated with North Piney Creek. This request and the template for the plan were provided with our 6/1/22 comments. Ultimately, for this to reach final acceptance we will look for these areas to be established with planned native vegetation and be reasonably weed free. We have found from past projects that proper establishment of native vegetation and weed control took a signification additional effort after construction to reach establishment, so as a result, we will be looking to have this vegetation management plan in place for these types of larger MEP efforts. The goal is to have a guidance document for the developer / contractor to follow which will result in the vegetation community required by the design team. The upfront costs of this vegetation management plan will likely save money over the duration of the project by guiding proactive management of the revegetation process.

Not long ago, we had a meeting with the development team to discuss the vegetation management plan comment and I had thought we cleared up the work area to exclude the Cherry Creek floodplain on only focus on the North Piney Creek floodplain. Apologies that the County was not in attendance for that meeting. This project is very unusual in the that the active channel and the floodplain diverge, so I can understand how this island exclusion area is presenting issues. I have attached a figure that shows the specific MHFD area of interest for the vegetation management plan. While MHFD will not focus on the areas that Starwood has highlighted, we do think that a proactive management of this area should be encouraged if not required by the County. I have not seen the condition of the Starwood exclusion area, so it is difficult to determine if issues in this exclusion area will spill over into the adjacent North Piney Creek areas that we are considering for MEP. Work performed on for development by ERO has documented weed issues with the area, so at a minimum, MHFD reserves the right to comment on the condition of the vegetation in this area once we reach the final establishment phases of the MEP process. I recognize and agree with Starwood that managing weeds and reestablishing a native vegetation community in this upland Cherry Creek and N. Piney Creek floodplain area is going to be difficult. However, I believe that it is achievable and that this change in land use / management responsibilities is the appropriate time to address the issue.

Let me know if a follow up conversation is needed.

Sincerely,

Jim

From: Laura Hinds <lhinds@mhfd.org>
Sent: Wednesday, October 26, 2022 9:36 AM
To: Jim Watt <jwatt@mhfd.org>
Subject: FW: Pinery Commercial - Drainage

Laura Hinds, P.E.
Project Engineer
MILE HIGH FLOOD DISTRICT
2480 W. 26th Ave Suite 156-B | Denver, CO 80211
Office: 303-455-6277 | **Direct:** 303-929-8342 | www.mhfd.org

Protecting People, Property, and our Environment





From: Chuck Smith <CSmith@douglas.co.us>
Sent: Tuesday, October 25, 2022 11:36 AM
To: Laura Hinds <lhinds@mhfd.org>
Subject: Pinery Commercial - Drainage

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Good Morning Laura,

I had a conversation with Craig Campbell from Starwood Land regarding MHFD's comments regarding the vegetation of the floodplain. I talked with Brad Robenstein this morning to get his thoughts and I know the owner is willing to provide weed control for their property, however they are not comfortable to try and get significant coverage within the shaded area (see attached exhibit). There point is they are not disturbing this area and since it will be dry the majority of the time, it would be difficult to get much to grow.

Just wanted to see if there was a way to work around this requirement and not hold up maintenance eligibility.

Thanks for your time

Chuck Smith, CFM | Development Review Engineer
Douglas County Department of Public Works Engineering
Engineering Services
Address | 100 Third St., Castle Rock, CO 80104
Main | 303-660-7490
Email | csmith@douglas.co.us

MILE HIGH FLOOD DISTRICT
2480 W. 26th Ave Suite 156-B | Denver, CO 80211
TEL 303 455 6277 | FAX 303 455 7880
www.mhfd.org

For MHFD staff use only.	
MHFD Project ID:	109059
Design Approval:	01/13/2023
Construction Approval:	Not yet completed
Final Acceptance:	Not yet completed

Date: January 13, 2023
To: Chuck Smith (Douglas)
Via email
Subject: Approval of Design for Maintenance Eligibility Features

Project Name:	Pinery Village Filing 2 (PVF2)
Date of Plans:	08/15/2022 (C1.0, C4.1-C4.4, C6.12, C7.1, C7.2, C12.4, C12.6)
Description of MEP Features:	North detention pond outfall and spillway to Cherry Creek South detention pond outfall and spillway to North Pinery Creek North Pinery Creek channel and floodplain

The construction plans and specifications for maintenance eligible features in the referenced project are hereby approved. The project will be eligible for District maintenance assistance upon satisfactory construction per the approved design and certification of maintenance eligibility (final acceptance) as determined by the District. **Construction must begin within two years of the date of this memorandum, or the design approval will expire.** This project may require federal, state, or local permits in addition to this design approval. The District will follow the procedure listed below to ascertain the acceptability of the construction effort. Your assistance with this procedure will be necessary to qualify the project for District maintenance assistance. The District staff, or consultants retained by the District, will observe construction activities.

1) The District or its consultant may conduct site visits during project construction as deemed necessary to observe construction activities for conformance with the approved design. All grouted boulder installations must receive a pre-grout sign-off. Construction deficiencies should be reported to your contact, who will take the necessary actions to correct deficiencies. Such visits will not relieve the local government, the owner (developer), or the contractor of the obligation to construct the project per the approved design. The design consultant should maintain a presence during the construction phase to clarify the design intent and verify construction surveys and layout.
2) Upon completion of the project, representatives from the District or its consultant, local government, contractor, design consultant, and the owner (developer) shall conduct a walk-through inspection of the project and prepare a list of deficiencies (punch list) to be corrected. The local government is responsible for arranging the inspection.
3) When the punch list items have been addressed, the local government should notify the District to inspect the project again. If the project is adequate, written notice of construction acceptance for maintenance eligibility will be sent to you (MEP Step 2 of 3).
4) Grass-lined facilities will be eligible for maintenance assistance after an adequate vegetative cover is established.
5) Changes to approved designs can only be made using the "Notice of Change to Approved Design" form (enclosed).

We look forward to working with you on this project.

Sincerely,

Jim Watt, P.E., CFM
Watershed Manager, Mile High Flood District
jwatt@mhfd.org

Enclosed: MHFD Project Contact Information Request (*To be filled out and returned with approved plans)*
Notice of Change to Approved Design (Blank Form)
Design Approval Exhibit (MEP ID: #109059)

MILE HIGH FLOOD DISTRICT
2480 W. 26th Ave Suite 156-B | Denver, CO 80211
TEL 303 455 6277 | FAX 303 455 7880
www.mhfd.org

MAINTENANCE ELIGIBILITY PROGRAM (MEP)
Notice of Change to Approved Design

MEP ID:	
Change No.	
Change Date:	
Design Approval Date:	

Project Name:

Description of changes made to Approved Design (attach appropriate drawings, specifications, or calculations):

Justification:

Impact of change on function of the facility, channel or features:

APPROVALS REQUIRED

CONTACT	PRINTED	SIGNED	DATE
Design Consultant			
Owner/Developer			
Local Government			
Contractor			
MHFD			

SOUTH METRO FIRE RESCUE
FIRE MARSHAL'S OFFICE

Mike Pesicka, Principal Planner
Douglas County Department of Community Development, Planning Services
100 Third St
Castle Rock Co 80104
303.660.7460
303.660.9550 Fax

Project Name:	Pinery Village Filing No. 2 – Minor Development
Project File #:	**SB2021-049**
S Metro Review #	REFRP21-00240
Review date:	November 22, 2021
Plan reviewer:	Aaron Miller 720.989.2246 aaron.miller@southmetro.org
Project Summary:	Proposed Minor Development to subdivide 77.32 acres into 4 non-residential lots and 6 tracts and the extension of Pinery Center Blvd to the north property line. The property is zoned Planned Development and is located in the northeast portion of the County, approximately one-quarter mile north of North Pinery Parkway and west of State Highway 83 and partially bordered on the north by the Town of Parker.
Code Reference:	Douglas County Fire Code, 2018 International Fire Code, and 2018 International Building Code with amendments as adopted by Douglas County.

South Metro Fire Rescue (SMFR) has reviewed the provided documents and has no objections to the proposed minor development. Applicants and Contractors are encouraged to contact SMFR regarding the applicable permit requirements for the proposed project.

November 29, 2021

Mike Pesicka
Douglas County Department of Community Development
Planning Services Division
100 Third Street
Castle Rock, CO 80104

RE: Pinery Village Filing 2, SB2021-049
TCHD Case No. 7349

Dear Mr. Pesicka,

Thank you for the opportunity to review and comment on the Minor Development to subdivide 77.32 acres into 4 non-residential lots and 6 tracts and the extension of Pinery Center Blvd to the north property line, located in Pinery West. Tri-County Health Department (TCHD) staff has reviewed the application for compliance with applicable environmental and public health regulations and principles of healthy community design. After reviewing the application, TCHD has the following comments.

Water and Sewer Service
A will-serve letter has been provided by Pinery Water and Wastewater District. Based on this letter, TCHD is providing a favorable recommendation regarding the proposed method of sewage disposal.

Community design to support walking and bicycling
Because chronic diseases related to physical inactivity and obesity now rank among the country's greatest public health risks, TCHD encourages community designs that make it easy for people to include regular physical activity, such as walking and bicycling, in their daily routines. Because research shows that the way we design our communities can encourage regular physical activity, TCHD strongly supports community plans that incorporate pedestrian and bicycle amenities that support the use of a broader pedestrian and bicycle network. Increasing multi-modal transportation has additional co-benefits including improved air quality, which can reduce contributions to climate change and exposure to pollutants associated with a number of health problems including asthma, lung cancer, and heart disease.

In order to promote walking and bicycling through this development, TCHD encourages the applicant to consider the inclusion of the following as they design the community.

- A system of sidewalks, bike paths and open space trail networks that are well-designed and well-lit, safe, and attractive so as to promote bicycle and pedestrian use.

- Bicycle and pedestrian networks that provide direct connections between destinations in and adjacent to the community.

- Where public transportation systems exist, direct pedestrian access should be provided to increase transit use and reduce unnecessary vehicle trips, and related vehicle emissions. The pedestrian/bicycle networks should be integrated with the existing and future transit plans for the area.

- Streets that are designed to be pedestrian/bike friendly and to reduce vehicle and pedestrian/bicycle fatalities.

- Bicycle facilities and racks are provided in convenient locations.

Please feel free to contact me at 720-200-1575 or kboyer@tchd.org if you have any questions on TCHD's comments.

Sincerely,

Kathy Boyer, REHS
Land Use and Built Environment Specialist III

cc: Sheila Lynch, Keith Homersham, TCHD

External Referral Comments

TO: Mike Pesicka, Douglas County Planning

FROM: Pam Hall, Planner I Development Services Department

DATE: November 12, 2021

SUBJECT: COU21-0029, Case No. SB2021-049

Thank you for the opportunity to review and respond to the Pinery Village Filing 2, Minor Development. The application was reviewed by various Town Departments with no concerns from the Town reviewers. Please keep us informed of any changes to the proposal. Thank you.

DEVELOPMENT SERVICES
100 North Wilcox Street, Castle Rock, CO 80104. P: 720.733.2205 F: 720.733.2217 E: phall@crgov.com

REFERRAL RESPONSE REQUEST

Date sent: November 4, 2021

Comments due by: **December 2, 2021**
Fax: 303.660.9550

Project Name:	Pinery Village Filing No. 2 - Minor Development
Project File #:	SB2021-049
Project Summary:	Proposed Minor Development to subdivide 77.32 acres into 4 non-residential lots and 6 tracts and the extension of Pinery Center Blvd to the north property line. The property is zoned Planned Development and is located in the northeast portion of the County, approximately one-quarter mile north of North Pinery Parkway and west of State Highway 83 and partially bordered on the north by the Town of Parker.

Information on the identified development proposal located in Douglas County is enclosed. Please review and comment in the space provided.

☐ No Comment	
☐ Please be advised of the following concerns:	
☒ See letter attached for detail.	
Agency: Town of Parker	**Phone #:** (303) 805-3331
Your Name: Carson Byerhof	**Your Signature:**
(please print)	**Date:** December 3, 2021

Agencies should be advised that failure to submit written comments prior to the due date, or to obtain the applicant's written approval of an extension, will result in written comments being accepted for informational purposes only.

Sincerely,

Mike Pesicka, Principal Planner

PARKER COLORADO

Your kind of place.

TO:	Mike Pesicka, Principal Planner Douglas County Department of Community Development 100 Third St. Castle Rock, Colorado 80104
FROM:	Carson Byerhof Planner I
DATE:	December 3, 2021
SUBJECT:	SB2021-049 | Pinery Village Filing No. 2 – Minor Development

Dear Mike,

Thank you for the opportunity to review the SB2021-049 | Pinery Village Filing No. 2 – Minor Development. At this time, the Town of Parker Community Development Department has the following comments on this case:

1. The Town has platted the lot just north of what is proposed as Tract A, multi-family. Please be sensitive with uses, landscape buffering, and design standards for proposed lots 1 and 2 (PA 42 and PA 43).

2. Please incorporate pedestrian-friendly infrastructure between RTD and the Town along Pinery Center Blvd.

3. Please reference the attached documents which redline these comments.

In addition to the comments above, please reference the following comments from a previous referral for this site:

Referral Response Comments: *from ZR2018-038, December 10, 2018*

1. The Pinery Village Minor Development is located within the Town's 2035 Master Plan Planning Area and Three-Mile Plan map, and qualifies for annexation into the Town of Parker. The Town supports and welcomes discussions for annexation and rezoning of this property into the Town of Parker.

2. The Concept Site Plan from the project Traffic Impact Study, dated December 13, 2018, shows a site plan with commercial/retail development located adjacent to Parker Road. The Town encourages primary building frontages to front or side with Parker Road, to create a consistent

setback, street wall, and streetscape. Buildings that side with Parker Road are encourage to have enhanced architectural design. To minimize the view of parking lots from Parker Road, parking lots are encouraged to be located away from view of Parker Road, on the sides or rear of buildings.

3. Each proposed retail site is encouraged to provide pedestrian/bicycle connectivity from the primary façade of each building, as well as along Parker Road. Enhanced landscaping along Parker Road is also encouraged.

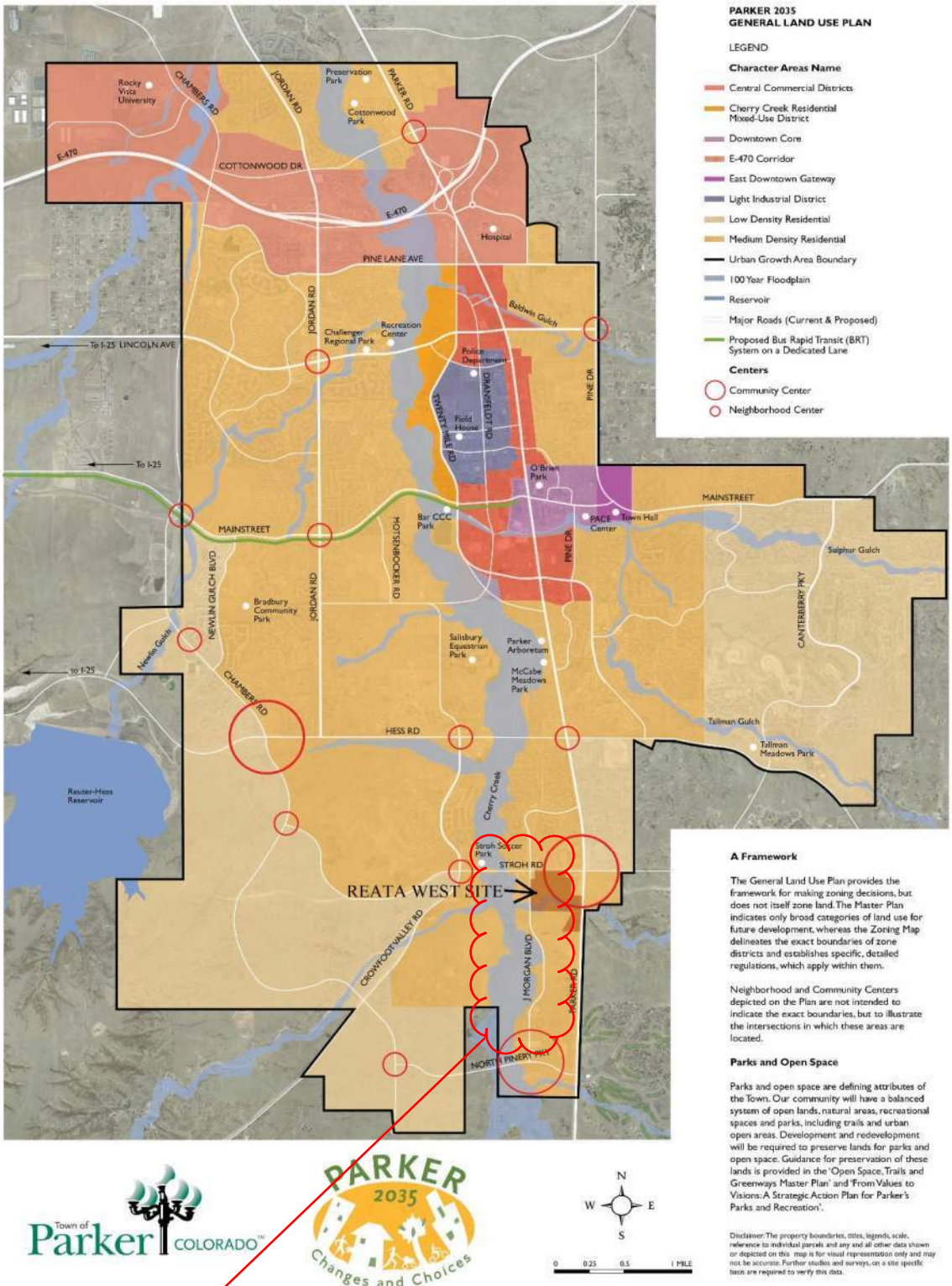
End of Town of Parker comments. Please feel free to contact me at 303-805-3331 or cbyerhof@parkeronline.org if you have any questions.

Sincerely,

Carson Byerhof
Planner I

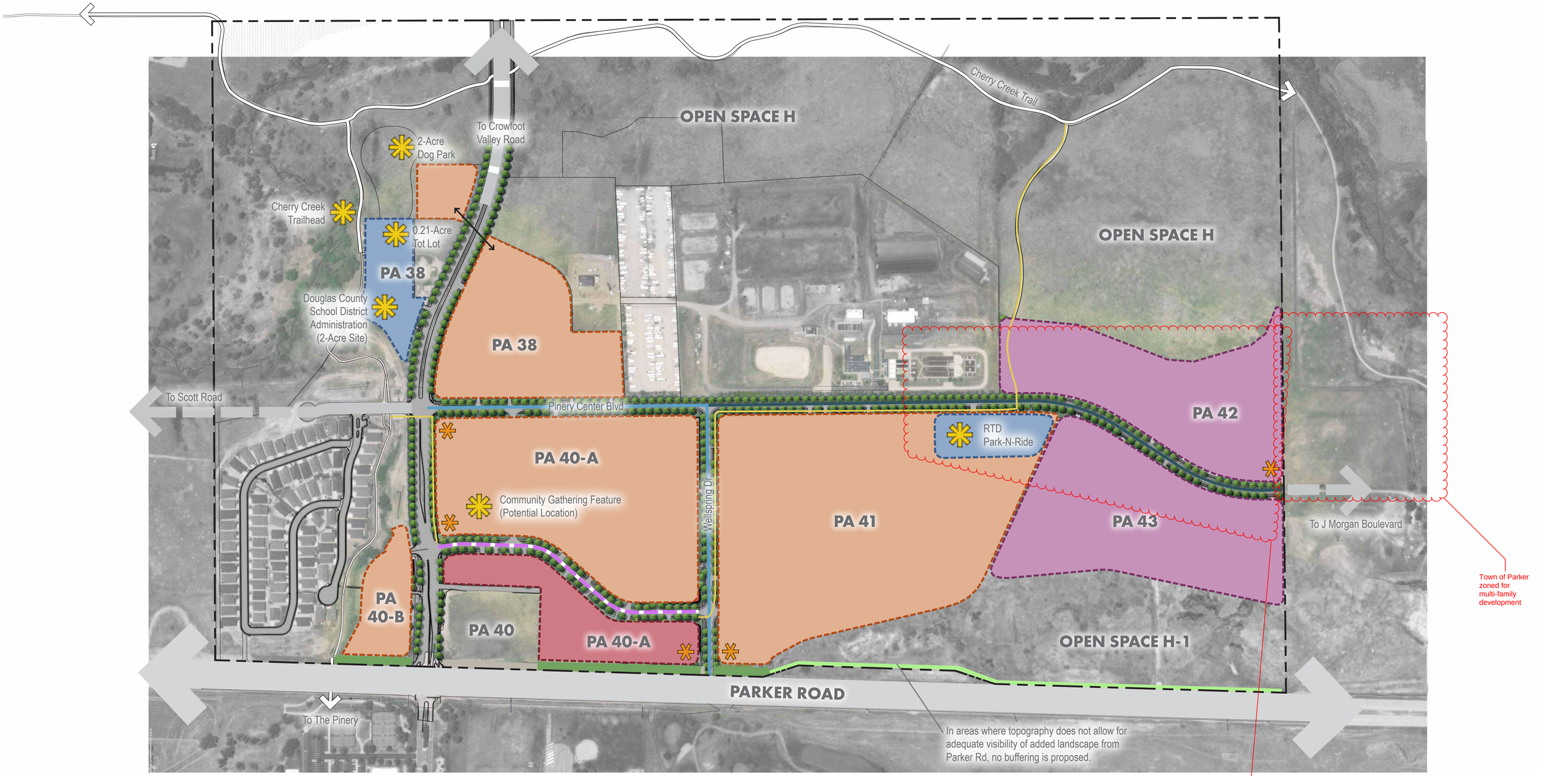
Signature

December 3, 2021
Date



Note plans to expand J Morgan Blvd. to N. Pinery Pkwy (See Reata West Plan Report for more details)

Illustration 2. – Parker General Land Use Plan (with site identified)



LEGEND

Proposed Improvements
- Collector Roadway (Detached Sidewalk)
- Collector Roadway (Attached Sidewalk)
- Parker Road Landscape Buffer
- Site Improvement Plan Related Landscape Buffer
- Pedestrian circulation to Cherry Creek Trail

Future Development
- Roadway Extension
- Internal Pedestrian-Oriented Roadway
- Site Improvement Amenity/Commitment
- Monumentation (Proposed)

Potential Land Uses
- Public Services
- Community Mixed-Use Commercial
- Community-Serving Retail
- Mixed-Use Industrial

PINERY WEST | MASTER LANDSCAPE AND PEDESTRIAN FRAMEWORK PLAN

10/15/2021

NORTH

NOT TO SCALE

NORRIS DESIGN
Planning | Landscape Architecture | Branding

Right of Way & Permits

1123 West 3rd Avenue
Denver, Colorado 80223
Telephone: **303.571.3306**
Facsimile: 303. 571. 3284
donna.l.george@xcelenergy.com

December 8, 2021

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104

Attn: Mike Pesicka

Re: Pinery Village Filing No. 2 Minor Development, Case # SB2021-049

Public Service Company of Colorado's (PSCo) Right of Way and Permits Referral Desk has reviewed the documentation for **Pinery Village F2** and requests that 10-foot-wide dry utility easements are dedicated around the perimeter of each lot, and 15-feet abutting all major rights-of-way.

PSCo requests that the following language or plat note is added to the preliminary and final plats for the subdivision:

> *Permanent structures, improvements, objects, buildings, wells, water meters and other objects that may interfere with the utility facilities or use thereof (Interfering Objects) shall not be permitted within said utility easements and the utility providers, as grantees, may remove any Interfering Objects at no cost to such grantees, including, without limitation, vegetation. Public Service Company of Colorado (PSCo) and its successors reserve the right to require additional easements and to require the property owner to grant PSCo an easement on its standard form.*

Public Service Company has an existing high-pressure natural gas transmission pipeline including a regulator station and associated land rights as shown within this property and it has determined that an **engineering review** is necessary. Any activity including grading, proposed landscaping, erosion control or similar activities involving our existing right-of-way will require Public Service Company approval. Encroachments across PSCo's easements must be reviewed for safety standards, operational and maintenance clearances, liability issues, and acknowledged with a Public Service Company License Agreement to be executed with the property owner. PSCo is requesting that, prior to any final approval of the plat, it is the responsibility of the property owner/developer/contractor to contact PSCo's Encroachment Team for development plan review and execution of a License Agreement (upload all files in PDF format) at: https://www.xcelenergy.com/encroachment_application (click *Colorado* if necessary). An engineer will then be in contact to request specific plan sheets.

The property owner/developer/ contractor must complete the application process for any new gas service or modification to existing facilities via xcelenergy.com/InstallAndConnect. It is then the responsibility of the developer to contact the Designer assigned to the project for approval of design details.

If additional easements need to be acquired by separate PSCo document, a Right-of-Way Agent will need to be contacted.

All easement labels referenced as "XCEL" must be changed to "PSCO". Although "branded" as Xcel Energy, the legal owner and operator of the utility facilities in Colorado is Public Service Company of

Colorado. All utility facilities and related land rights, including fee property, easements, permits, etc., are owned by, operated by and held in the name of Public Service Company of Colorado, a Colorado Corporation.

As a safety precaution, PSCo would like to remind the developer to call the Utility Notification Center by dialing 811 to have all utilities located prior to any construction.

Donna George
Right of Way and Permits
Public Service Company of Colorado / Xcel Energy
Office: 303-571-3306 – Email: donna.l.george@xcelenergy.com

Right of Way & Permits

1123 West 3rd Avenue
Denver, Colorado 80223
Telephone: **303.571.3306**
Facsimile: 303.571.3284
Donna.L.George@xcelenergy.com

February 12, 2026

Douglas County Department of Community Development
100 Third Street
Castle Rock, CO 80104

Attn: Mike Pesicka

Re: * AMENDED RESPONSE
Pinery Village Filing No. 2 Minor Development, Case # SB2021-049

Public Service Company of Colorado's (PSCo) Right of Way & Permits Referral Desk has reviewed the plan for **Pinery Village F2**. Please note that all easement labels referenced as "XCEL" must be changed to "PSCO". Although "branded" as Xcel Energy, the legal owner and operator of the utility facilities in Colorado is Public Service Company of Colorado. All utility facilities and related land rights, including fee property, easements, permits, etc., are owned by, operated by and held in the name of Public Service Company of Colorado, a Colorado Corporation.

Public Service Company has an existing high-pressure natural gas transmission pipeline including a regulator station and associated land rights as shown within this property and it has determined that an **engineering review** is necessary. Any activity including grading, proposed landscaping, erosion control or similar activities involving our existing right-of-way will require Public Service Company approval. Encroachments across PSCo's easements must be reviewed for safety standards, operational and maintenance clearances, liability issues, and acknowledged with a Public Service Company License Agreement to be executed with the property owner. PSCo is requesting that, prior to any final approval of the plat, it is the responsibility of the property owner/developer/contractor to contact PSCo's Encroachment Team for development plan review and execution of a License Agreement (upload all files in PDF format) at: cloud.marketing.xcelenergy.com/encroachment.

The property owner/developer/contractor must complete the application process for any new natural gas service, or modification to existing facilities via Building and Remodeling | Partner Resources | Xcel Energy. It is then the responsibility of the developer to contact the Xcel Designer assigned to the project for approval of design details.

If additional easements need to be acquired by separate PSCo document, a Right-of-Way Agent will need to be contacted.

Contact Colorado 811 for utility locates prior to construction.

Donna George
Right of Way and Permits
Public Service Company of Colorado dba Xcel Energy
Office: 303-571-3306 – Email: donna.l.george@xcelenergy.com

Redland
WHERE GREAT PLACES BEGIN
720.283.6783 Office
1500 West Canal Court
Littleton, Colorado 80120
REDLAND.COM

February 25, 2022

Mr. Mike Pesicka
Douglas County
100 Third Street #220
Castle Rock, CO 80104

Re: Pinery Village Filing No. 2 – Minor Development Plat
2nd submittal – Final Plat and Construction Documents
Response to Comments

Dear Mr. Pesicka,

Please accept this letter on behalf of TF Pinery West, LP, the applicant for Pinery Village Filing No.2. We received your comments and referral comments on December 02, December 06, December 14 and December 16, 2021, regarding the application and we offer the following responses:

Douglas County – Development Review Engineer

Final Plat Comments

1. *On sheet 1, it appears the Dedication Statement and Board of County Commissioners Certification are missing information. There is right-of-way being dedicated, easements, etc.*
   Response: Both statements: Dedication and Board of County Commissioners have been added to the Cover Sheet.

2. *On sheet 2, please clarify why the extension of Pinery Center Blvd. is in a Tract.*
   Response: The future right-of-way for Pinery Center Boulevard is now shown at Right-of-way on the revised Plat.

3. *The plat should provide a Tract for the North Piney Creek channel and the following language should be included for both the channel and the detention facilities: "Drainage Easements are hereby granted to Douglas County across Tracts ____&_____ in Pinery Village Filing No. 2 (the "Subdivision") for the purpose of accessing, maintaining and repairing storm water management improvements, including but not limited to inlets, pipes, culverts, channels, ditches, hydraulic structures, riprap, detention basins, forebays, micropools and water quality facilities (collectively, the "Facilities"). In the event the Pinery Commercial Metropolitan District, its successors, and assigns ("System Owner") fails to satisfactorily maintain said facilities, a blanket access easement over the subdivision is also granted to Douglas County, but only for the purpose of accessing the facilities in the event that*

the drainage easements do not provide adequate access. The maintenance and repair of the facilities located in the subdivision, as shown on the construction plans accepted by Douglas County or on the plat for the subdivision, shall be the responsibility of the system owner in the event such maintenance and repair are not performed by the system owner to the satisfaction of Douglas County, then Douglas County shall have the right, but not the obligation to enter said subdivision after ten (10) prior written notice to the system owner. Unless there is an emergency, in which case Douglas County shall give notice as soon as practicable, to perform all necessary work, the cost of which shall be paid by the system owner upon billing. In the event the system owner fails to reimburse Douglas County within thirty (30) days after submission of the bill for the costs incurred, Douglas County shall have the right to enforce such obligation by appropriate legal action. It is the system owner's responsibility to construct, maintain, and repair the facilities in a manner consistent with all applicable plans approved or accepted by Douglas County".
Response: The note has been added. Tracts A, B, C and E have drainage improvements within the Tract.

4. *The drainage channels/swales along the north & east side of the development should also be included in drainage easements.*
Response: The drainage easements have been added.

5. *Additional right-of-way for North State Highway 83 may be required. This portion of the corridor requires a minimum right-of-way width of 175-ft.*
Response: A 2.5' width of additional ROW is being dedicated to the County in Tract F which will provide the required half ROW width of 87.5'.

6. *A Subdivision Improvements Agreement (SIA) will be required for this project. The applicant can get a copy of this document from our office or from the Douglas County website. When submitting this document, please provide us with 1-copy with original signatures. Please include a "letter of authorization" for whoever signs the agreement, and the cost estimate exhibits need to be signed by this individual as well. This document will need to be submitted and approved prior to the approval of the final plat.*
Response: Acknowledged.

GESC Comments

1. *On sheet G0.0, please revise the wording of the Douglas County Acceptance Block as follows, "…Douglas County for GESC improvements only". This is a typical comment for all sheets with our signature block.*
Response: Block revised with note

2. *On sheet G0.1, please remove the Douglas County Acceptance Block from this sheet.*
Response: Block has been removed

3. *On sheet G0.2, please remove this sheet from the GESC package. The notes are included with our standard notes/detail sheets.*
   Response: Sheet has been removed

4. *On sheet G1.1, rather than installing the silt fence across the future drainage channel, please look at another option of containing the sediment (check dam, etc.).*
   Response: Check dam has been added to plans.

5. *On sheets G1.1 – G1.10, please include the length for each segment of silt fence as well as each length of construction fence.*
   Response: Lengths added to each segment of silt fence and Construction Fence.

6. *On sheet G1.2, the plans show "JB" (jersey barrier) within the proposed diversion ditches. Our standard details don't include a detail for a jersey barrier. Please reference BMP's that are included with our standard notes/detail sheets.*
   Response: Jersey Barriers have been removed and erosion control material added to diversion ditches.

7. *On sheets G1.2, G1.4, & G1.6 please specify the pipe diameter and riprap size for the proposed temporary slope drains.*
   Response: Pipe Diameter and Riprap size added to plans.

8. *On sheet G1.5, the proposed silt fence is shown crossing slopes steeper than 5%. Please stager the silt fence to keep from exceeding the 5% slope.*
   Response: Silt Fences adjusted to account for crossing slopes exceeding 5%.

9. *On sheet G1.8, a "temporary construction access" permit may be required for the access onto North Pinery Parkway.*
   Response: Acknowledged.

10. *On sheets G2.1 – G2.10, please specify the type and quantity for each area of erosion control blanket.*
    Response: Added Erosion Control Specifications.

11. *On sheet G2.3, please include cross sections for the proposed drainage swales.*
    Response: Reference Drainage Report for Swale Design.

12. *On sheets G2.5 & G2.7, please show the grades along the easterly bank.*
    Response: Grades are displayed on sheets G2.5 & G2.7.

13. *On sheet G2.8, please clarify the surface treatment at the northwesterly corner of the disturbance.*
    Response: Added the surface treatment in affected area.

Construction Plan Comments

1. *On sheets C1.1 & C1.2, please remove the Douglas County Acceptance Block from these sheets.*
   Response: Approval block has been removed from these sheets.

2. *On sheet C1.2, it appears that the Douglas County Storm Sewer Notes are included in the Douglas County Standard Notes.*
   Response: Douglas County Storm Sewer notes have been removed from C1.2.

3. *On sheet C1.2, please remove the pavement thickness from the details. The thickness will be determined by the pavement design report.*
   Response: Pavement thickness has been removed from the details.

4. *On sheet C1.2, please include the centerline stationing that coordinates with the proposed street cross sections.*
   Response: Centerline stationing has been added to the street cross sections.

5. *On sheet C1.2, please relocate the proposed trench drain to the back of sidewalk.*
   Response: Proposed trench drain has been relocated to the back of the sidewalk.

6. *On sheets C4.0 – C4.9, please remove these sheets from this construction package since the grading plans are included in a separate GESC package.*
   Response: Sheets C4.0 – C4.9 have been removed from the CD package.

7. *The detention pond calculations for the north pond shows a "depth to invert of outlet pipe" difference of 1.5-ft. (Outlet pipe w/ flow restriction plate). The plans show an elevation difference of 2-ft. Please revise.*
   Response: Pond spreadsheet has been revised to properly show the top of the micropool to be 5931.50. Pond outfall has been lowered to lowest possible location that allows the pond outfall to drain 2.10' below the trickle channel.

8. *On sheet C4.10, please clarify the 20-ft. driveway along the north side of the detention pond.*
   Response: Maintenance access road has been labeled.

9. *On sheet C4.10, please provide cross sections for the forebay and include the structural design. Also, please include the structural information for the connections between the baffle blocks and the forebay.*
   Response: Structural design for pond infrastructure to follow after approval of CDs and Drainage Report.

10. *On sheet C4.10, please provide and dimension control joints for the forebay.*
    Response: Structural design for pond infrastructure to follow after approval of CDs and Drainage Report.

11. *On sheet C4.11, please include the structural design for the outlet structure in Section D-D.*
Response: Structural design for pond infrastructure to follow after approval of CDs and Drainage Report.

12. *On sheet C4.11, please lower the front wall of the outlet structure to within 3 to 4-inches of the bottom of the micropool and the orifice plate needs to extend to the bottom of the micropool in Section D-D.*
Response: Pond outfall has been lowered to lowest possible location that allows the pond outfall to drain 2.10' below the trickle channel. Pond outfall and outflow pipe to be revised further with downstream channel redesign.

13. *On sheet C4.11, please include the dimensions for the trash rack and orifice plate.*
Response: Refer to Water Quality Orifice Plate, Section H-H, and Section I-I detail for dimensions. Section I-I details has been updated.

14. *Please review the following information from the detention pond calculations for the south pond:*
    - *Depth at top of Zone using Orifice Plate – shows 6.42-ft which doesn't appear to be correct*
    - *Clarify the number of orifices (we try and minimize the number to 3)*
    - *Overflow Weir Front Edge Height – shows 6.42-ft. which doesn't appear to be correct*
    - *Depth to Invert of Outlet Pipe – shows 0.5-ft. which doesn't appear to be correct*
    - *Spillway invert Stage – shows 7.9-ft. which doesn't appear to be correct*

    Response:
    - Depth at top of Zone using Orifice Plate has been updated to reflect UD-Detention. Overflow weir is located at stage 4.17, or 6.67 above front end of micropool. At the orifice plate and trash rack, the depth is 6.93'.
    - Number Orifices has been reduced to three
    - Overflow weir front edge height has been updated to reflect UD-Detention
    - Depth to invert of orifice plate is 2.10'. This has been updated in UD-Detention spreadsheet.
    - UD-Detention has been updated with the correct Top of Micropool elevation of 5931.50. The spillway invert is at stage 5.00 at elevation of 5936.50. The top of the berm is situated at 5939.10 and with a flow depth of 1.05', provides over 1' of freeboard.

15. *On sheet C4.12, please provide a cross section though Pinery Center Blvd. showing the road in relationship to the retaining wall.*
Response: Cross section is available on page C1.2 that displays the relationship of the roadway and the retaining wall.

16. *On sheet C4.12, please provide cross sections for the forebay and include the structural design. Also, please include the structural information for the connections between the baffle blocks and the forebay.*
Response: Structural design for pond infrastructure to follow after approval of CDs and Drainage Report.

17. *On sheet C4.12, please provide and dimension control joints for the forebay.*
Response: Structural design for pond infrastructure to follow after approval of CDs and Drainage Report.

18. *On sheet C4.13, please include the structural design for the outlet structure in Section D-D.*
Response: Structural design for pond infrastructure to follow after approval of CDs and Drainage Report.

19. *On sheet C4.13, please lower the front wall of the outlet structure to within 3 to 4-inches of the bottom of the micropool and the orifice plate needs to extend to the bottom of the micropool in Section D-D.*
Response: Due to grade constraints, the outlet pipe cannot be lowered below its current elevation. The outlet pipe is current running a 0.57% slope into the proposed drainage channel which cannot be lowered any further. Pond outfall and outflow pipe to be revised further with downstream channel redesign.

20. *On sheet C4.13, please include the dimensions for the trash rack and orifice plate.*
Response: Trash rack and orifice plate dimensions have been updated and are show in the Water Quality Orifice plate detail as well as Section views H-H and I-I.

21. *On sheets C4.15 – C4.18, please verify the proposed handrail/guardrail meets AASHTO Roadside Design Guide for clear zone and crash criteria.*
Response: Yes. Guardrail will be designed by structural engineer to meet the same standards as a CDOT Type 3 W-Beam Guardrail.

22. *On sheets C4.15 – C4.18, a License Agreement will be required for the landscaping and retaining walls within the public right-of-way. I will provide you with our standard License Agreement document.*
Response: Acknowledged. License agreement will be included with resubmittal.

23. *On sheet C4.19, please remove the Douglas County Acceptance Block from this sheet.*
Response: Douglas County Acceptance block has been removed from sheet.

24. *Engineering is not familiar with the hydraulic model that was used for this project and will request that the project engineer provide a comparison between this model and the UD-Sewer modeling supported by Urban Drainage & Flood Control District.*
Response: The hydraulic model Hydraflow is a part of the AutoCAD drainage package and is comparable to StormCAD. The UD-Sewer program was run for the storm systems on this development and is included with this submittal. See the revised drainage report narrative for discussion on the UD-Sewer versus Hydraflow comparison.

25. *On sheet C6.1, please include the flowline transition profiles per Figure 4-6 of our road design manual (typical comment for all sump conditions).*
Response: Flowline transition profiles have been added to the plans for all sump conditions.

26. *On sheet C6.2, please clarify why manholes A7 & A8 are labeled twice in the profile.*
Response: Duplicate labels have been removed from profile view.

27. *On sheet C6.2, engineering has concerns regarding the proposed cover over the box culvert in regard to the future pavement section. Please look at lowering this box to account for the future pavement section (should be consistent with the storm sewer depths 3.5 to 4-ft.).*
Response: The drainage channel has been revised in order to provide cover over the pipes

28. *On sheet C6.3, the proposed Pinery Center Blvd. roadway improvements need to extend to the northerly property line.*
Response: The developer is requesting that the completion of the road to the north property line at the time when the road is extended from the north will be the developer's obligation in the SIA.

29. *On sheets C6.3 & C6.4, the depth of the proposed storm sewer is a concern (depth needs to be a minimum of 3.5 – 4-ft. without a preliminary pavement design).*
Response: Storm sewer has been lowered wherever possible to provide the most cover over the pipes.

30. *On sheet C6.5, our drainage manual requires a 6-ft. manhole for a 48-in. pipe. Please revise.*
Response: Storm manhole has been revised appropriately.

31. *On sheet C6.7, please clarify that the existing 36-in. pipe will be removed near manhole F4-A. Also, please include the invert information at both manholes.*
Response: Plan has been refined to reflect 36-in pipe tie-in. Demolition plans have been updated as well. Invert information has been added to both manholes.

32. *On sheets C7.1 – C7.14, Douglas County is meeting with Mile High Flood District on Friday to discuss the proposed channel improvements. We will provide comments on the channel re-alignment within the next couple of weeks.*
Response: Acknowledged.

33. *On sheets C7.15 & C7.16, the proposed open channel swales need to be designed per Chapter 8 (Volume 1) of the Mile-High Flood Control Districts criteria manual. Please include their figures in the drainage report that applies to each channel section.*
Response: Channel swales A, B, and D have been redesigned based on MHFCD Volume 1, Chapter 8, Section 6. Slope of swale C has been adjusted to 5:1 side slope to follow MHFCD design guide lines but due to the channel slope has been designed using Hydraflow.

34. *On sheets C11.1 & C11.2, our traffic group will be reviewing the signage & striping plans and once I get their comments, I will forward them to you.*
Response: Acknowledged.

35. *Our traffic group has reviewed the traffic analysis and overall, there were no significant changes in the findings of the original traffic study. The purpose of the proposed updated traffic analysis was to incorporate two changes:*
    - *Removal of a roadway connection to Hwy 83 (known as Access A, a 3/4 movement access).*
    - *Changes to Land Use projection and trip generation at the north end of the project. 50,000 square feet of office use was added to the trip generation to replace the previously planned charter school. This results in a decrease of AM peak hour trips and a minor change to the PM peak hour trips.*

    Required Improvements to accommodate the project are:
    - *Access Permit for the project Access to US 83 – Right-in/Right-out – the currently issued State Hwy Access Permit for the RI/RO access to SH 83 north of North Pinery Parkway may need to be re-issued due to the increase in trips proposed to use this access (because of the elimination of Access A which causes volumes using the access to exceed the original (original: 345 vph, new: 515 vph) – Access Permit for the Access at North Pinery Parkway & State Highway 83*
    - *2030 – US83/North Pinery Parkway – 2nd northbound left-turn lane & Modify the east leg of the median to include a new exclusive westbound left turn lane.*
    - *North Pinery Parkway/Access C – Traffic signal – check warrants at build-out of project*
    - *2040 – North Pinery Parkway/Pinery Center Blvd. (J Morgan Blvd) – traffic signal*
    - *Auxiliary Lane Evaluation – Access B & Parker Road (with initial development) – Southbound right-turn deceleration lane (378-ft. + 222-ft. taper, 600-ft. total length) – Southbound right-turn acceleration lane (tie into the exiting southbound right-turn deceleration lane approaching North Pinery Parkway, approximately 370-ft. south of Access B)*

- *Parker Road and Pinery Parkway (short-term) – Second northbound left-turn lane (build parallel to the existing 600-ft. total lane length)*
- *Parker Road and Pinery Parkway (long-term) – New eastbound left-turn lane (110-ft. lane + 60-ft. taper)*
  Response: Refer to traffic comments section for responses.

Landscaping Comments

1. *On sheet L-01, please add the Douglas County Acceptance Block to this sheet.*
   Response: Douglas County Acceptance Block has been added to the sheet.

2. *On sheets L-05, please clarify the purpose of the driveway onto Pinery Center Blvd.*
   Response: Label has been added to plans identifying lift station access drive.

Douglas County – Development Review Engineer (Additional)

Drainage Report & Construction Plan Comments

1. *Please clarify/correlate the narrative on Page 2 of the drainage report regarding offsite basins with the information present in Table 3-4. Discussion of Subbasin 206 is not included in Section 3.7 or Table 3-4. Identify which culvert crossing is associated with the V3 subbasins. What is the relation of the OSP North Pinery Subbasin areas and the V3 Hydrologic Exhibit areas in Table 3-4?*
   Response: Please see the revised narrative for additional explanation. In summary, Subbasin 206 revised boundaries are not likely to result in an appreciable change to the OSP flowrates going to the 96-in diameter Parker Road culvert and therefore, the OSP rates with respect to Subbasin 206 are maintained and used in the channel analysis (DP 1062). The OSP North Pinery Subbasin Areas are updated with respect to drainage boundaries and drainage area using updated Douglas County GIS topographic contours. The flows from the revised drainage areas are scaled from the OSP flow rates (Table 3-4) for use in evaluation of the three tributary culverts and flows entering the Parker Road median structure. Please see the narrative for additional detail.

2. *The drainage swale designs, and selection of treatment should be based on the Urban Storm Drainage Criteria Manual, Volume 1, Chapter 8, Open Channel, Section 6.0 – Swales, rather than the Hydraflow channel analysis or pipe simulations.*
   Response: Channel swales A, B, and D have been redesigned based on MHFCD Volume 1, Chapter 8, Section 6. Slope of swale C has been adjusted to 5:1 side slope to follow MHFCD design guide lines but due to the channel slope has been designed using Hydraflow.

3. *Please clarify how this project will address the 59-cfs overflow (over State Highway 83) at the existing North Pinery Creek crossing.*
   Response: The 59 cfs overflow will be captured in curb and gutter along the west side of Parker Road and a series of Type R inlets. The flows will be conveyed via storm sewers to the relocated North Pinery Creek channel pipes.

4. *Please remove any references to using internal energy dissipation (grouted boulders) within the proposed reinforced concrete box culverts.*
   Response: Comments are removed and narrative has been revised.

5. *Regarding the use of Hydraflow Storm Sewer Extension (Hydraflow) for hydraulic grade line calculations, consult Modeling Hydraulic and Energy Gradients in Storm Sewers: A Comparison of Computational Methods, prepared for UDFCD and available on their website. It appears that Hydraflow uses the Standard Method for determination of junction loss coefficients, the method that was recommended when using StormCAD. Loss coefficients provided in Table 2 must be manually entered in Hydraflow for the standard situations with a bend in the main line or laterals on a straight main line. For other junction configurations, Equation 13 must be solved for eth Standard Method head loss coefficient (K) to input into Hydraflow.*
   Response: Please see response to above comment 24 (Construction Plan Comments).

6. *Please include all design calculations, for the grouted sloping boulder drop structures, as required, and outlined in the Urban Storm Drainage Criteria Manual, Volume 2, Chapter 9 – Hydraulic Structures, Section 2.0 – Grade Control Structures.*
   Response: The Grouted Sloping Boulder Drop structures have been removed.

7. *On sheets C4.2, please provide us with a copy of the 30-ft. access easement from Parker Water & Sanitation District and verify that this property has the right to use this easement out to Parker Road.*
   Response: The developer had received verbal approval from Parker Water and Sanitation District contingent upon approval of a prospective buyer for the Parker Water and Sanitation District property. The prospective buyer is no longer under contract to purchase the land; therefore, the developer has reinitiated discussion with Parker Water and Sanitation District to get the easement granted.

8. *On sheets C6.2 & C6.6, engineering has concerns regarding the design of the proposed box culvert under Pinery Center Blvd. Our recommendation is to extend the box on both sides of the road to avoid the vertical drop-off and construct the standard headwall/wingwalls. Also, it is unclear on how the reinforced box culvert will integrate or interface with the proposed retaining wall design. Please provide additional details or clarification.*
   Response: The box culvert has been replaced by dual 72-inch pipes and a headwall.

9. *On sheets C7.1 – C7.5, please show the water surface in the profiles.*
   Response: Water surface profiles for the 5-year and 100-year storm events are provided.

10. *On sheets C7.1 – C7.5, please specify the surface treatment for the proposed maintenance access road.*
    Response: Please reference maintenance access road detail on sheet C4.1

11. *On sheets C7.1 & C7.2, the channel design for North Pinery Creek downstream of Pinery Center Blvd. to Cherry Creek does not appear to incorporate High Function Low Maintenance stream design principles. Typically, there is some determination of the extent of the tributary (North Pinery Creek) floodplain, independent of the Cherry Creek floodplain.*
Response: Please see the revised narrative and supplemental documentation for additional information. In summary, there is no channel for the intermittent North Pinery Creek flows within the Quaternary Terrace floodplain of Cherry Creek. A proposed channel for this floodplain terrace incorporates High Function Low Maintenance principles through inclusion of riffle-pool meander complexes for bankfull flows.

12. *On sheets C7.1 & C7.2, please extend the maintenance access along this westerly reach to Cherry Creek.*
Response: Maintenance Road has been extended along the new downstream side of the drainage channel.

13. *On sheets C7.3 & C7.5, the County won't accept the concept of a modified grouted sloping boulder (GSB) drop structure within the RCBC's.*
Response: Acknowledge and redesigned. Please see the new design.

14. *On sheets C7.7 – C7.13, detailed profiles must be developed for all GSB drop structures to show cutoff walls, still basins, grout lines, interface with upstream and downstream channels, slopes, elevations, flow spreads, crest lengths, etc.*
Response: Plans have been revised to remove drop structures and open channel.

15. *On sheet C7.13, please show the pipe connection to the RCBC. Also, please provide details for this junction.*
Response: RCBC has been detailed out. Structural design to follow upon approval of plans.

16. *On sheet C7.14, additional details need to be provided for the channel cross-sections, including elevations, treatment types and limits, toe depths, bedding, riprap sizes, etc.*
Response: Plans have been revised to remove drop structures and open channel.

17. *On sheets C7.15 & C7.16, additional details must be provided for treatment of the swales.*
Response: Additional details have been added to the swales.

18. *Grouted boulder placement details and associated material and grout placement notes, subgrade preparation specifications and weep drain details must be provided. Required mandatory County inspection intervals or stages must be clearly defined by the contractor.*
Response: The Grouted Sloping Boulder Drop structures have been removed.

19. *On sheets C12.5 & C12.6, please use the Douglas County headwall and wingwall details.*
Response: Douglas County headwall and wingwall details have been added to the plans.

20. *The signage and striping comments should be available in the next few days and once I receive them, I will forward them to you.*
Response: Acknowledged.

Douglas County – Planning

General Comments

1. *The submitted will-serve letter from the Pinery Water and Wastewater District is from December of 2018. Please provide an updated will serve letter and water supply report from the District. Response noted, an updated will serve letter will be required prior to scheduling for public hearings.*
Response: Acknowledged. An updated Will Serve letter has been requested and will be provided when received.

2. *A Class II Cultural Resource Survey, as recommended by Douglas County Historic Preservation, needs to be included with the next resubmittal.*
Response: Acknowledged. Cultural Resource survey will be included with next resubmittal.

Minor Development Exhibit

1. *Thank you for providing the PD Vicinity Map. Please reduce the map and include it on the cover page of the minor development plat exhibit.*
Response: The PD Vicinity Map has been added to the Cover Sheet.

2. *Label adjacent properties as "not a part of this replat."*
Response: The labels have been added.

3. *See redlines for additional corrections.*
Response: Acknowledged.

4. *Please refer to comments from Xcel Energy as it may impact landscaping along Pinery Center Blvd due to the existence of a 50-foot easement.*
Response: Acknowledged. We have already had Xcel conduct a preliminary review of the Plans and will be applying for a License Agreement for work within their easement.

5. *I apologize for any confusion on the right-of-way dedication for Pinery Center Blvd, but in the Land Use Table, Tracts D and F should be labeled as ROW, and under the Use column listed as Pinery Center Blvd ROW, see redlines.*
Response: The table has been updated as requested.

6. *Provide distances for all property and tract lines. See redlines*
   Response: The labels have been added

7. *As stated previously, the following conditions of approval will be included with the PC and BCC staff reports:*
   a. *Prior to approval of the any site improvement plan with Lots 1, 2, or 4, buffers with Tract E shall be designed and secured through the Site Improvement Plan Improvements Agreement (SIPIA) or through an accompanying Subdivision Improvement Agreement (SIA).*
      Response: Acknowledged.

8. *The response letter notes that the North Pinery Watercourse is marked on the plat, but it is not, or I was unable to locate it.*
   Response: North Pinery Creek has been labeled on the Plat.

Landscape Plans

1. *Provide several cross-sections showing the landscape buffer along Parker Road including the slope to the west.*
   Response: Cross sections have been provided.

2. *It is noted on the plans that certain areas will be landscaped at the time of site plan submittal, and there is a note stating the steep slopes may not be landscaped, but there are long stretches of the landscape buffer that are left blank, please explain.*
   Response: All but a small portion of Filing No. 2 Parker Road frontage is Tract E (Open Space). The intent is to keep this Tract in a condition as similar to its natural state as possible. The majority of the landscape buffer along Parker Road is therefore handled only through native seed reestablishment following any grading activity. Some additional plantings are provided occasionally to enhance this edge and provide some additional native plant material. The portion of Filing No. 2 fronting Parker Road that will have future development (Lot 3) will provide the associated landscape buffer at the time of its site plan.

3. *Is the plan to leave most of Tract E as native seed and not landscaped or will more landscaping be provided at time of future site plans?*
   Response: The intent is to maintain Tract E as natural open space, utilizing native seed and existing vegetation for its coverage. There is no additional landscaping planned for the future aside from reseeding areas following grading activity and construction of the maintenance path and trail along the drainage channel.

4. *Please label on the landscape plans the twenty percent of the Highway 83 landscape buffer that is required to be 40-feet wide.*
   Response: The entirety of Tract E is remaining as open space with native seed coverage and therefore exceeds the twenty percent 40-feet wide requirement.

Lumen Technologies

General Comments:

1. *Our engineer has reviewed this plat and their comments are: "I have no objections to this plat"*
   Response: Acknowledged.

State of Colorado – Traffic & Safety

Drainage Comments:

1. *The site primarily drains away from CDOT ROW and flows are conveyed, ultimately, to Cherry Creek via the proposed realigned North Pinery Creek. My primary concern is in regards to the calculations and documentation included in Appendix 7 which provides information on the offsite flows that impact the site from the East side of Parker Road. The proposed design shows a storm sewer that will intersect the three existing culverts that convey flows under Parker Road, the system is shown on Profiles STORM-8 and STORM-9 on page C6.7. There is documentation included in the Appendix that shows capacity calculations of the pipes in the system, however, as this system will have immediate impacts to the infrastructure within Parker Road I would like to see the HGL's for the Minor and Major storms included on these profiles to verify that there is no surcharging within CDOT ROW.*
   Response: HGL Calculations have been added to the storm profiles. The calculations show no surcharging within the CDOT ROW.

Traffic Comments:

1. *After review of the TIS, the proposed mitigation at the intersections on Parker Rd at Stroh Rd and Pinery West is maximized to the most reasonable extent possible and therefore is an acceptable strategy. The distance between Parker Rd and Access "C" needs to be, at a minimum, 550 ft from PC (Parker Rd) to PC (Access "C") This is not stated in the TIS. If this distance is not met, then the signal cannot be installed and full movement designation will likely require re-designation to a more restricted condition. It is also unclear why Access "C" is signalized when the primary access appears to be Pinery Center Blvd. The Wellspring Dr RIRO will require both accel and decel auxiliary lanes meeting the requirements stated in the Access Code*
   Response: (Per our recent call with CDOT staff, we understand that this comment was meant to refer to North Pinery Parkway not Stroh Road.) A variance request to Section 13.2.4 of the Douglas County Roadway Design and Construction Standards was previously prepared and approved (see attached letter dated April 21, 2021) for this existing full-movement access and future signal. Note that this access, with a future signal proposed, was previously approved and the intersection has been constructed based on the 2008 Traffic Impact Stud, which the current TIS is consistent with. The spacing from Parker Road is approximately 450' from PC to PC and 640' centerline to centerline. This exceeds or is similar to spacing from existing signals adjacent to similar locations along the SH 83 corridor (examples are Cottonwood Drive/Brompton Way, E. Broncos Parkway, E. Orchard Parkway, S. Chambers Road, E. Quincy Ave, S. Peoria St.

See attached variance memo for additional information.

2. *Previous comments still apply, Access C shall not be signalized if the 550 ft separation from Parker Rd is not met. There are no plans showing the necessary modifications of Stroh Rd and Parker Rd to review. It is also unclear how the Access C intersection geometric design influences the Parker Rd/Stroh Rd intersection design. The required addition of a NB left lane on Parker Rd at Stroh Rd needs to occur and be included in the roadway plans required for permit approval. Traffic signal modification may also be necessary*
Response: See response #1 re: Access C spacing. Per our recent call with CDOT staff, we understand that this comment was meant to refer to Pinery Parkway not Stroh Road. Per page 39 of the TIS, improvements to the Parker Road & Pinery Parkway intersections are planned to occur with later development stages. Improvements to Parker Road and North Pinery Parkway intersection were previously approved with Filing 1 of this project. The timing of those improvements is outlined with the Pinery Village Filing 1 approvals.

Right of Way Comments:

1. *No ROW comments except to reiterate the need for sufficient ROW to be dedicated to the County.*
Response: Acknowledged. We are dedicating ROW with the Plat with Tract F to provide the required ½ ROW of 87.5'

Resident Engineer Comments:

1. *If an intersection or sidewalks will be modified/constructed on Parker Rd Roadway plans will need to be submitted for review.*
Response: Acknowledged. A set of Construction Plans showing the modification to the previously approved improvements with Pinery Village Filing No. 1 are included with this submittal.

Permits Comments:

1. *There was no referral responses to CDOT previous remarks. We had mentioned in an earlier meeting the need to adhere to the Access Control Plan (ACP) for SH 83. We assume that the Town of Parker has reviewed this proposed development plan and has made comments in regards to the ACP and local plans as there are off-site connections to be made to the north. If there are any deviations or changes to the ACP, the Town of Parker must approve of those revisions as outlined in the IGA.*
Response: Responses to referral comments were prepared following a meeting with CDOT staff to review these comments in April 2021, but appear not to have been received by CDOT. No changes to the ACP to increase or relocate any access is proposed, with only the removal of the previously proposed "Access A" (northernmost 3/4-access along SH 83). Per our recent meeting with CDOT staff, we understand that this ¾ access will thus be removed from the future ACP update.

2. *It will be important for the alternative N-S roadways, their functional design/cross sections, and timing to be in alignment with those planned by the Town of Parker. These provide essential access connections without the need to use the highway for short trips. Town of Parker has recently updated their Transportation vision/plan for SH 83.*
   Response: As discussed at our meeting with CDOT staff in December 2021, the proposed Pinery Center Blvd. (collector) roadway connection between Stroh Road and Pinery Parkway will provide alternative north-south access parallel to SH 83 and accommodates future plans for the Town of Parker to the north.

3. *Intersection improvements (including new auxiliary lanes) and those with > 20% traffic will require new Access permits. Any work in CDOT RoW0 including landscaping, signal upgrades and utilities is by permit.*
   Response: Acknowledged. This will apply to renewal of the "Access B" permit (expired 8/29/21) and Pinery Parkway at SH 83.

4. *The 2004 Corridor Optimization Plan calls for a 175-ft RoW profile for SH 83 in this area, half of which would come from the centerline (87.5-ft). The plat does not show this to exist along the length of the property. Additional RoW should be dedicated to the county, to in-turn deed to CDOT at the time it is needed. Please call out the RoW for SH 83 along the length of this property.*
   Response: We are dedicating ROW with the Plat to provide the required ½ ROW of 87.5'

5. *We have no issues with the removal of what was Collector Road "C". However, on the north end of this property, cross- property connections will be necessary. Extending the N-S collector to Stroh is acceptable, but opportunity is lost in not providing a connection into Lewis Christensen Rd Neither the maps provided or the TIS show enough context to the SH 83 corridor and existing local roadway rights-of-way on the north end of this project (and not consistent with Douglas County Assessor property lines/info)*
   Response: As discussed in the December 2021 meeting w/ CDOT, Pinery Center Blvd is extended to the north boundary of the property with the expectation development to the north will tie into this connection, either via extension of J Morgan Blvd or Lewis Christensen Rd.

6. *With the removal of the ¾ turn movement previously permitted, a double NB to WB left turn should go into Pinery Parkway intersection – by 2030. That un-built ¾ Access permit shall be officially 'retired'.*
   Response: This is consistent with the recommendations of Pinery Village Filing No. 1 on page 39 of the TIS which states that the 2nd NB left-turn lane should be constructed by project build out, assumed Year 2030. The timing of the need for this improvement is both dependent on the built out of the project and the extension of North Pinery Parkway to the west, which would attract background (non-project) traffic to this movement. The plans for the second left-bound turn lane were included in the previously approved Pinery Village Filing No. 1 Construction

Plans.

7. *I do not believe less traffic will occur on the SB to EB Left urn movement between 2030-40. The study's figure 10 & 11 is peculiar showing a drop from of peak hour left turns from 405 to 330.*
   Response: When North Pinery Parkway is extended to the west to Crowfoot Valley Road, as well as when the project is developed and attracts retail/commercial trips that are currently to/from the north towards the Town of Parker, some traffic from the Pinery (east of the project) is anticipated to redistribute from Parker Road to this connection, resulting in decreases to some movements (including the SB left-turn).

8. *County needs to ensure sufficient RoW is dedicated along SH 83 per the Corridor Optimization Plan to ensure auxiliary lanes, and room for multi-use pathways and utilities can occupy the RoW.*
   Response: Acknowledged.

9. *A State Highway access permit, 119094 was issued for the proposed Right-in, Right-out access and is still valid. It is currently extended to 8/29/2021. This permit may need to be either revised or repermitted to reflect the change in traffic due to the redistribution with the elimination of the 3/4 access to this development. Douglas county is the issuing authority for State Highway Access permits within their jurisdiction. Contact at the County for access permits is Chris Martin.*
   Response: Acknowledged. The Access B permit application will include volumes from the July 31, 2020 TIS, with was updated to reflect the removal of the ¾-access on SH 83 ("Access A").

10. *The proposed improvements at Pinery Parkway and Parker Road will require new State Highway Access Permits. Improvements include a second NB left turn lane. Since Pinery Pkwy is a County Roadway, Douglas County must be the Permittee for the permit. If improvements are proposed on both the east and west side, then separate permit applications will be needed for each side.*
    Response: Acknowledged.

11. *We will want to review the drainage report for this development to insure there will be no negative impact to the State Highway.*
    Response: Acknowledged. The updated Drainage Report is included in this submittal.

12. *All signing for this development that is visible to or advertises to State Highway 83 must be on-premise and must comply with any applicable rules governing outdoor advertising in Colorado per State of Colorado Rules 2 CCR 601-3*
    Response: Acknowledged.

Colorado Department of Transportation CDOT – Region # 1

1. *Following is a summary of comments received from CDOT. Full details please reference the letter dated December 2, 2021.*
   Response: Acknowledged.

2. *CDOT had comments related to the offsite flows and storm sewer design in the drainage report, traffic comments related to proposed traffic mitigation on Parker Road, proposed points of access on Parker Road, and accel and decel lanes at Wellspring Drive.*
   Response: Acknowledged

3. *The applicant will need to adhere to the Access Control Plan for State Highway 83. CDOT does not object to removal of what was Collector Road "C". Extending the North-South collector to Stroh Rd is acceptable, but opportunity is lost in not providing a connection to Lewis Christensen Rd.*
   Response: Collector Road Access C is not feasible due to significant grade difference between Parker Road and Pinery Center Blvd.

4. *Applicant needs to review Figures 10 and 11 in the traffic study that project less traffic will occur on the SB to EB left turn movement between 2030-40.*
   Response: When Pinery Parkway is extended to the west to Crowfoot Valley Road, as well as when the project is developed and attracts retail/commercial trips that are currently to/from the north towards the Town of Parker, some traffic from the Pinery (east of the project) is anticipated to redistribute from Parker Road to this connection, resulting in decreases to some movements (including the SB left-turn).

5. *Douglas County needs to ensure sufficient ROW is dedicated along State Highway 83 per the Corridor Optimization Plan to ensure auxiliary lanes, and room for multi-use pathways and utilities can occupy the ROW.*
   Response: Acknowledged. We are dedicating ROW with the Plat to provide the required ½ ROW of 87.5'

Colorado Parks and Wildlife (Northeast DC)

General Comments:

1. *Upon review of the proposed referral request, Colorado Parks and Wildlife (CPW) has no objections to the application moving forward as planned for approval. Please refer to the previous comment letter from CPW dated February 11, 2020 to Mr. Dan Avery for additional wildlife concerns and development recommendations.*
   Response: Acknowledged.

South Metro Fire Rescue

General Comments:

1. *South Metro Fire Rescue (SMFR) has reviewed the provided documents and has no objections to the proposed minor development. Applicants and Contractors are encouraged to contact SMFR regarding the applicable permit requirements for the proposed project.*
   Response: Acknowledged.

Tri-County Health Department

Water and Sewer Service Comments

1. *A will-serve letter has been provided by Pinery Water and Wastewater District. Based on this letter, TCHD is providing a favorable recommendation regarding the proposed method of sewage disposal.*
   Response: Acknowledged.
2. *Because chronic diseases related to physical inactivity and obesity now rank among the country's greatest public health risks, TCHD encourages community designs that make it easy for people to include regular physical activity, such as walking and bicycling, in their daily routines. Because research shows that the way we design our communities can encourage regular physical activity, TCHD strongly supports community plans that incorporate pedestrian and bicycle amenities that support the use of a broader pedestrian and bicycle network. Increasing multi-modal transportation has additional co-benefits including improved air quality, which can reduce contributions to climate change and exposure to pollutants associated with a number of health problems including asthma, lung cancer, and heart disease.*

   In order to promote walking and bicycling through this development, TCHD encourages the applicant to consider the inclusion of the following as they design the community.

   - *A system of sidewalks, bike paths and open space trail networks that are well-designed and well-lit, safe, and attractive so as to promote bicycle and pedestrian use.*
   - *Bicycle and pedestrian networks that provide direct connections between destinations in and adjacent to the community.*
   - *Where public transportation systems exist, direct pedestrian access should be provided to increase transit use and reduce unnecessary vehicle trips, and related vehicle emissions. The pedestrian/bicycle networks should be integrated with the existing and future transit plans for the area.*
   - *Streets that are designed to be pedestrian/bike friendly and to reduce vehicle and pedestrian/bicycle fatalities.*
   - *Bicycle facilities and racks are provided in convenient locations.*

     Response: Acknowledged. A bike and pedestrian trail system is being proposed

throughout the development.

Town of Castle Rock

1. *Thank you for the opportunity to review and respond to the Pinery Village Filing 2, Minor Development. The application was reviewed by various Town Departments with no concerns from the Town reviewers. Please keep us informed of any changes to the proposal. Thank you.*
   Response: Acknowledged.

Town of Parker – Planning

General Comments:

1. *The Town has platted the lot just north of what is proposed as Tract A, multi-family. Please be sensitive with uses, landscape buffering, and design standards for proposed lots 1 and 2 (PA 42 and PA 43).*
   Response: Acknowledged.

2. *Please incorporate pedestrian-friendly infrastructure between RTD and the Town along Pinery Center Blvd.*
   Response: A bike and pedestrian trail system is being proposed throughout the development.

3. *Please reference the attached documents which redline these comments.*
   Response: Acknowledged.

Previous Comments

1. *The Pinery Village Minor Development is located within the Town's 2035 Master Plan Planning Area and Three-Mile Plan map, and qualifies for annexation into the Town of Parker. The Town supports and welcomes discussions for annexation and rezoning of this property into the Town of Parker.*
   Response: Acknowledged.

2. *The Concept Site Plan from the project Traffic Impact Study, dated December 13, 2018, shows a site plan with commercial/retail development located adjacent to Parker Road. The Town encourages primary building frontages to front or side with Parker Road, to create a consistent setback, street wall, and streetscape. Buildings that side with Parker Road are encourage to have enhanced architectural design. To minimize the view of parking lots from Parker Road, parking lots are encouraged to be located away from view of Parker Road, on the sides or rear of buildings.*
   Response: Acknowledged.

3. *Each proposed retail site is encouraged to provide pedestrian/bicycle connectivity from the primary façade of each building, as well as along Parker Road. Enhanced landscaping along Parker Road is also encouraged.*
   Response: Acknowledged.

Douglas County – History Repository

General Comments

1. *Upon researching the cultural resources on the property and the surrounding area the Douglas County Curator recommends a Class II cultural resource survey of the project area.*
   Response: Acknowledged. Cultural Resource survey will be submitted when finalized.

2. *There is potential for buried archaeological resources related to prehistoric activities in the project area and potential for the discovery of subsurface cultural deposits during ground moving activities. Should buried artifacts and features be discovered, we recommend completion of the appropriate Colorado Office of Archaeology and Historic Preservation (OAHP) Data Management and Historic and/or Prehistoric Component forms, following OAHP guidelines, with accompanying sketch maps and photographs. Completed forms are submitted to OAHP to ensure that Douglas County's historic or prehistoric data is included in the Colorado OAHP state-wide database of cultural resources.*
   Response: Acknowledged. Cultural Resource survey will be submitted when finalized.

Referral Agency Response Report

Addressing Analyst Comments

1. *No Comment*
   Response: Acknowledged.

Assessor Comments

1. *Lot 2 & Tract E Pinery Village Filing 1 are being replatted by this subdivision. They should be listed in the legal description and plat sub-title.*
   Response: Lot 2 & Tract E Pinery Village Filing 1 have been added to the Legal Description and shown as being vacated via the Filing No. 2 Plat.

2. *Pinery Commercial Metro District 1 & 2 are the current owners of existing Tract E Pinery Village Filing 1 per plat dedication. They need to sign the plat as an owner.*
   Response: Tract E of Pinery Village Filing No. 1 will be deeded back to TF Pinery West LP prior to the recording of this Plat so they will be the only Owner.

   a. *As platted, Lot 4 will be setup with mixed ownership and taxable status, which is very difficult for our office to track. Please clear title on Lot 4 via deed to eliminate the mixed ownership and taxable status.*
      Response: See response to Item #2 above. Pinery Commercial Metro District 1 & 2 will no longer have partial ownership of Lot 3 of Pinery Village Filing No. 2.

3. *There is a discrepancy regarding Tract C. The acceptance certificate, Land Use Table and Plat note 8 say dedication to the Pinery Commercial Metro 2, whereas Additional Tract Note 3 says dedication to Douglas County.*
   Response: Tract C will be dedicated to Pinery Commercial Metro District No. 2 for Open Space and Drainage purposes. The table has been updated accordingly.

4. *The vicinity map does not match the area being platted.*
   Response: The Vicinity Map has been corrected.

5. *There is a missing dimension on the subdivision boundary on Sheet 2, the southeastern-most call 316.60 ft call is not dimensioned.*
   Response: The missing callout has been added.

AT&T Long Distance - ROW Comments

1. *This is in response to your eReferral for a utility map showing the buried AT&T Long Line Fiber Optics near Pinery Center Blvd Parker, Colorado. I attached an Earth map showing the project area in read and the buried AT&T Long Line Fiber Optics in yellow. As shown, there is a possibility of conflict along State HWY 83. Any other information you could provide about the projects would be appreciated in determining if a conflict will exist. Please pass on our contact information as well.*
   Response: Acknowledged. Our understanding is the AT&T Long Line Fiber Optics is located on the east side of Parker Road. This project is on the west side of Parker Road.

Black Hills Comments

1. *No Comment*
   Response: Acknowledged.

Building Services Comments

1. *No Comment*
   Response: Acknowledged.

CenturyLink Comments

1. *Our engineer has reviewed this plat and their comments are: "I have no objections to this plat". If you require signatures, you can contact the engineer CC'd on this email and if you have any further questions, please don't hesitate to reach out.*
   Response: Acknowledged.

Cherry Creek Basin Water Quality Authority

1. *The Authority's Control Regulation 72 requires construction and post-construction Best Management Practices (BMPs).*
   Response: Acknowledged. BMPs are shown on GESC plan and discussed in the GESC Report.

2. *No exceptions taken with the proposed post construction BMPs using full spectrum detention. However please note this development appears to also be within the stream preservation area. Development in the stream preservation area requires additional post construction BMPs. Please see the control regulation document Chapter VI for additional guidance. Please provide additional information or justification in future submittals on how this is being met.*
   Response: Acknowledged. BMPs are shown on GESC plan and discussed in the GESC Report.

3. *Provide construction BMP plan when available for our review and comment.*
   Response: Acknowledged. BMPs are shown on GESC plan and discussed in the GESC Report.

4. *The Authority reserves the right to review and comment on future referrals for this project.*
   Response: Acknowledged.

Colorado Division of Water Resources

1. *No Comment*
   Response: Acknowledged.

Colorado Geological Survey

1. *No geologic hazards or unusual geotechnical constraints are known or suspected to be present that would preclude the proposed non-residential use and density. CGS previously reviewed a geotechnical report relevant to the subject site: Preliminary Geotechnical Investigation, Pinery West Preliminary Plan #3 (CTL|Thompson Project No. DN49,579-115-R1, September 10, 2018). CTL makes appropriate preliminary recommendations for mitigating the site's variable subsurface conditions, which include low density/low strength and expansive soils, and shallow, expansive claystone bedrock.*
   Response: Acknowledged.

2. *Provided CTL's recommendations are adhered to, and additional investigation and analysis are conducted once building locations and loads are known, for use in design of subgrade preparation, foundations, floor systems, pavements, etc., Colorado Geological Survey has no objection to approval of SB2021-049. Jill Carlson, Colorado Geological Survey, 303-384-2643 or carlson@mines.edu*
   Response: Acknowledged.

Comcast

1. *No Response Received*
   Response: Acknowledged.

Core Electric Cooperative

1. *CORE will require additional utility easements as shown on the attached markup.*
   Response: A 15' Utility Easement has been added along Pinery Center Boulevard except for areas where a retaining wall is proposed. Perimeter lot easements will be deferred until the lots are subdivision for specific development.

Douglas County Parks and Trails

1. *No Response Received*
   Response: Acknowledged.

Douglas County School District RE 1

1. *No Response Received*
   Response: Acknowledged.

Engineering Services

1. *Engineering Services had comments related to plat notes, certificates, drainage easements, tracts for ROW, a requirement for a Subdivision Improvement Agreement, GESC comments, Construction Plan comments and Landscaping comments.*
   Response: Acknowledged.

High Prairie Farms HOA

1. *No Response Received*
   Response: Acknowledged.

Office of Emergency Management

1. *No Response Received*
   Response: Acknowledged.

Pinery Commercial Metro Districts #1 & 2

1. *No Response Received*
   Response: Acknowledged.

Pinery Water and Wastewater District

1. *Pinery Water District takes no exception to establish 4 commercial lots. The District is working with the developer to identify solutions for possible wastewater treatment and the associated collection system as gravity flow for the entirety of the project is not possible*.
   Response: Acknowledged.

RTD – Planning & Development Dept

1. *No Response Received*
   Response: Acknowledged.

Sheriff's Office

1. *No Comment*
   Response: Acknowledged.

Sheriff's Office E911

1. *No Response Received*
   Response: Acknowledged.

The Pinery HOA

1. *No Response Received*
   Response: Acknowledged.

Town of Parker Public Works

1. *No Response Received*
   Response: Acknowledged.

Urban Drainage & Flood Control – District Floodplain

1. *No Response Received*
   Response: Acknowledged.

Wildfire Mitigation

1. *No Comment*
   Response: Acknowledged.

Xcel Energy-Right of Way & Permits

1. *Public Service Company of Colorado's (PSCo) Right of Way and Permits Referral Desk has reviewed the documentation for Pinery Village F2 and requests that 10-foot wide dry utility easements are dedicated around the perimeter of each lot, and 15-feet abutting all major rights-of-way.*
   Response: A 15' Utility Easement has been added along Pinery Center Boulevard except for areas where a retaining wall is proposed. Perimeter lot easements will be deferred until the lots are subdivision for specific development.

2. *PSCo requests that the following language or plat note is added to the preliminary and final plats for the subdivision: Permanent structures, improvements, objects, buildings, wells, water meters and other objects that may interfere with the utility facilities or use thereof (Interfering Objects) shall not be permitted within said utility*

easements and the utility providers, as grantees, may remove any Interfering Objects at not cost to such grantees, including, without limitation, vegetation. PSCo and its successors reserve the right to require additional easements and to require the property owner to grant PSCo an easement on its standard form.
Response: Notes has been added to Plat, see general note no. 10

3. *PSCo has an existing high-pressure natural gas transmission pipeline including a regulator station and associated land rights as shown within this property and it has been determined that an engineering review is necessary. Any activity including grading, proposed landscaping, erosion control or similar activities involving our existing right-of-way will require PSCo approval. Encroachments across PSCo's easement must be reviewed for safety standards, operational and maintenance clearances, liability issues, and acknowledged with a PSCo License Agreement to be executed with the property owner. PSCo is requesting that, prior to any final approval of the plat, it is the responsibility of the property owner/developer/contractor to contact PSCo's Encroachment Team for development plan review and execution of a License Agreement (upload all files in PDF format) at : https://www.xcelenergy.com/encroachment_application (click Colorado if necesssary). An engineer will then be in contact to request specific plan sheets.*
Response: An encroachment request was made in September 2020. An updated request will be made once the utility design is complete.

4. *The property owner/developer/contractor must complete the application process for any new gas service or modification to existing facilities via xcelenergy.com/InstallAndConnect. It is then the responsibility of the developer to contact the Designer assigned to the project for approval of design details.*
Response: Acknowledged.

5. *If additional easements need to be acquired by separate PSCo document, a Right-of-Way Agent will need to be contacted. All easement labels referenced as "XCEL" must be changed to "PSCO". Although "branded" as Xcel Energy, the legal owner and operator of the utility facilities in Colorado is Public Service Company of Colorado. All utility facilities and related land rights, including fee property, easements, permits, etc., are owned by, operated by, and held in the name of PSCo, a Colorado Corporation.*
Response: Acknowledged.

6. *As a safety precaution, PSCo would like to remind the developer to call the Utility Notification Center by dialing 811 to have all utilities located prior to any construction.*
Response: Acknowledged.

Redland
WHERE GREAT PLACES BEGIN

If you have any questions regarding the above response to comments, please contact me at 720-283-6783 ext. 136 or at mcevaal@redland.com.

Sincerely,



Mark D. Cevaal, P.E.
Sr. Project Manager

Cc: Mr. Chuck Smith – Douglas County
Mr. Craig Campbell – Starwood Land Advisors

PINERY
WATER AND WASTEWATER DISTRICT
Quality Water for Life

January 5, 2026
Mr. Craig Campbell
Starwood Land

RE: Pinery Village Filing 2

Dear Mr. Campbell,

Pursuant to Section 1805a.01.3 of the Douglas County Zoning Resolution, the Pinery Water & Wastewater District (the "District") acknowledges its willingness and ability to serve the proposed subdivision, Pinery Village Filing 2. The land where the proposed subdivision is located was included within the District boundaries when the District was formed on July 12, 1965.

Water Demand

Based on the proposed development plan, this project will require an average day demand of 84,749 gpd for domestic service (95 AF/YR).

Water Supply

Please find enclosed a copy of our District's Present and Future Water Sources report that the District has provided the State Division of Water Resources as required by Section 30-28-136(1)(h)(ii), C.R.S.

Water Quality

The District is in compliance with the Colorado Department of Public Health and Environment testing and quality requirements.

Sincerely,
Pinery Water & Wastewater District

Heather Beasley
District Manager

Present and Future Water Sources
Denver Southeast Suburban Water & Sanitation District

Prepared by HRS Water Consultants, Inc. in consultation with Denver Southeast Suburban Water & Sanitation District
Previous Versions: May 2014 and February 2018
Updated by DSSWSD staff in September 2025

A. General

The Denver Southeast Suburban Water and Sanitation District, dba Pinery Water and Wastewater District (DSSWSD), has four types or sources of water for present and future water supply. These are its tributary shallow wells constructed in the Cherry Creek alluvium, its deep non-tributary Denver Basin Aquifer wells, its reusable water stored in Walker Reservoir, and wholesale water supply through either WISE or CCPWA. The shallow alluvial wells withdraw senior Harrison and Haley Ditch rights along with junior water rights, both of which are covered under existing plans for augmentation in Cases No. W-6862 and No. 11CW198. The annual appropriation for the deep Denver Basin aquifer wells is derived from: 1) Pre-Senate Bill 213 wells; 2) District decrees; and 3) Decrees from others that have been included in the District. In total, DSSWSD has firm water rights of 15,221 acre-feet per year (af/yr), with average and wet years being higher. In addition, the District owns a 20.489% share of the Cherry Creek Project Water Authority alluvial and Denver Basin water rights, providing another 1,570 af/yr of dry year supply and greater average or wet year supply. Finally, the District is a member of the WISE Authority and has subscribed to 500 af/yr of this renewable and reusable water, although this is not considered part of the dry year supply.

B. Water Rights Considerations

The pumping of the shallow wells constructed in the Cherry Creek alluvium is covered by the District's existing plans for augmentation (W-6268 and 11CW198). The augmentation plan in Case No. W-6268 allows for tributary pumping using three sources:

1. In-priority pumping based upon the historic consumptive use from the senior Harrison and Haley ditch rights totaling 1,220 acre-feet per year;
2. Infrequent in-priority pumping under the junior well water rights; and
3. Out-of-priority pumping derived from return flow credits from the District use of non-tributary (pre-S.B. 213) wells, pursuant to the plan for augmentation.

The augmentation plan in Case No. 11CW198 includes additional alluvial wells, non-tributary water rights not included in the W-6268 augmentation plan, and additional water sources. These sources include:

1. Infrequent in-priority pumping under new alluvial well water rights;
2. Additional non-tributary water rights and wells;
3. Water available from the Cherry Creek Project Water Authority (CCPWA);
4. Water available through the WISE project; and
5. Out-of-priority alluvial well pumping to be allowed under the new plan for augmentation and derived from return flow credits and/or direct releases and exchanges from the above sources.

The District has acquired a substantial amount of non-tributary groundwater through adjudications (by the District or Senior Corp.), through inclusions into the District, or by direct purchase. The attached Table 2 includes a summary of the various decreed tributary, non-tributary, and not non-tributary rights and annual appropriations.

The primary source of non-tributary groundwater currently in use by the District is from the original set of Pre-Senate Bill 213 (Pre-S.B. 213) wells, which are referenced in the augmentation plan in Case No. W-6268 and three associated decrees (W-6265, W-6267 and W-7241). These are the wells designated as A through M. Because part of the original appropriations for Wells A, B, C and J have been reduced, and Well C has been abandoned, the present total availability of non-tributary water for this set of wells is 1,865 acre-feet per year (af/yr).

The District acquired water rights from Senior Corp., initially for property east of Highway 83, and then for property west of the highway. These rights were originally filed together under applications for each of the four Denver Basin aquifers but were then separated into two sets of decrees based on lands east and west of Highway 83. Non-tributary rights acquired from Senior Corp. for the District total 2,261 af/yr for the area east of the highway, and 3,051 af/yr for the west area. Although the decrees were separated based on geography, Colorado water law allows the District to combine Denver Basin water rights within a contiguous well field and produce these rights from any well in the same aquifer.

The District also acquired the non-tributary water rights associated with the Gondolier Farms which were decreed in Case No. 84CW208. These rights total 885 af/yr.

In Case No. 85CW203, the District adjudicated all remaining water underlying District lands east of Highway 83 which had not previously been adjudicated in any of the above-described decrees. This decree also recovered a portion of the water made available by the reduction in appropriations for Pre-S.B. 213 wells A, B, C and J. The total non-tributary ground water made available under this decree is 2,466 af/yr.

The District has also obtained additional decreed groundwater rights by inclusion of the Reata South (1,608 af/yr), Vistancia/Scott Road (184 af/yr), Cross Creek (40 af/yr), 6793 Scott Avenue (47.9 af/yr), and Pinery Meadows (49.4 af/yr) developments. In addition, the District purchased decreed groundwater rights from the Evans Ranch in the amount of 1,146 af/yr. These rights total 3,075 af/yr.

The water listed in Table 2 under the Broe Aug Plan and Rosie Wells decree (Broe) can only be used for development of the Broe property. The District began service to the development on the Broe property in 2019. These rights total 351 af/yr.

The above-described decrees provide additional non-tributary groundwater for District use beyond the amount originally included in the District augmentation plan. The total of these additional rights is 12,089 af/yr. When combined with the original Pre-S.B. 213 well appropriations, the District has a total non-tributary and not non-tributary groundwater supply of about 13,954 af/yr. It should be noted that several of the listed decrees include provisions where the final ground water appropriation may be changed based on site-specific data at the time wells are drilled. Based on past experience, such data is not likely to change the decreed appropriations more than plus or minus five percent.

The decree in Case No. W-6268 also includes changes in use for the District's 5/9 interest in the Harrison Ditch and the 85% interest in the Haley Ditch. The decree made findings that a combined total of 1,220 af/yr may be pumped through certain District alluvial wells as alternate points of diversion and used directly for municipal purposes. With priorities of May 30, 1874, and July 1, 1873, respectively,

these are some of the most senior water rights on Cherry Creek and provide a firm yield of 1,220 af/yr.

Under the existing augmentation plan in Case No. W-6268, the District can utilize return flows from municipal use of non-tributary water supplied by the District's Denver Basin aquifer wells as credits against out-of-priority tributary well pumping. Under the augmentation plan, depletions from tributary well pumping are calculated by multiplying out-of-priority pumping by the monthly consumptive use percentages included in Paragraph 22 of the decree. Return flow credits from non-tributary pumping are calculated based on the complement of the monthly consumptive use percentages. The credits for return flows are then applied to offset the calculated depletions on an annual basis. As long as the total non-tributary return flows equal or exceed the total tributary well depletions at the end of the year, the District's augmentation plan is in compliance and no injury to other water rights will occur.

Under the plan for augmentation in Case No. 11CW198, additional non-tributary water rights and associated return flow credits are included as augmentation sources to allow for additional tributary well pumping. Up to eight additional alluvial wells (two currently in use and one under construction) can be added under the plan. Depletions from out-of-priority pumping from the alluvial wells are offset by return flows from non-tributary well pumping under the plan, as well as other sources. These other sources include water available to the District through its participation in the Cherry Creek Project Water Authority and the WISE project, a plan by which excess water from the Cities of Denver and Aurora is made available via pipeline for use by several south metro area water providers. The augmentation plan also includes provisions to maximize use and flexibility for the various water sources via exchanges and storage, including aquifer storage and recovery.

C. Demand Requirements

The water requirements of DSSWSD have varied over the years with development and variations in weather. Although overall water demand has increased with additional customers, the per capita residential water demand has decreased due to the District's water conservation efforts. Tables 3 and 4 show the recorded demand over the past 43 years. As can be noted, the system use has tripled since 1982 to a total of 3,613 af in 2024. Projected buildout water use for the District is estimated to be 4,493 af/yr.

D. Summary of Uses and Projected Dry Year and Average Year Yields

The tabulation in Table 1 below shows water used in the system from 2002 – 2024. Even at buildout, water demand falls within the 17,291 af/yr the District has of firm water rights.

The yield of the District's Denver Basin water rights will not be affected by a dry year. Thus, the dry year and average year yield will be the same and will be as decreed, with a total of up to 15,484 af/yr of decreed rights available – 13,954 af/yr of District Denver Basin water rights and 1,530 af/yr of CCPWA Denver Basin water rights.

The District's Cherry Creek alluvial water rights can be impacted by a dry year in terms of both physical supply and water available through the administration of water rights. The most senior water rights for the Haley and Harrison ditches have a firm yield of 1,220 af/yr. When both the junior and senior alluvial water rights are combined with Denver Basin water under the District augmentation plans, the actual yield of the alluvial wells is greater. The expected average year yield of the alluvial water rights is about 2,150 af/yr.

The alluvial water rights owned by CCPWA are administered similarly to the District's alluvial water

rights. The three senior water rights owned by CCPWA are more senior than the District's ditch rights and therefore can also be relied upon in drought years. The District's share of the dry year yield for these alluvial water rights is 40 af/yr.

The anticipated reusable supply available to the District in dry years is 47 af. This is the volume available after return flows are used to meet augmentation plan requirements. It is exchanged up to and stored in Walker Reservoir for later use by the District.

The District's subscription to WISE is for an average annual delivery of 500 af. However, it is expected that deliveries will be reduced during times of drought and therefore are not considered in dry year supplies.

The current and proposed uses of the District's water rights are the same and are for all uses. These uses correspond to the existing decreed water rights of the District.

Table 1. Proportion of Tributary and Non-Tributary Water Use by Year

Year	Tributary (af/yr)	Non-Tributary (af/yr)	Total
2002	2,002	832	2,834
2003	1,730	687	2,417
2004	1,852	360	2,212
2005	2,088	652	2,740
2006	2,704	811	3,515
2007	2,474	613	3,087
2008	2,450	1,021	3,471
2009	1,928	608	2,536
2010	2,160	1,150	3,310
2011	2,536	769	3,305
2012	2,198	1,273	3,471
2013	1,704	1,195	2,899
2014	1,801	896	2,697
2015	2,036	741	2,777
2016	2,015	962	2,977
2017	2,155	943	3,098
2018	2,312	1,241	3,553
2019	2,149	1,230	3,379
2020	2,015	1,810	3,824
2021	2,107	1,297	3,405
2022	2,054	1,807	3,861
2023	2,026	668	2,694
2024	2,183	1,430	3,613

TABLE 2

Denver Southeast Suburban Water & Sanitation District
Water Rights Summary

Case No.	Description	Decreed Amount (af/yr)	Subtotals (af/yr)
A. Tributary Water Rights			
W-6268	Harrison & Haley Ditches	1,220	
W-6268, 11CW198	Junior Water Rights	Variable	
	Total Tributary Water:		**1,220 +**
B. Non-tributary (NT) and Not Non-tributary (NNT) Water Rights			
W-6265	Wells A, B and C	243	
W-6267	Well J	103	
W-7241	Wells F, G, H, I, K, L and M	1,519	
	Pre-S.B. 213 Wells Subtotal:		1,865
83CW087E	Senior Corp. East Side - Arapahoe	1,202	
83CW088E	Senior Corp. East Side - Denver	240	
83CW089E	Senior Corp. East Side - Dawson	305	
83CW090E	Senior Corp. East Side - LFH	514	
	Senior Corp East Side Subtotal:		2,261
82CW087W	Senior Corp. West Side - Arapahoe	1,823	
83CW088W	Senior Corp. West Side - Denver	396	
83CW089W	Senior Corp. West Side - Dawson	154	
83CW090W	Senior Corp. West Side - LFH	678	
	Senior Corp West Side Subtotal:		3,051
84CW208	Gondolier Farms Decree	885	
85CW203	DSSWSD Non-tributary Determination	2,466	
89CW086, 087, 088, and 089	Reata South	1,608	
93CW146 & 2003CW344	Evans Ranch	1,146	
85CW139	Wolf/Vistancia/Scott Road	184	
23CW3065	Cross Creek	40	
22CW3093	Pinery Meadows	49.4	
23CW3146	6793 Scott Ave.	47.9	
	Additional NT and NNT Subtotal:		6,426
Non-tributary Water Assigned to Broe Aug Plan (87CW338)			
82CW418	Rosie Wells Decree (Broe)	351	351
	Total NT and NNT Water:		**13,954**
C. Wholesale Water			
	CCPWA Denver Basin Rights	1,530	
	CCPWA Alluvial Rights (Senior)	40	
	CCPWA Alluvial Rights (Junior)	Variable	
	WISE Water	500	
	Total Wholesale Water:		**2,070 +**
D. Reuse Water			
	Reuse Water in Walker Reservoir	47 +	**47 +**
E. Total Water Sources			**17,291 +**

TABLES 3 and 4

Water Use by Water Year

Table 3. Tributary vs. Non-Tributary Volumes

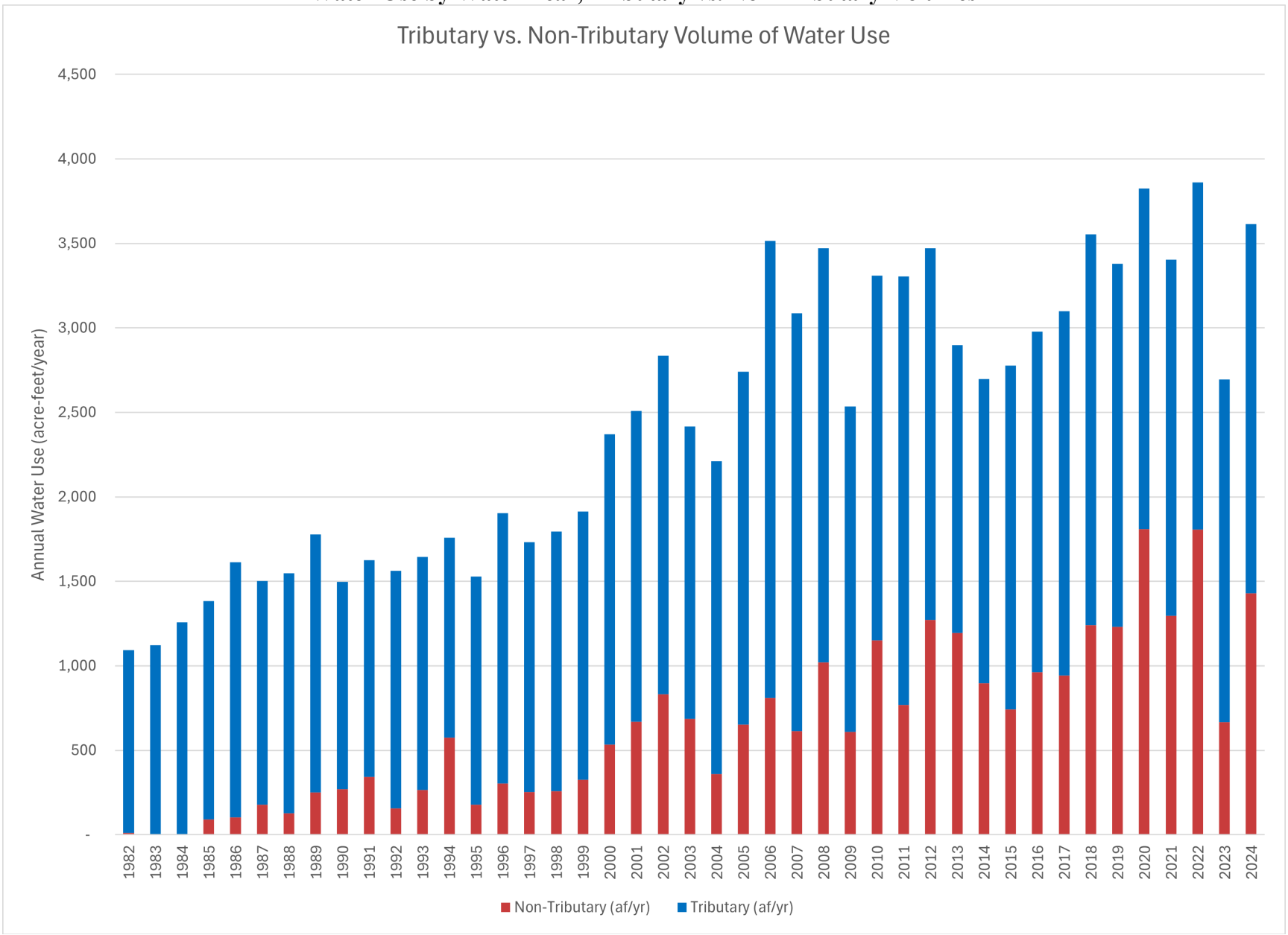
Year	Tributary (af/yr)	Non-Tributary (af/yr)	Total
1982	1,080	12	1,091
1983	1,123	-	1,123
1984	1,258	-	1,258
1985	1,292	91	1,384
1986	1,511	103	1,614
1987	1,324	179	1,504
1988	1,422	127	1,549
1989	1,527	250	1,777
1990	1,225	271	1,496
1991	1,282	344	1,626
1992	1,407	156	1,563
1993	1,379	265	1,644
1994	1,184	574	1,758
1995	1,351	178	1,529
1996	1,601	303	1,904
1997	1,477	254	1,731
1998	1,537	257	1,795
1999	1,588	326	1,914
2000	1,838	533	2,371
2001	1,839	669	2,508
2002	2,002	832	2,834
2003	1,730	687	2,417
2004	1,852	360	2,212
2005	2,088	652	2,740
2006	2,704	811	3,515
2007	2,474	613	3,087
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2020	2,015	1,810	3,824
2021	2,107	1,297	3,405
2022	2,054	1,807	3,861
2023	2,026	668	2,694
2024	2,183	1,430	3,613

Table 4. Tributary vs. Non-Tributary Percents

Year	Tributary	Non-Tributary
1982	99%	1%
1983	100%	0%
1984	100%	0%
1985	93%	7%
1986	94%	6%
1987	88%	12%
1988	92%	8%
1989	86%	14%
1990	82%	18%
1991	79%	21%
1992	90%	10%
1993	84%	16%
1994	67%	33%
1995	88%	12%
1996	84%	16%
1997	85%	15%
1998	86%	14%
1999	83%	17%
2000	78%	22%
2001	73%	27%
2002	71%	29%
2003	72%	28%
2004	84%	16%
2005	76%	24%
2006	77%	23%
2007	80%	20%
2008	71%	29%
2009	76%	24%
2010	65%	35%
2011	77%	23%
2012	63%	37%
2013	59%	41%
2014	67%	33%
2015	73%	27%
2016	68%	32%
2017	70%	30%
2018	65%	35%
2019	64%	36%
2020	53%	47%
2021	62%	38%
2022	53%	47%
2023	75%	25%
2024	60%	40%

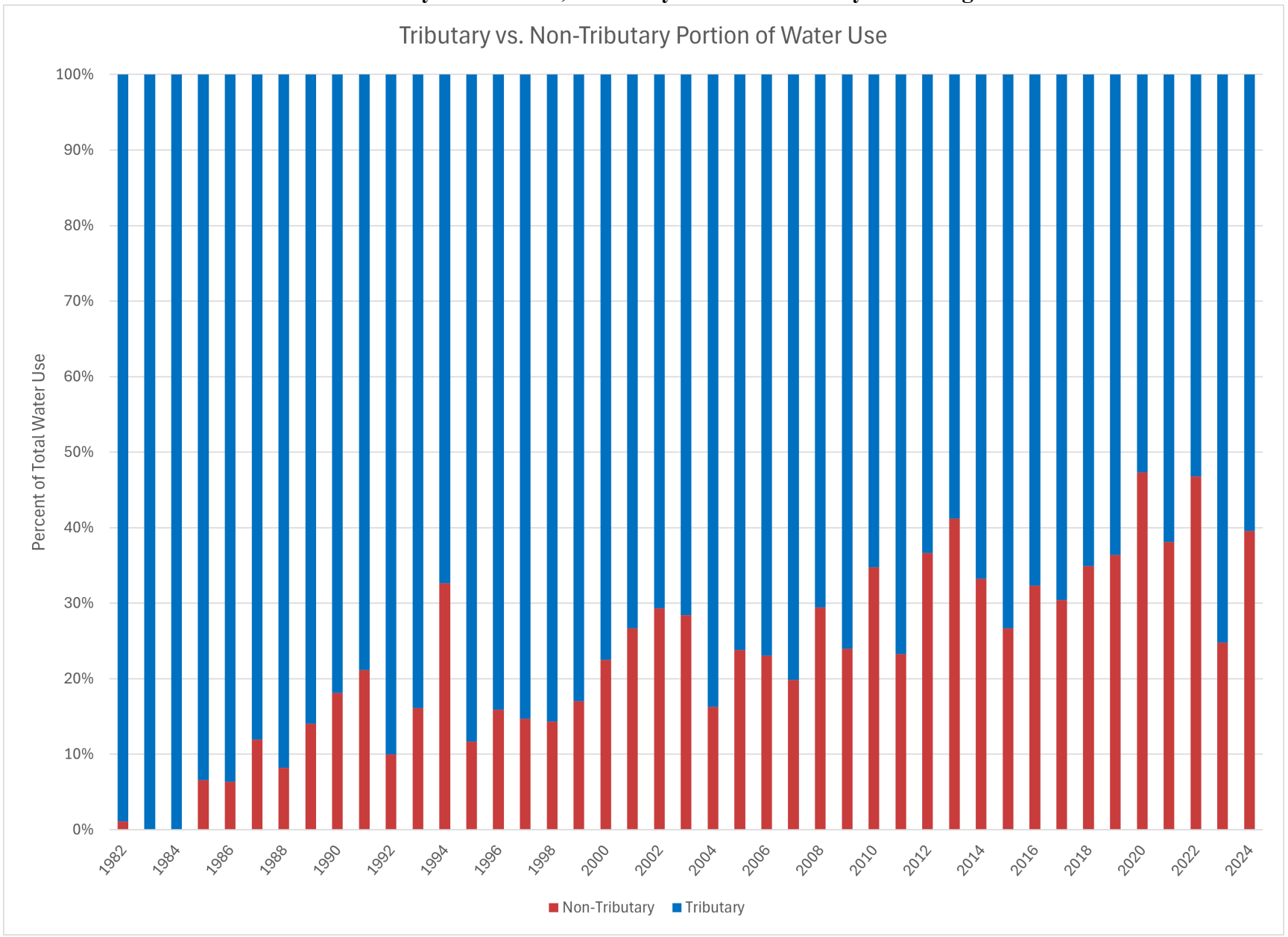
GRAPH 1

Water Use by Water Year, Tributary vs. Non-Tributary Volumes



GRAPH 2

Water Use by Water Year, Tributary vs. Non-Tributary Percentages



MEMORANDUM

To: Douglas County Development Review

From: Steve Tuttle, PE, PTOE

Date: July 31, 2020

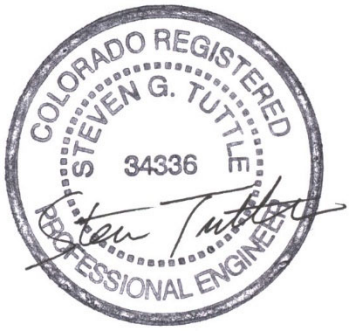
Project: Pinery West Traffic Impact Study Update

Subject: Summary of Changes to Traffic Impact Study

The Fox Tuttle Transportation Group has completed an update to the Pinery West Traffic Impact Study, previously accepted by Douglas County staff (dated April 15, 2019). The attached traffic impact study *update* incorporates the following changes to the project, with the resulting outcomes also summarized:

- **Removal of "Access A", which was a previously proposed ¾-movement, unsignalized intersection located along Parker Road (SH 83)**. The removal of this access is anticipated to result in some, redistribution of site traffic: increased access traffic at the remaining right-in, right-out access ("Access B") along Parker Road, and increases in traffic also to the Parker Road/Access C intersection. As shown in the updated traffic analysis, the redistribution of traffic does not result in degradation of intersection Level of Service at any location and the findings and recommendations of the original traffic impact study are still valid.
- **Changes to Land Use Projections and Trip Generation at the north end of the project.** With the removal of Access A, the land use plan has been updated at the north end of the project. The previously planned charter elementary school land use is now assumed as light industrial or flex office space. 50,000 square feet of office use was added to the trip generation estimates to conservatively estimate this change in projected use, with removal of the charter school from the trip generation calculations. The change in land use results in a decrease in AM peak hour trip generation for the project, with minor changes in the PM peak hour. There were no changes to the findings and recommendations of the original traffic study with this change in land use projections.

/SGT



Pinery West
Traffic Impact Study UPDATE

Date: *Revised* July 31, 2020

Submitted To:
Starwood Land Advisors, LLC
385 Inverness Parkway, Suite 310
Englewood, CO 80112

Submitted By:
Fox Tuttle Transportation Group
1624 Market Street, Suite 202
Denver, Colorado 80202

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Existing Traffic Data
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PINERY WEST DEVELOPMENT

TRAFFIC IMPACT STUDY *UPDATE*

1.0 INTRODUCTION

The Fox Tuttle Transportation Group has prepared this traffic impact study for the Pinery West development project in Douglas County, Colorado. The project site is located at the northwest corner of the Parker Road (Highway 83) and N. Pinery Parkway intersection. The project proposes to develop 144± acres with a mix of employment, commercial, and light industrial uses.

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, site-build out (Year 2030), and long-term, 20-year (Year 2040) peak hour intersection and roadway 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 Douglas County staff in identifying any intersection or roadway deficiencies and potential improvements for the build-out year and long-term future scenarios. This study focused on the weekday AM and PM peak hours which represents the periods of highest trip generation for the proposed uses and adjacent roadway traffic. It also includes an evaluation of roadway laneage needs, auxiliary lane requirements, and intersection traffic controls.

The study is consistent with the requirements listed in Douglas County's *Roadway Design and Construction Standards, Appendix B for Traffic Impact Study Criteria*.

2.0 PROJECT DESCRIPTION

The Pinery West project proposes to construct a mix of employment, commercial, and light industrial uses on a largely vacant 144± acre property. Based on conceptual site planning, it is anticipated that there will be a grocery marketplace, office space, flex office space, commercial plats for shops, restaurants, and services, daycare services, a hote, RTD park-n-ride station, recreational space, and light industrial uses.

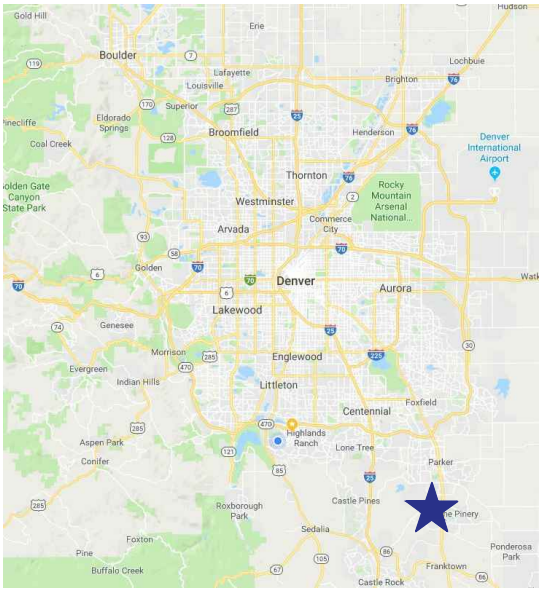
The project proposes to have two full-movement accesses on N. Pinery Parkway, a ¾-movement access along N. Pinery Parkway, and a right-in, right-out access on Parker Road. The curb-cuts on Pinery Parkway already exist and will be extended into the subject property to service the proposed land uses. In the short-term, trips from the Pinery West project will travel along Parker Road to get to/from their regional destinations.

In the long-term, Pinery Parkway is anticipated to be extended to the west to Crowfoot Valley Road and Pinery Center Boulevard is anticipated to be extended to the north to Stroh Road at J Morgan Boulevard. The County also anticipates that Pinery Center Blvd. will be extended as a collector roadway south to Scott Road in the long-term future, pending development north of Scott Road that would complete this connection.

The internal roadway network will include constructing Pinery Center Boulevard and Prospector Way as collector streets.

A vicinity map is shown on **Figure 1**. The site and access plan is provided on **Figure 2**.

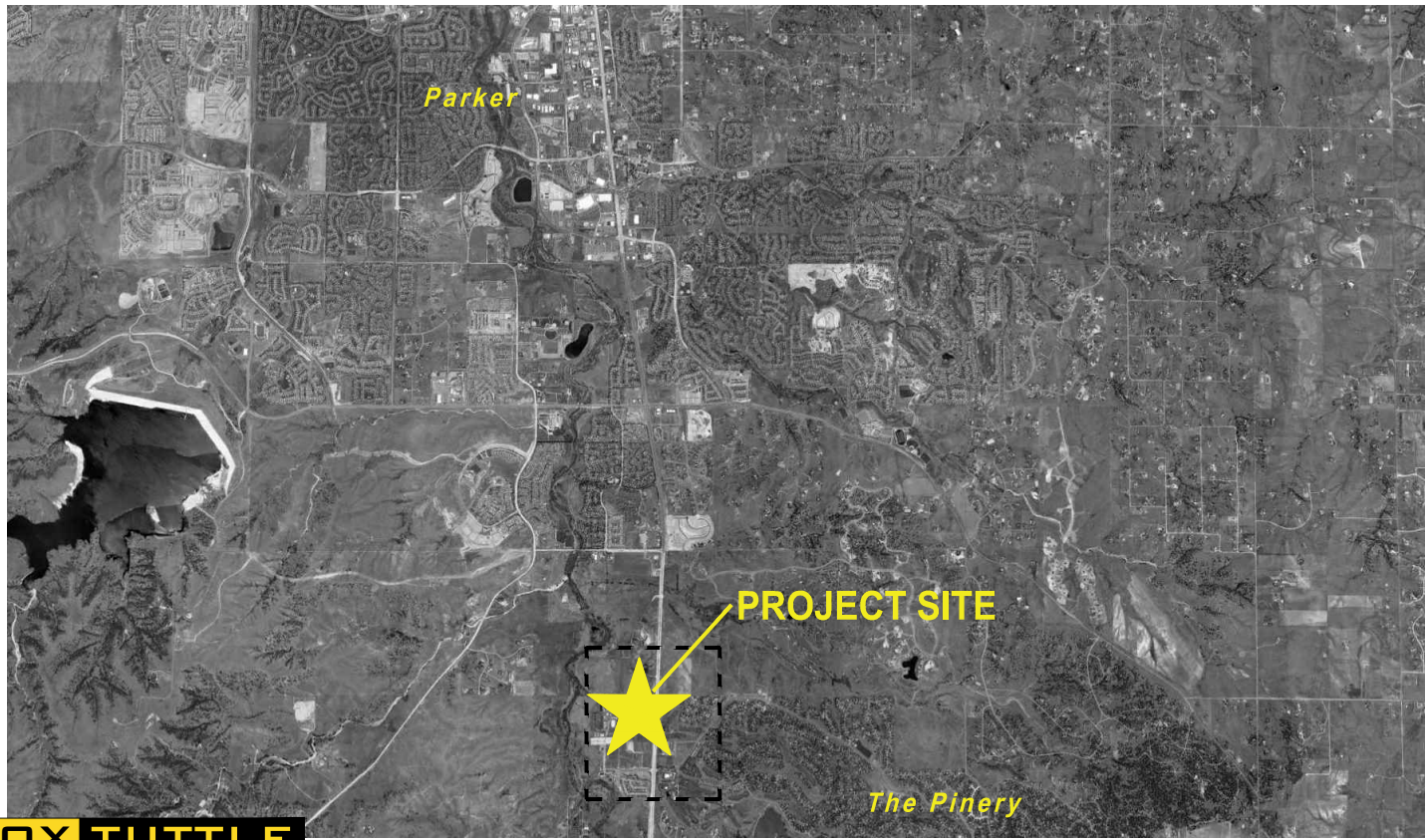
Location Map



Project Site



Vicinity Map



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PINERY WEST TRAFFIC IMPACT STUDY UPDATE

VICINITY MAP

FT #	20049	Engineer	SGT	Date	7/30/20	Drawn by	SGT	Figure #	1



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PINERY WEST TRAFFIC IMPACT STUDY UPDATE

CONCEPT SITE PLAN

FT #	20049	Original Scale	NTS	Date	7/30/20	Drawn by	SGT	Figure #	2

3.0 STUDY CONSIDERATIONS

3.1 Data Collection

Intersection turning movement volumes were collected in October 2018 at three existing intersections during the weekday AM and PM peak hours. Average daily traffic (ADT) counts were also collected for 24-hours on N. Pinery Parkway west of Parker Road and on Stroh Road east of J. Morgan Boulevard. Historic daily volumes along Parker Road were gathered from the Colorado Department of Transportation's (CDOT) Transportation Data Management System (TDMS) and Online Transportation Information System (OTIS) as well as from Denver Regional Council of Government (DRCOG) resources. The existing traffic volumes are illustrated on **Figure 3**. The existing intersection geometry and traffic control are also shown on this figure.

Signal-related information for the existing intersections were provided by the Town of Parker and CDOT. 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 factor was applied to the intersections for the existing scenarios. Study intersections were evaluated using Synchro software.

3.3 Level of Service Definitions

A level of service analysis was conducted to determine the existing and future performance of the study area intersection and to determine the most appropriate traffic control device and need for auxiliary lanes for the study intersections.

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 (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

[1] Highway Capacity Manual, Highway Research Board Special Report 209, Transportation Research Board, National Research Council, 2010 and 6th Edition (2016).

intersection as a whole and for each turning movement. A more detailed discussion of LOS methodology is contained in the **Appendix** for reference.

Typically, LOS A through C is considered to be good for the overall intersection operations and the desired standard for overall intersection performance is LOS D or better. Individual movements may be allowed to fall to LOS E/F depending on the circumstances, such as a low-volume sidestreet approach to a major arterial or a protected-only left-turn on a major arterial.

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 existing study area street network consists of a major arterial and two collectors. The primary public roadways that serve the project site are discussed in the following text and illustrated on **Figure 1**.

Parker Road (State Highway 83) is a north-south six-lane major arterial that provides local and regional access beyond the Pinery. The highway travels from Aurora (to the north), through the Town of Parker and beyond Franktown (to the south). Parker Road is a CDOT facility classified as NR-A (Non-Rural Principal Highway). North of the project site, the roadway intersects with and provides access to E-470. The posted speed limit on Parker Road is 55 miles per hour (mph) adjacent to the site. This roadway has limited access for pedestrians and bicyclists (see **Section 4.3** for discussion on existing facilities for pedestrian and bicyclist). Parker Road currently serves approximately 32,000 vehicles per day (vpd) north of N. Pinery Parkway and approximately 23,900 vpd south of N. Pinery Parkway. This roadway is the eastern boundary of the proposed site. Parker Road is between 76-feet and 112-feet wide adjacent to the Pinery West property, which includes 12-foot travel lanes, three per direction; 12-foot right-turn deceleration and acceleration lanes; varying widths of shoulders; and a 30-foot center left-turn lane/median.

Stroh Road is an east-west, collector that extends from Motsenbocker Road to Parker Road. Stroh Road ends east of Parker Road within a rural neighborhood. It provides access to existing residential neighborhoods and commercial businesses. The posted speed limit is 40 mph within the study area. Stroh Road currently serves approximately 8,800 vpd west of Parker Road. This roadway is 102-feet east of J. Morgan Boulevard (two lanes per direction) and narrows to 28-feet west of J. Morgan Boulevard (one lane

per direction); including 12-foot travel lanes; 12-foot deceleration lanes; and a center median. This roadway is the northern boundary of the study area.

Pinery Parkway is circuitous, four-lane collector roadway that serves The Pinery community with two connections to Parker Road. Within The Pinery, the parkway provides access to neighborhoods, the country club, four schools, and recreational areas. West of Parker Road, Pinery Parkway provides access to a small residential neighborhood, The Pinery RV Lot, Pinery Wastewater Treatment Plant, and a trailhead for the Cherry Creek Trail. The posted speed limit is 25 mph. In the long-term, it is proposed that this roadway be extended west to access Crowfoot Valley Road.

4.2 Intersections

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

1. Parker Road at N. Pinery Parkway (signalized)
2. Parker Road at Stroh Road (signalized)
3. Stroh Road at J. Morgan Boulevard (side-street stop-controlled)

The existing lane configuration at each of the study locations is illustrated on **Figure 3**. Additional intersections were analyzed for the scenarios with the addition of project-added traffic.

4.3 Pedestrian and Bicycle

Currently, there are sidewalks on both sides of Pinery Parkway (west of Parker Road) and on Stroh Road. There is a detached multi-use path on the south side of Pinery Parkway that connects the Cherry Creek Trail to The Pinery country club and community. Along Pinery Parkway there is a multi-use path that is designated as a regional trail that links to the Cherry Creek Trail.

There are no on-street bike lanes on the study roadways. Currently bicyclists are permitted to ride within the wide shoulders on Parker Road or with traffic on Stroh Road and Pinery Parkway.

Just west of the project boundary is a trailhead for the Cherry Creek Trail. This multi-use path starts south of this trailhead and travel north through the Town of Parker and City of Centennial into the Cherry Creek Reservoir State Park. The trail continues along the Cherry Creek into downtown Denver ending at Confluence Park.

4.4 Transit

Currently, there is the Pinery park-n-ride on the north side of N. Pinery Parkway just east of Parker Road. It has 79 parking spaces and is served by Route P (Parker / Denver). The bus route links The Pinery to Parker and Downtown Denver via Parker Road, E-470, I-25, and Broadway. There is limited service to the near-by park-n-ride that only operates in peak times at 30-minute headways.

4.4.1 Existing Intersection Capacity Analysis

The existing volumes, lane configuration, and traffic control are illustrated on **Figure 3**. The results of the LOS calculations for the intersections are summarized in **Table 1**. The intersection level of service worksheets and queue reports are attached in the **Appendix**.

All project intersections are shown to be operating at LOS C or better overall in the AM and PM peak hours, which meets Douglas County requirements for overall intersection operations. There are several individual movements that are operating at LOS E or F, as noted below:

- Parker Road & N. Pinery Parkway: This signalized intersection operates overall at LOS C/B in the AM/PM peak hours, respectively. The westbound right-turn movement is calculated to operate at LOS F in the AM peak hour, with just under 400 vehicles per hour (vpd) exiting the Pinery and turning right onto northbound Parker Road. The 95th percentile queue[2] for this movement is calculated at 328 feet in the AM peak hour.

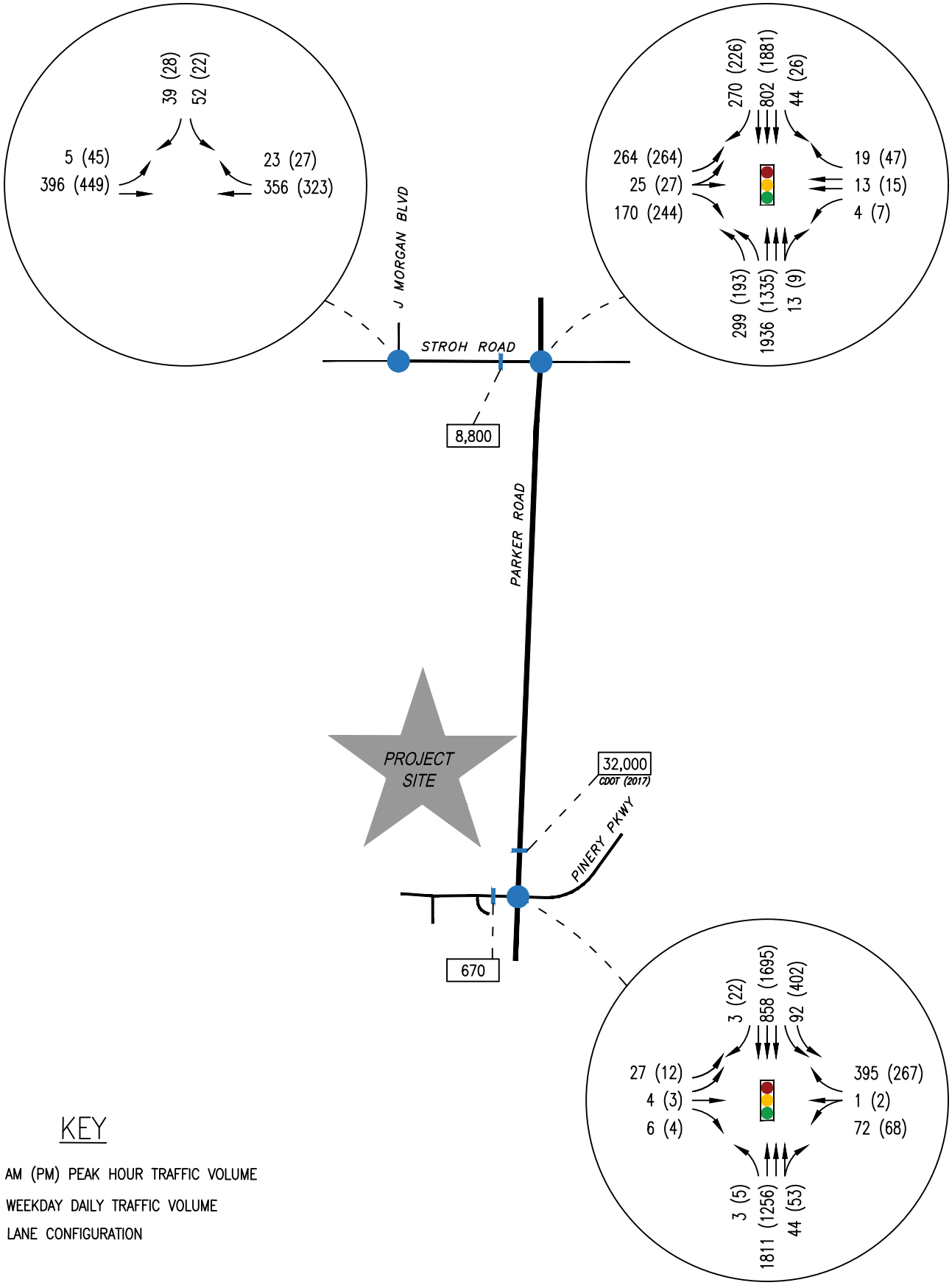
  To mitigate this existing deficiency, a northbound right-turn acceleration lane would need to be constructed on Parker Road to allow this movement to function as a "free right" turn movement, which would significantly reduce the delays and queuing. An acceleration lane would typically be installed for these volumes. This improvement would not be related to development of the Pinery West project but would be necessary to mitigate an existing deficiency. This improvement was not assumed to be installed for future scenarios with project development, to provide a more conservative estimate of site traffic impacts.

- Parker Road & Stroh Road: This signalized intersection operates overall at LOS C both peak hours. The southbound left-turn movement is calculated to operate at LOS E in the

[2] 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.

PM peak hour. The 95th percentile queue for this movement is calculated at 55 feet in the AM peak hour (less than 3 vehicles).

This delay is due to the protected-only left-turn operation of this movement and is common where a lower volume left-turn is protected along a major arterial. As the protected-only operation is due to safety concerns with left-turns across a major, three-lane arterial, no changes are recommended to mitigate this delay.



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PINERY WEST TRAFFIC IMPACT STUDY UPDATE

EXISTING TRAFFIC VOLUMES (YEAR 2018)

FT #	20049	Pinery Village Filing 2 Minor Development	Diagram Scale	NTS	Date	7/30/20	Drawn by	SGT	Figure #	3

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Table 1A - Signalized Intersection Level of Service Summary

Intersection and Lanes Groups	2018 Existing				2030 Background				2030 Background + Project				2040 Background without Connections				2040 Total with Connections			
	AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
SIGNAL CONTROL																				
Parker Rd & N. Pinery Pkwy	**34.6**	**C**	**15.7**	**B**	**41.8**	**D**	**22.7**	**C**	**42.3**	**D**	**44.5**	**D**	**58.2**	**E**	**23.9**	**C**	**36.7**	**D**	**40.2**	**D**
Eastbound Left	45.2	D	29.9	C	45.5	D	28.8	C	48.0	D	70.0	E	44.6	D	29.7	C	27.6	C	44.0	D
Eastbound Through	30.3	C	29.6	C	30.3	C	28.4	C	39.1	D	30.6	C	29.9	C	29.3	C	23.4	C	30.9	C
Eastbound Right	0.0	A	0.0	A	0.0	A	0.0	A	0.1	A	0.3	A	0.0	A	0.0	A	0.1	A	0.2	A
Westbound Left									62.6	E	70.6	E					46.8	D	53.2	D
Westbound Left+Through	45.9	D	33.3	C	46.6	D	42.4	D					50.0	D	45.4	D				
Westbound Through									50.5	D	53.0	D					48.3	D	52.8	D
Westbound Right	<120	F	23.3	C	<120	F	26.8	C	> 120	F	46.8	D	<120	F	27.8	C	45.8	D	40.4	D
Northbound Left	54.4	D	41.1	D	54.4	D	48.7	D	53.3	D	70.3	E	53.5	D	48.7	D	52.5	D	54.4	D
Northbound Through+Right	23.1	C	16.9	B	39.2	D	26.7	C	23.5	C	33.9	C	67.2	E	28.5	C	39.7	D	27.6	C
Southbound Left	40.2	D	31.7	C	40.4	D	38.3	D	54.0	D	58.9	E	41.1	D	38.3	D	51.5	D	54.6	D
Southbound Through	9.7	A	8.9	A	10.3	B	15.2	B	17.4	B	47.3	D	11.3	B	16.6	B	27.5	C	49.7	D
Southbound Right	0.0	A	0.0	A	0.0	A	0.0	A	0.2	A	0.3	A	0.0	A	0.0	A	0.1	A	20.5	C
Parker Rd & Stroh Rd	**25.2**	**C**	**20.9**	**C**	**32.1**	**C**	**26.4**	**C**	**31.1**	**C**	**34.8**	**C**	**32.6**	**C**	**30.2**	**C**	**25.7**	**C**	**36.5**	**D**
Eastbound Left	53.6	D	45.5	D	43.7	D	40.8	D	43.0	D	61.5	E	43.4	D	46.4	D	48.7	D	54.8	D
Eastbound Left+Through	52.2	D	45.3	D	42.7	D	42.8	D	41.9	D	48.9	D	42.1	D	46.8	D	42.4	D	43.6	D
Eastbound Right	0.2	A	0.2	A	0.3	A	0.3	A	0.3	A	0.3	A	0.2	A	0.3	A	0.1	A	0.2	A
Westbound Left	49.1	D	47.5	D	50.4	D	49.4	D	50.9	D	50.2	D	50.7	D	54.2	D	51.3	D	50.4	D
Westbound Through	49.1	D	46.7	D	53.0	D	52.2	D	53.1	D	53.7	D	53.3	D	57.1	E	53.4	D	52.8	D
Westbound Right	0.0	A	0.0	A	0.1	A	0.1	A	0.1	A	0.1	A	0.0	A	0.1	A	0.0	A	0.1	A
Northbound Left	46.2	D	46.7	D	48.7	D	48.4	D	52.1	D	60.6	E	52.8	D	62.2	E	51.1	D	51.4	D
Northbound Through	24.8	C	14.4	B	17.9	B	16.9	B	37.3	D	18.5	B	39.4	D	17.7	B	25.6	C	19.0	B
Northbound Right	11.9	B	9.7	A	10.7	B	10.4	B	10.8	B	8.9	A	10.8	B	10.4	B	11.0	B	10.7	B
Southbound Left	48.8	D	55.2	E	57.3	E	57.2	E	64.1	E	54.7	D	70.9	E	81.3	F	59.6	E	59.7	E
Southbound Through	20.2	C	24.1	C	47.5	D	35.1	D	22.6	C	50.0	D	21.0	C	40.0	D	20.5	C	52.4	D
Southbound Right	0.3	A	0.2	A	0.3	A	0.3	A	0.3	A	0.3	A	0.4	A	0.3	A	0.4	A	0.3	A
Pinery Pkwy & Access C									**15.5**	**B**	**26.7**	**C**					**20.3**	**C**	**16.5**	**B**
Eastbound Left									7.3	A	18.7	B					5.0	A	11.0	B
Eastbound Through									7.8	A	23.1	C					7.9	A	12.7	B
Eastbound Right									7.3	A	18.7	B					10.3	B	6.4	A
Westbound Left									3.8	A	18.4	B					14.4	B	9.2	A
Westbound Through									3.6	A	14.1	B					16.8	B	8.8	A
Westbound Right									3.9	A	14.6	B					51.9	D	5.8	A
Northbound Left+Through+Right									35.7	D	15.9	B					43.5	D	30.9	C
Southbound Left									54.4	D	48.6	D					45.8	D	42.4	D
Southbound Through+Right									34.8	C	15.1	B					40.1	D	29.4	C
Stroh Road & J Morgan Blvd																	**16.1**	**B**	**16.7**	**B**
Eastbound Left																	5.2	A	6.8	A
Eastbound Through																	9.0	A	11.2	B
Eastbound Right																	6.0	A	6.8	A
Westbound Left																	4.8	A	6.5	A
Westbound Through																	7.2	A	8.4	A
Westbound Right																	4.8	A	5.9	A
Northbound Left																	48.9	D	43.0	D
Northbound Through																	43.1	D	35.7	D
Northbound Right																	43.0	D	35.7	D
Southbound Left																	47.7	D	45.3	D
Southbound Through																	43.2	D	44.0	D
Southbound Right																	43.2	D	43.7	D
Pinery Pkwy & Pinery Center Blvd																	**18.6**	**B**	**22.8**	**C**
Eastbound Left																	7.6	A	10.5	B
Eastbound Through																	7.1	A	10.5	B
Eastbound Right																	6.6	A	8.8	A
Westbound Left																	10.9	B	19.6	B
Westbound Through																	12.5	B	17.9	B
Westbound Right																	13.2	B	31.3	C
Northbound Left																	38.3	D	34.6	C
Northbound Through+Right																	38.3	D	33.4	C
Southbound Left																	37.8	D	45.6	D
Southbound Through+Right																	37.1	D	36.8	D

Note: Delay represented in average seconds per vehicle.

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Table 1B - Stop Controlled Intersection Level of Service Summary

Intersection and Lanes Groups	2018 Existing				2030 Background				2030 Background + Project				2038 Background without Connections				2038 Total with Connections			
	AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
STOP SIGN CONTROL																				
Stroh Rd & J. Morgan Blvd																				
Eastbound Left	8.2	A	8.2	A	8.4	A	8.5	A	8.4	A	8.6	A	8.6	A	8.7	A				
Southbound Left	21.1	C	19.0	C	29.4	D	25.9	D	31.9	D	31.8	D	38.9	E	33.1	D				
Southbound Right	11.1	B	10.6	B	11.8	B	11.2	B	11.8	B	11.5	B	12.5	B	11.8	B				
Parker Rd & Wellspring Dr																				
Eastbound Right									0.0	A	0.0	A					12.3	B	33.0	D
Pinery Pkwy & Pinery Center Blvd																				
Eastbound Left									7.6	A	7.7	A								
Westbound Left									7.4	A	7.5	A								
Northbound Left									0.0	A	0.0	A								
Northbound Through+Right									8.7	A	8.7	A								
Southbound Left									11.1	B	18.9	C								
Southbound Through+Right									0.0	A	18.9	C								
Pinery Pkwy & Access D																				
Westbound Left									8.6	A	7.3	A					8.4	A	9.2	A
Northbound Right									7.4	A	8.6	A					9.9	A	11.4	B

Note: Delay represented in average seconds per vehicle.

20049_LOS.xlsx

5.0 FUTURE CONDITIONS

5.1 Annual Growth Factor and Future Volume Methodology

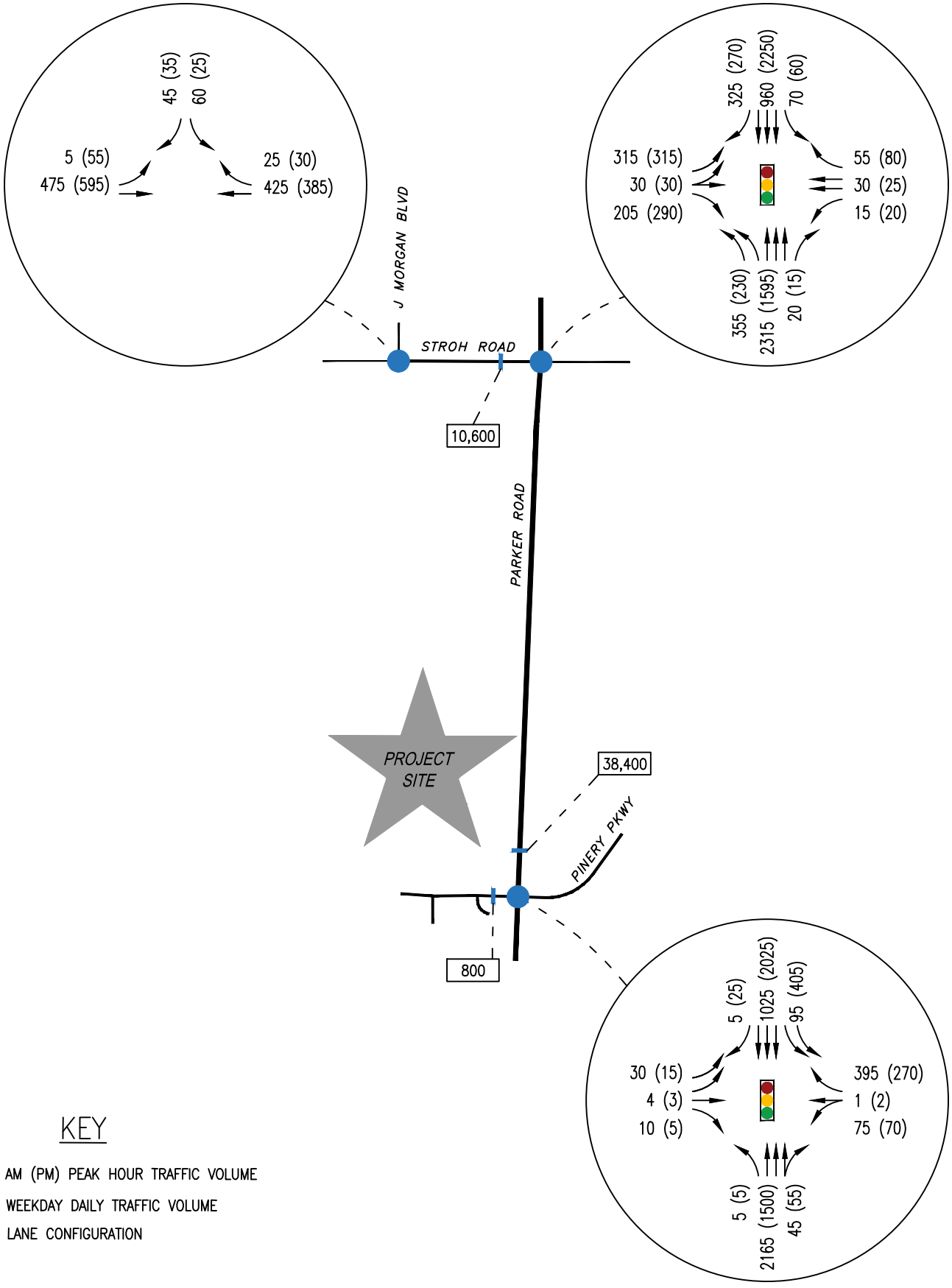
In order to forecast the future peak hour traffic volumes, background traffic growth assumptions were estimated based on various resources: DRCOG regional model, CDOT historic traffic volumes and 20-year factor, and previous traffic studies[3]. Based on this data, it is assumed there will be an annual growth rate of 1.5% throughout the study area which is consistent with CDOT data. Additional traffic was assumed for the east leg of the Parker Road & Stroh Road intersection to account for recent residential development in that area. Additionally, it was assumed that since the Pinery is largely built out that projected traffic growth along N. Pinery Parkway east of Parker Road would not be as high as the 1.5% annual growth assumed elsewhere in the study area.

The project is anticipated take 10 years to be fully permitted, constructed and occupied. On this basis, the Year 2030 was analyzed as the site "build out" year.

Future traffic connections (long-term) include the extension of Pinery Parkway to the west as a minor arterial roadway and the extension of Pinery Center Blvd. as a collector roadway north to Stroh Road and south to Scott Road. The future background traffic projections include a shift of some local traffic from Parker Road to this new north-south collector. These volumes were based on traffic studies provided by Douglas County for planned development to the south near Scott Road. The projections for future traffic with the connections also assumes a shift of traffic from Stroh Road (and future north) to Pinery Parkway to the west, as the future roadway network will provide alternatives to Parker Road in this area.

Using these assumptions, the 2030 background traffic is summarized on **Figure 4**; the 2040 background traffic without the Pinery Parkway and Pinery Center Blvd. connections is summarized on **Figure 5;** and the 2040 background traffic with these connections is summarized on **Figure 6**.

[3] Referenced: Pinery West Development Traffic Impact Study. Krager and Associates, Inc. September 2008.

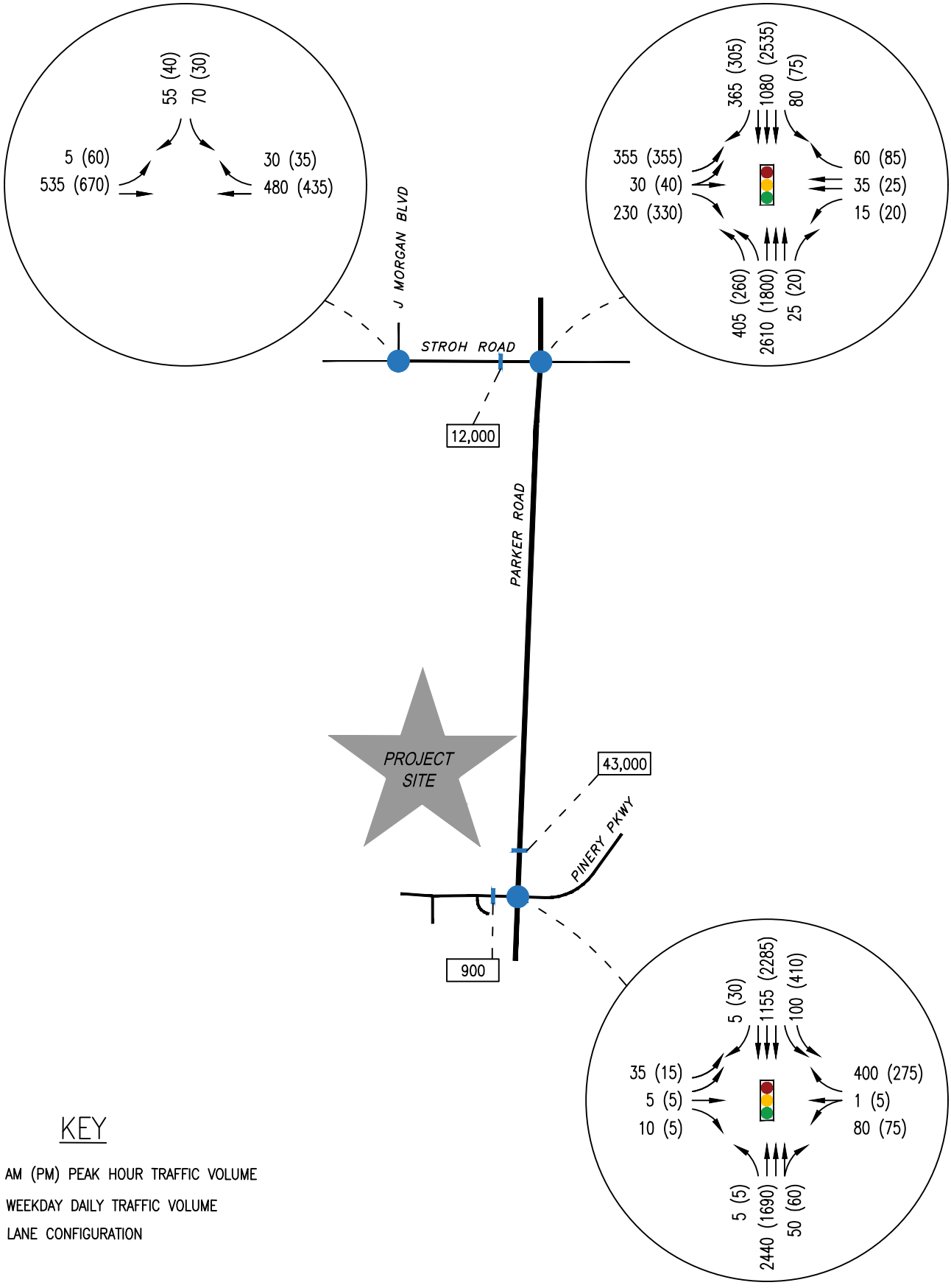


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PINERY WEST TRAFFIC IMPACT STUDY UPDATE

YEAR 2030 BACKGROUND TRAFFIC VOLUMES

FT #	20049	Pinery Village Filing 2 Minor Development	Original Scale	NTS	Date	7/30/20	Drawn by	SGT	Figure #	4

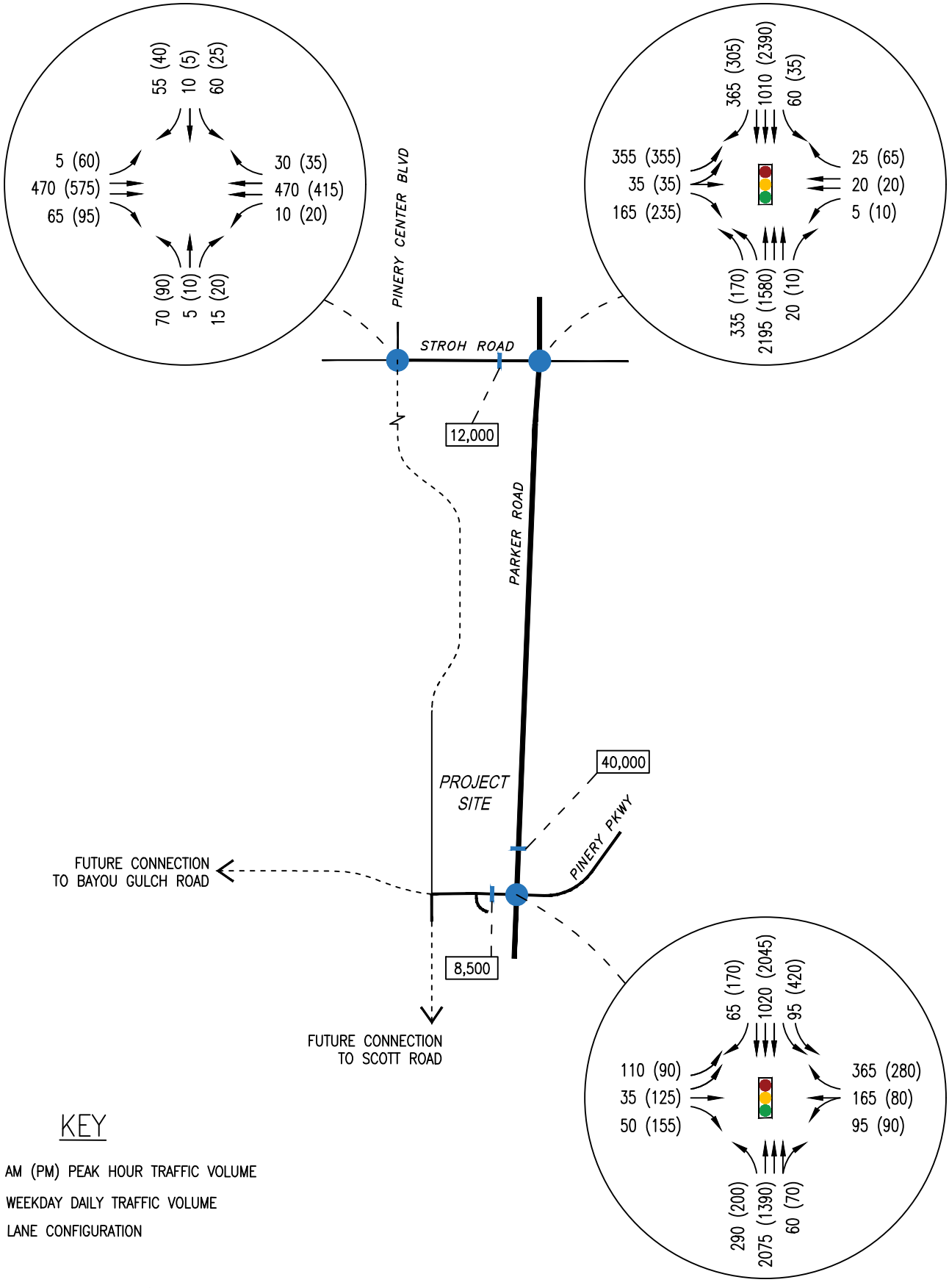


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PINERY WEST TRAFFIC IMPACT STUDY UPDATE

YEAR 2040 BACKGROUND TRAFFIC VOLUMES (WITHOUT CONNECTIONS)

FT #	20049	Filing	03 Minor Development	Original Scale	NTS	Date	7/30/20	Drawn by	SGT	Figure #	5



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PINERY WEST TRAFFIC IMPACT STUDY UPDATE

YEAR 2040 BACKGROUND TRAFFIC VOLUMES (WITH CONNECTIONS)

FT #	20049	Pinery Village Filing 3 Minor Development	Original Scale	NTS	Date	7/30/20	Drawn by	SGT	Figure #	6

5.1.1 Year 2030 Background Intersection Capacity Analysis

The study area intersections were evaluated to determine baseline operations for the 2030 background scenario and to identify any capacity constraints associated with background traffic. The background volumes, lane configuration, and traffic control are illustrated on **Figure 4**.

The level of service criteria discussed previously was applied to the study area intersections to determine the impacts with the short-term background volumes. The results of the LOS calculations for the intersections are summarized in **Table 1A** and **Table 1B**. The intersection level of service worksheets and queue reports are attached in the **Appendix**. The Year 2030 background analysis assumed the existing lane configuration and signal phasing would remain the same at the study intersections.

All project intersections are shown to operate at LOS D or better overall in the AM and PM peak hours, which meets Douglas County requirements for overall intersection operations. There are several individual movements that are operating at LOS E or F, as noted below:

- Parker Road & N. Pinery Parkway: As noted with the existing conditions analysis, the westbound right-turn movement is calculated to operate at LOS F in the AM peak hour Parker Road with long queueing.

  To mitigate this existing deficiency, a northbound right-turn acceleration lane would need to be constructed on Parker Road to allow this movement to function as a “free right” turn movement, which would significantly reduce the delays and queuing. An acceleration lane would typically be installed for these volumes. This improvement would not be related to development of the Pinery West project but would be necessary to mitigate an existing deficiency. This improvement was not assumed to be installed for scenarios with project development to provide a conservative estimate of site traffic impacts.

- Parker Road & Stroh Road: This signalized intersection is projected to operate overall at LOS D and LOS C in the AM and PM hours, respectively, but with background (non-project) related improvements installed. Several side-street and left-turn movements are anticipated to operate at LOS E and/or LOS F in at least one peak hour.

  Widening of the east departure from the intersection is necessary to provide a dedicated westbound through lane and westbound dual left-lanes. This would remove the existing westbound shared left + through lane condition which requires split phasing of the signal, which is highly inefficient and would result in the intersection operating at LOS F in the

Year 2030 with background (non-project) traffic growth. This improvement is assumed in place for the Year 2030 background scenario.

5.1.2 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 with the project and without the Pinery Parkway and Pinery Center Blvd. extensions in place. Approach peak hour factors were adjusted, where appropriate, to account for peak hour spreading that will occur with traffic volume growth. The Year 2040 background volumes, lane configuration, and traffic control are illustrated on **Figure 5**.

The results of the LOS calculations for the intersections are summarized in **Table 1A** and **Table 1B**. The intersection level of service worksheets and queue reports are attached in the **Appendix**.

All project intersections are shown to be operate at LOS D or better overall in the AM and PM peak hours, with the following exceptions:

- Parker Road & N. Pinery Parkway: This signalized intersection is calculated to operate at LOS E overall in the AM peak hour. In addition to the continued delays for the westbound right-turn movement, which will increase with traffic growth on Parker Road, the northbound through movement is projected to operate at LOS E in the AM peak hour.

  To mitigate the existing westbound right-turn deficiency, a northbound right-turn acceleration lane would need to be constructed on Parker Road (as previously discussed). To mitigate the northbound approach delays, a northbound right-turn deceleration lane into the Pinery would need to be installed. Both are either existing or future-background growth deficiencies not related to development of the project. These improvements were not assumed to be installed for future scenarios with project development to provide a conservative estimate of site traffic impacts. As discussed further in this report, improvements needed to be installed to support both background and project-added traffic with site development will provide benefit to this intersection such that the intersection can be mitigated to acceptable Levels of Service.

- Parker Road & Stroh Road: This signalized intersection is calculated to operate acceptably overall at LOS C/D in the AM and PM peak hours, respectively. Some left-turn movements are projected to operate at LOS E or F, though all 95th percentile queues are calculated to be well within available storage lengths.

As discussed with the Year 2030 background scenario, widening of the east departure from the intersection is necessary to provide a dedicated eastbound through lane and eastbound dual left-lanes. This would remove the existing eastbound shared left + through lane condition which requires split phasing of the signal, which is highly inefficient and would result in the intersection operating at LOS F in the long-term with background (non-project) traffic growth. This improvement is assumed in place for the Year 2040 background scenario.

Left-turn delays shown at worse than LOS D are due to the protected-only left-turn operation of these movements and is common where a left-turn is protected along a major arterial. As the protected-only operation is due to safety concerns with left-turns across a major, three-lane arterial, no changes are recommended to mitigate these left-turn delays.

- J. Morgan Blvd. & Stroh Road: With the proposed future connection of Pinery Center Blvd. as a collector roadway south of Stroh Road to Scott Road, as well as potential development on the south side of Stroh Road, it is anticipated that a signal will be needed based on background (non-project) traffic that would be anticipated to shift from Parker Road to utilize this connection or access future development at this intersection.

6.0 FUTURE CONDITIONS WITH PINERY WEST DEVELOPMENT

6.1 Trip Generation

A trip generation estimate was performed to determine the traffic characteristics of the Pinery West development. Pinery West proposes to be an employment/commercial area will be a mix of retail, office, restaurants, hotel, recreation, and light industrial. The trip rates contained in the *Institute of Transportation Engineers (ITE) Trip Generation Manual*[4] were applied to estimate the traffic for the proposed land uses:

Specific land uses and tenants for most parcels is unknown at this time and will evolve based on market conditions. Within the existing zoning designations, it is anticipated that there will be variety of commercial uses, offices, flex space, pad retail, restaurants, lodging, day care, recreational and light industrial uses. There is also an RTD park-N-ride and Douglas County School District office proposed on the site. In order to estimate the site auto trips, land use designations within the ITE Trip Generation Manual were utilized. For the majority of commercial/retail land use on the site, the "Shopping Center" (ITE #820) land use category was applied as the data for this land use code is described as follows:

> *Shopping centers, including neighborhood centers, community centers, regional centers, and super regional centers, were surveyed for this land use. Some of these centers contained non-merchandising facilities, such as office buildings, movie theaters, restaurants, post offices, banks, health clubs, and recreational facilities (for example, ice skating rinks or indoor miniature golf courses). Many shopping centers, in addition to the integrated unit of shops in one building or enclosed around a mall, include outparcels (peripheral buildings or pads located on the perimeter of the center adjacent to the streets and major access points). These buildings are typically drive-in banks, retail stores, restaurants, or small offices.*

Given the applicability of the "Shopping Center" land use description to the majority of the site uses, these rates were applied to a large portion of the site. ITE trip generation rates for "General Light Industrial" (#110), "General Office Building" (#710), "Day Care Center" (#565), "Drive Thru Bank" (#912), "Hotel (#310), and "Park-and-Ride with Bus Service" (#090) were also utilized, where applicable.

[4] Trip Generation 10th Edition, Institute of Transportation Engineers, 2017.

The trip generation estimates using these rates are summarized on **Table 2** for the southwest, southeast, and north (main) portions of the site, with Pinery Parkway as the dividing line between these trip generation subareas.

The site is expected to experience the four basic trip types as 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. It is expected that the proposed project will experience most primary trips.

Pass-By Trips. Pass-by trips are those that are already occurring on the adjacent roadway network but will divert into the site to visit a site use, typically retail/restaurant/services. An example would be a vehicle trip already occurring on Parker Road that would turn into the site to visit a bank, but the bank visit was not the primary purpose of the trip. Pass-by trips do not create any increase in the traffic volumes within the primary impact area. 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.

Pass-by was applied to the commercial portions of the Pinery West site. These land uses historically have shown to have pass-by trips as indicated by the national data in the *ITE Trip Generation Handbook*, which are those vehicles that utilize one of the adjacent roadways to travel between their origin and destination and choose to make a stop within the development site before they continue on route. This is not a reduction of trips, but a redirect of existing/background trips that will become a customer of the new businesses. The *ITE Trip Generation Handbook* defines pass-by as "trips made as intermediate stops on the way from an origin to primary trip destination without a route diversion". The pass-by trips percentages used for this analysis are shown on **Table 3.**

Multi-Use (Internal) Trips. These internal trips occur from one land use or building to another within the site boundaries. For example, a person that works in one of the offices may shop in the new retail center or one customer may visit several stores during one visit. Multi-use or multi-purpose trips typically do not affect the exterior site access points, nor add any additional traffic volumes to the adjacent street network. The multi-use factors applied are shown on **Table 2**.

Non-Auto Trips. These trips are those that are completed by walking, bicycling, or riding transit. The existing transit, pedestrian, and bicycle amenities will encourage residents, employees, and customers to make non-auto trips to/from the Pinery West site. The non-auto trips are assumed to be accounted for within the multi-use (internal) trips.

Table 3 provides the trip type breakdown estimate for the Pinery West development, to include both “primary” (unique) and “pass-by” trip types.

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Table 2. Trip Generation Estimate

Land Use	Size	Unit	Multi-Use Factor[1]	Average Daily Trips				A.M. Peak Hour Trips				P.M. Peak Hour Trips			
				Rate	Total	In	Out	Rate	Total	In	Out	Rate	Total	In	Out
South of Pinery Parkway - West															
#565 Day Care Center	12.0	1,000 SF	0.0	47.62	571	286	285	11.00	132	70	62	11.12	133	63	70
#710 General Office Building	17.4	1,000 SF	0.0	9.74	169	85	84	1.16	20	17	3	1.15	20	3	17
South of Pinery Parkway - West - SUBTOTAL					740	371	369		152	87	65		153	66	87
South of Pinery - East															
#820 Shopping Center	5.3	1,000 SF	0.0	Used Fitted Equations	200	100	100	Used Fitted Equations	154	95	59	Used Fitted Equations	62	30	32
#912 Drive Thru Bank	7.0	1,000 SF	0.0	100.03	700	350	350	9.5	67	39	28	20.45	143	71	72
South of Pinery Parkway - East - SUBTOTAL					900	450	450		221	134	87		205	101	104
North of Pinery Parkway															
#820 Shopping Center	532.5	1,000 SF	0.1	Used Fitted Equations	16871	8436	8435	Used Fitted Equations	376	233	143	Used Fitted Equations	1686	809	877
#110 General Light Industrial	169.8	1,000 SF	0.0	Used Fitted Equations	702	351	351	Used Fitted Equations	66	58	8	Used Fitted Equations	53	7	46
#310 Hotel	150	Occupied Rooms	0.1	12.23	1651	826	825	0.62	84	49	35	0.73	99	49	50
#565 Day Care Center	12.0	1,000 SF	0	47.62	571	286	285	11.00	132	70	62	11.12	133	63	70
#710 General Office Building	50.0	1,000 SF	0.0	9.74	487	244	243	1.16	58	50	8	1.15	58	9	49
#090 Park-and-Ride with Bus Service	150	Parking Spaces	0	2.81	422	211	211	0.42	63	50	13	0.43	65	16	49
North of Pinery Parkway - SUBTOTAL					20704	10354	10350		779	510	269		2094	953	1141
TOTAL PROJECT					22344	11175	11169		1152	731	421		2452	1120	1332

Source: ITE Trip Generation 10th Edition. 2017.

[1] Accounts for auto and non-auto multi-use trips between two or more uses on site (ie: someone visits a coffee shop on their way to their office or walks to a restaurant from work for lunch, thus only one unique auto trip to the site was generated in these instances). This is separate from the internal trip distribution, which is a unique auto trip with an origin and destination within the site. Neither results in a new, unique auto trip to the external area roadway network.

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Table 3. Trip Type Breakdown

Land Use	Trip Type %[1]		PRIMARY Trips						PASS-BY Trips					
	Primary	Pass-By	Daily In	Daily Out	AM In	AM Out	PM In	PM Out	Daily In	Daily Out	AM In	AM Out	PM In	PM Out
South of Pinery Parkway - West														
#565 Day Care Center	100%	0%	286	285	70	62	63	70	0	0	0	0	0	0
#710 General Office Building	100%	0%	85	84	17	3	3	17	0	0	0	0	0	0
South of Pinery Parkway - West - SUBTOTAL			**371**	**369**	**87**	**65**	**66**	**87**	**0**	**0**	**0**	**0**	**0**	**0**
South of Pinery - East														
#820 Shopping Center	66%	34%	66	66	63	39	20	21	34	34	32	20	10	11
#912 Drive Thru Bank	70%	30%	245	245	27	20	50	50	105	105	12	8	21	22
South of Pinery Parkway - East - SUBTOTAL			**311**	**311**	**90**	**59**	**70**	**72**	**139**	**139**	**44**	**28**	**32**	**32**
North of Pinery Parkway														
#820 Shopping Center	66%	34%	5568	5567	154	94	534	579	2868	2868	79	49	275	298
#110 General Light Industrial	100%	0%	351	351	58	8	7	46	0	0	0	0	0	0
#310 Hotel	100%	0%	826	825	49	35	49	50	0	0	0	0	0	0
#565 Day Care Center	100%	0%	286	285	70	62	63	70	0	0	0	0	0	0
#710 General Office Building	100%	0%	244	243	50	8	9	49	0	0	0	0	0	0
#090 Park-and-Ride with Bus Service	100%	0%	211	211	50	13	16	49	0	0	0	0	0	0
North of Pinery Parkway - SUBTOTAL			**7486**	**7482**	**431**	**220**	**678**	**843**	**2868**	**2868**	**79**	**49**	**275**	**298**
TOTAL PROJECT			**8168**	**8162**	**608**	**344**	**813**	**1001**	**3007**	**3007**	**123**	**77**	**307**	**331**

Source: ITE Trip Generation Handbook, 10th Edition. 2017.

[1] Per ITE average data for each land use or comparable land use.

6.2 Trip Distribution and Assignment

The estimated trip volumes were distributed onto the study area street network based on existing traffic characteristics, land uses, and traffic patterns in the area, as well as regional growth and future roadway infrastructure. The overall assumed distribution percentages are listed below with and without the future extensions of Pinery Parkway to the west and Pinery Center Boulevard to the north:

Without Connections:

- 55% to/from north Parker Road north of Stroh Road
- 30% to/from south Parker Road
- 3% to/from west Stroh Road
- 2% to/from north J. Morgan Boulevard
- 0% to/from west Pinery Parkway
- 5% to/from east Pinery Parkway
- 5% internal capture

With Connections:

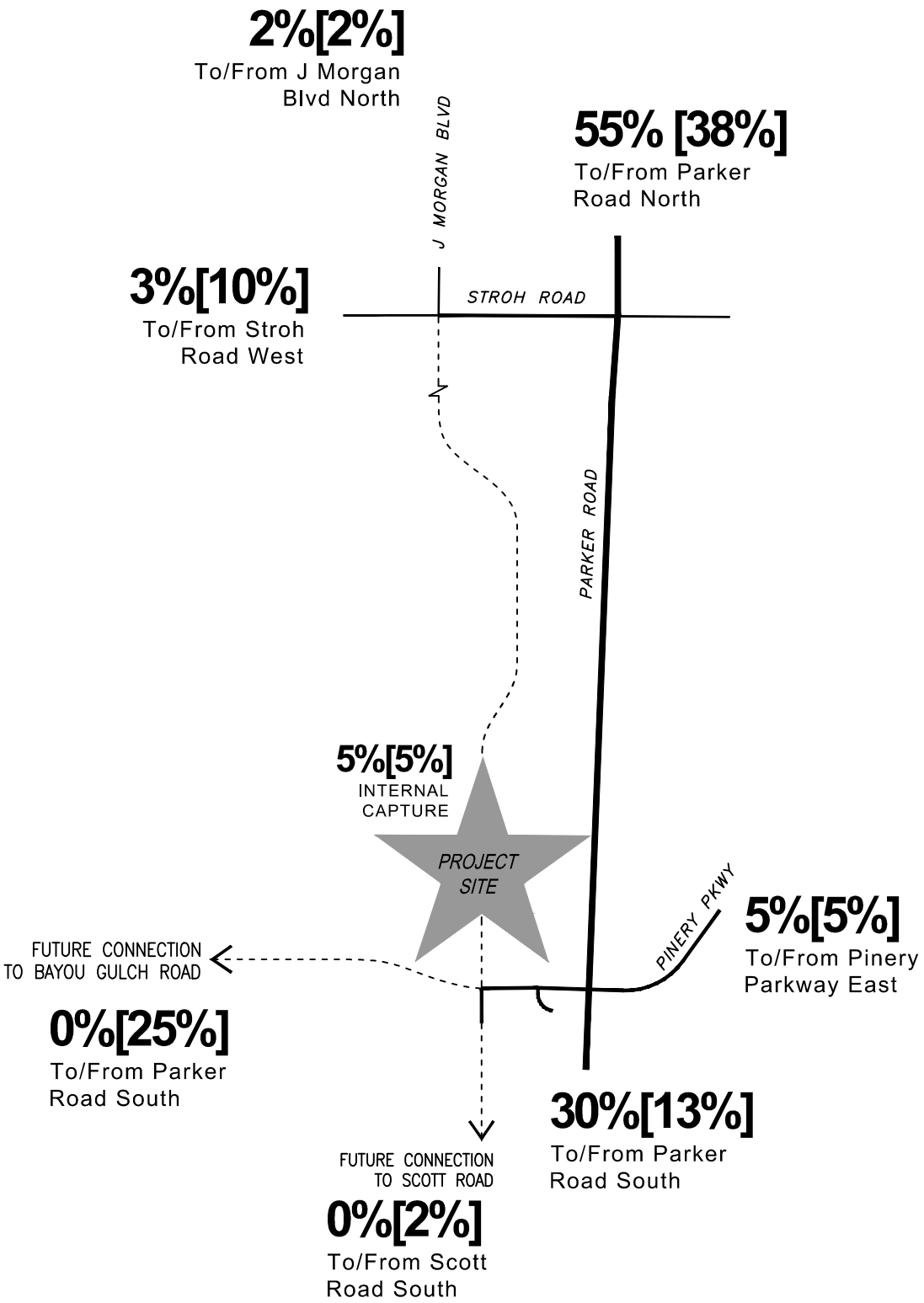
- 38% to/from north Parker Road north of Stroh Road
- 13% to/from south Parker Road
- 10% to/from west Stroh Road
- 2% to/from north J. Morgan Boulevard to Stroh Road
- 2% to/from south Pinery Center Boulevard to Scott Road
- 25% to/from west Pinery Parkway
- 5% to/from east Pinery Parkway
- 5% internal capture

Figure 7 summarizes the trip distribution assumptions. Using these distribution assumptions, the projected site traffic was assigned to the study area roadway network for the weekday AM and PM peak hours. In Year 2030 with project build out, it is assumed that Pinery Parkway and Pinery Center Boulevard are not extended. These connections are assumed to be in place in the long-term, Year 2040 scenario. The site-generated volumes without the new roadway connections are shown on **Figure 8** and the site-generated volumes with the new roadway connections are shown on **Figure 9.**

KEY

XX% DISTRIBUTION WITHOUT CONNECTIONS

[XX%] DISTRIBUTION WITH CONNECTIONS

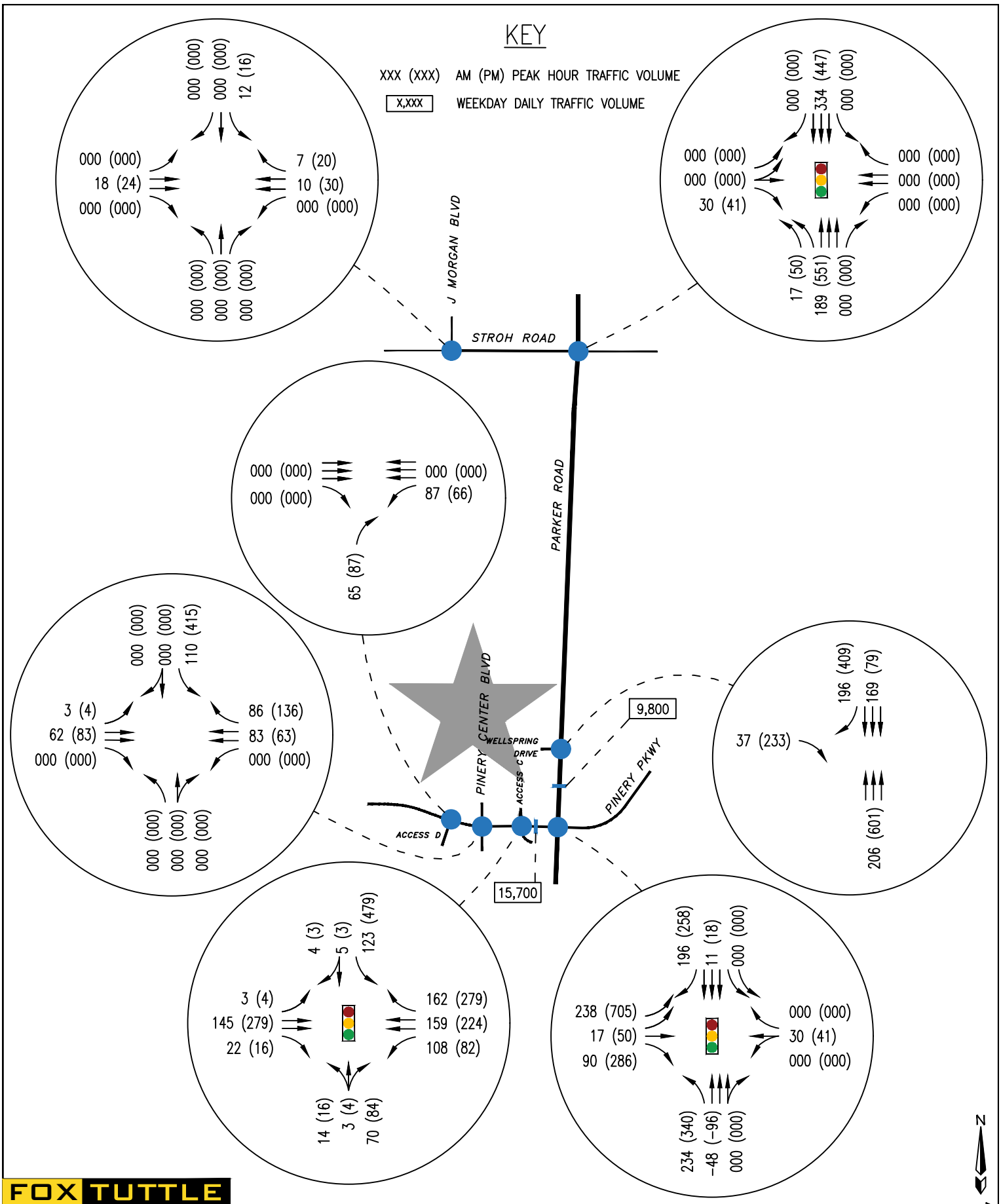


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PINERY WEST TRAFFIC IMPACT STUDY UPDATE

SITE TRIP DISTRIBUTION

FT #	20049	Filing	03 Minor Development	Original Scale	NTS	Date	7/30/20	Drawn by	SGT	Figure #	7

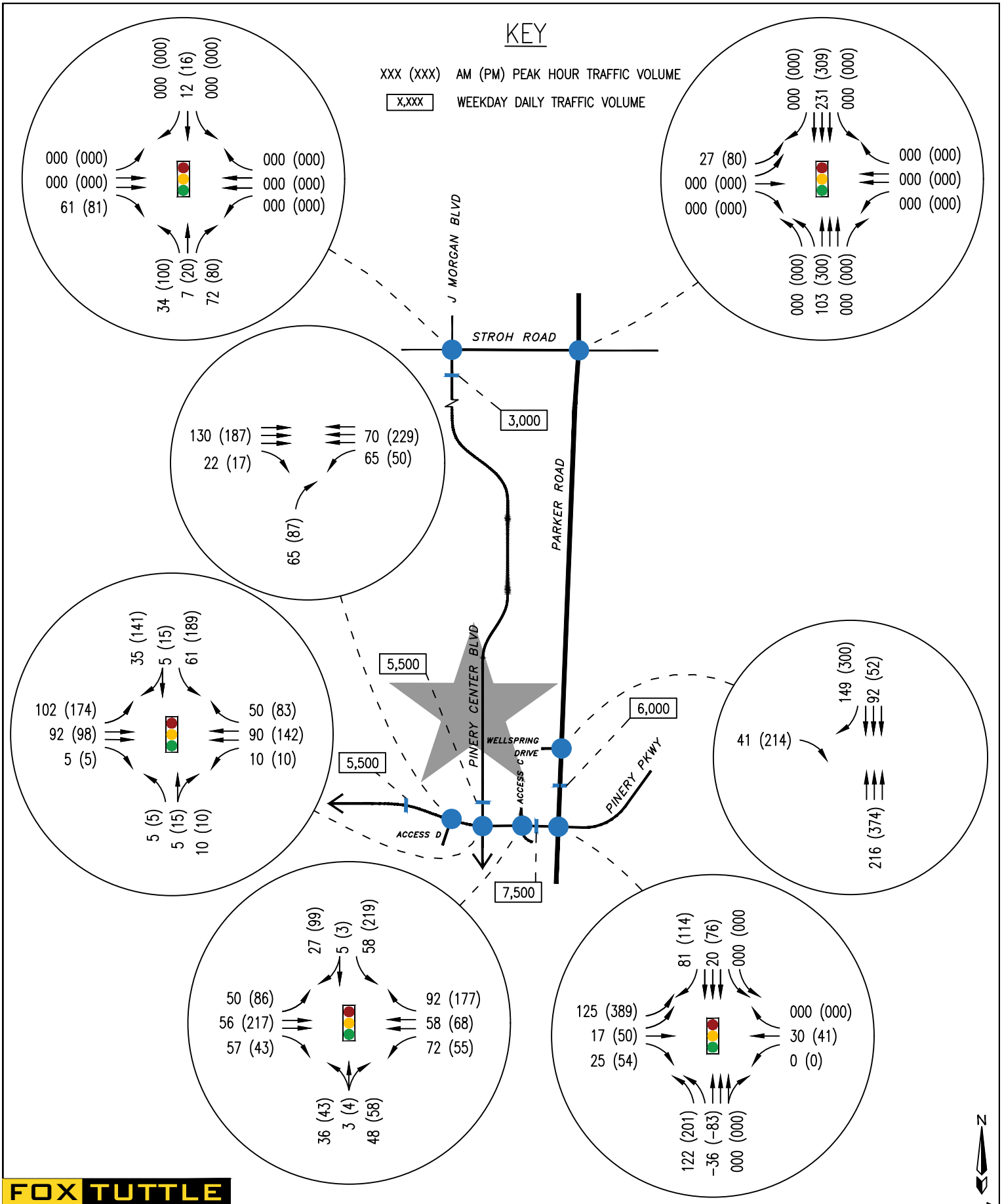


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PINERY WEST TRAFFIC IMPACT STUDY UPDATE

SITE-GENERATED TRAFFIC VOLUMES (WITHOUT CONNECTIONS)

FT #	20049	Filing	03 Minor Development	Graphical Scale	NTS	Date	7/30/20	Drawn by	SGT	Figure #	8



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PINERY WEST TRAFFIC IMPACT STUDY UPDATE

SITE-GENERATED TRAFFIC VOLUMES (WITH CONNECTIONS)

FT #	20049	Original Scale	NTS	Date	7/30/20	Drawn by	SGT	Figure #	9

6.2.1 Year 2030 Background + Project Intersection Capacity Analysis

This section discusses impacts associated with the addition of the Pinery West development trips in the build out scenario with the project fully built out and fully occupied.

The projected 2030 background volumes were added to the site-generated volumes and are illustrated on **Figure 10**. This figure also illustrates the necessary traffic control and lane configurations for all of the proposed accesses. The results of the LOS calculations for the intersections are summarized on **Table 1A** and **Table 1B** (signalized and stop-controlled, respectively). The intersection level of service worksheets and queue reports are attached in the **Appendix**.

As shown on the Level of Service summary tables, all study area intersections are projected to operate acceptably overall (LOS D or better) and with the following improvements in place prior to full build out and site occupancy:

- Parker Road & N. Pinery Parkway:
    - Construct a 2nd northbound left-turn lane. This improvement is necessary to due to the projected high PM peak left-turn volumes vs. a high volume of southbound through traffic on Parker Road in the PM peak hour, which compete for allocation of the available cycle length. Roughly half of the projected left-turn volume is due to background traffic that is anticipated to shift to the Pinery Parkway extension. The width in the existing median is available to create this lane. This lane should be built to CDOT Access Code standards (see Section 7.0 for dimensions). The existing raised median on the west leg is planned to be narrowed to 4' to provide the width for a second accepting lane for the dual left-turn.
    - Reconfigure the westbound approach to include a new, exclusive westbound left-turn lane exiting the Pinery (cut into the existing median), with the existing left+through lane reconfigured as the westbound through lane and the existing westbound right-turn lane to remain as is. This will allow for more capacity for the westbound approach to address both existing and future capacity constraints.
- Pinery Parkway & Access C:
    - Install a traffic signal. The signal is warranted based on the projected volumes and is necessary to allow the intersection to operate at acceptable Levels of Service in at full build out and occupancy.

As shown on **Table 1A** and **Table 1B**, some individual movements are anticipated to operate at LOS E or F in the peak hours with short-term build out of the site that were not operating at this level with background conditions.

Some additional notes relative to the Year 2030, project build out capacity and queuing analysis are as follows:

- As shown on the queue reports, the 95th-percentile queues for the eastbound approach at the Parker Road & Pinery Parkway intersection are not shown to extend west to the Access C intersection.

- At Access C & Pinery Parkway, in the PM peak hour the southbound left-turn is anticipated to experience a 50%-percentile queue of 250' and a 95%-percentile queue of 481' (roughly 19 vehicles) and will operate acceptably at LOS D. Future site access and site design along Access C to the north should anticipate queue extending north up to this distance from Pinery Parkway.

- At Pinery Center Boulevard & Pinery Parkway, in the PM peak hour the southbound left-turn is anticipated to experience a 95th-percentile queue of roughly 5 vehicles. The southbound approach will operate acceptable at LOS C.

6.2.2 Year 2040 Background + Project Intersection Capacity Analysis

This section discusses impacts associated with the addition of the Pinery West development trips in the long-term, 20-year scenario with full build out and occupancy of the project.

The site-generated volumes were added to the projected 2040 background volumes and are illustrated on **Figure 11**. For the Year 2040 site build out scenario, the Pinery Parkway west connection and Pinery Center Blvd. connection are assumed to be constructed.

The results of the LOS calculations for the intersections are summarized in **Table 1A** and **Table 1B** (signalized and stop-controlled, respectively). The intersection level of service worksheets and queue reports are attached in the **Appendix**.

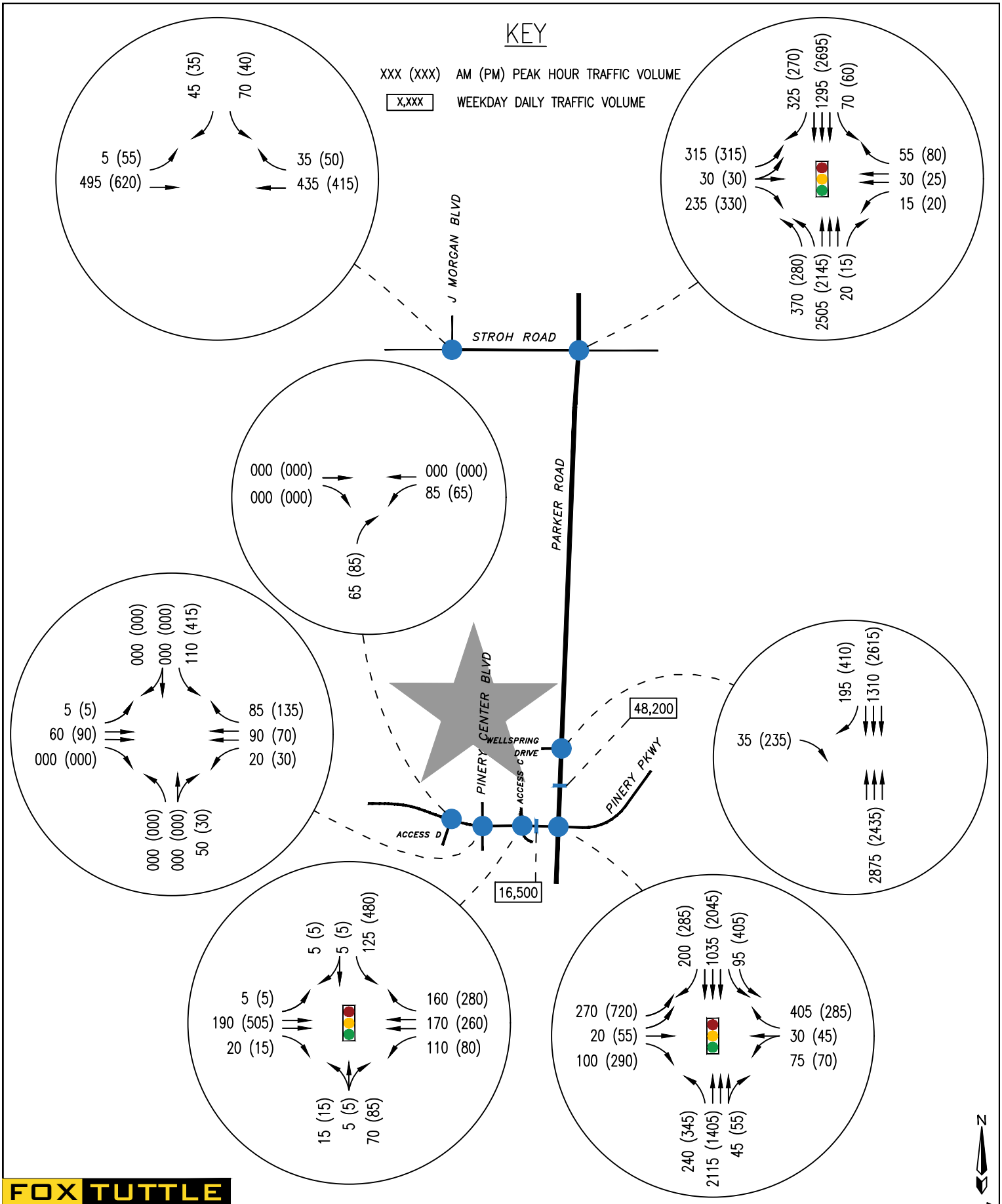
As shown on the Level of Service summary tables, all study area intersections are projected to operate acceptably overall (LOS D or better) and with the improvements identified in Section 6.2.1 in place, as well as the following long-term improvements:

- Pinery Parkway & J. Morgan Blvd.:
    - Install a traffic signal, when warranted. This signal may be needed to allow the intersection to operate at acceptable Levels of Service in the long-term planning scenario. The need for this signal will be dependent on background traffic shifts to Pinery Center Blvd. if connected from Stroh Road to Scott Road (as anticipated by the County), background traffic shifts to Pinery Parkway west of Parker Road when the connection to the west is in place, project traffic growth, and additional developments in the area that will utilize the Pinery Center Blvd. extension for access.

Some additional notes relative to the long-term, project build out capacity and queuing analysis are as follows:

- As shown on the queue reports, the 95th-percentile queues for the eastbound approach at the Parker Road & Pinery Parkway intersection are not shown to extend west to the Access C intersection.

Traffic signal warrant analysis was performed using criteria contained in the Manual on Uniform Traffic Control Devices (MUTCD). For planning-level purposes, the Peak Hour Signal Warrant was applied to this project since only peak hour volumes are projected for future development using ITE rates. The signal warrant analysis is summarized on **Figure 11**.

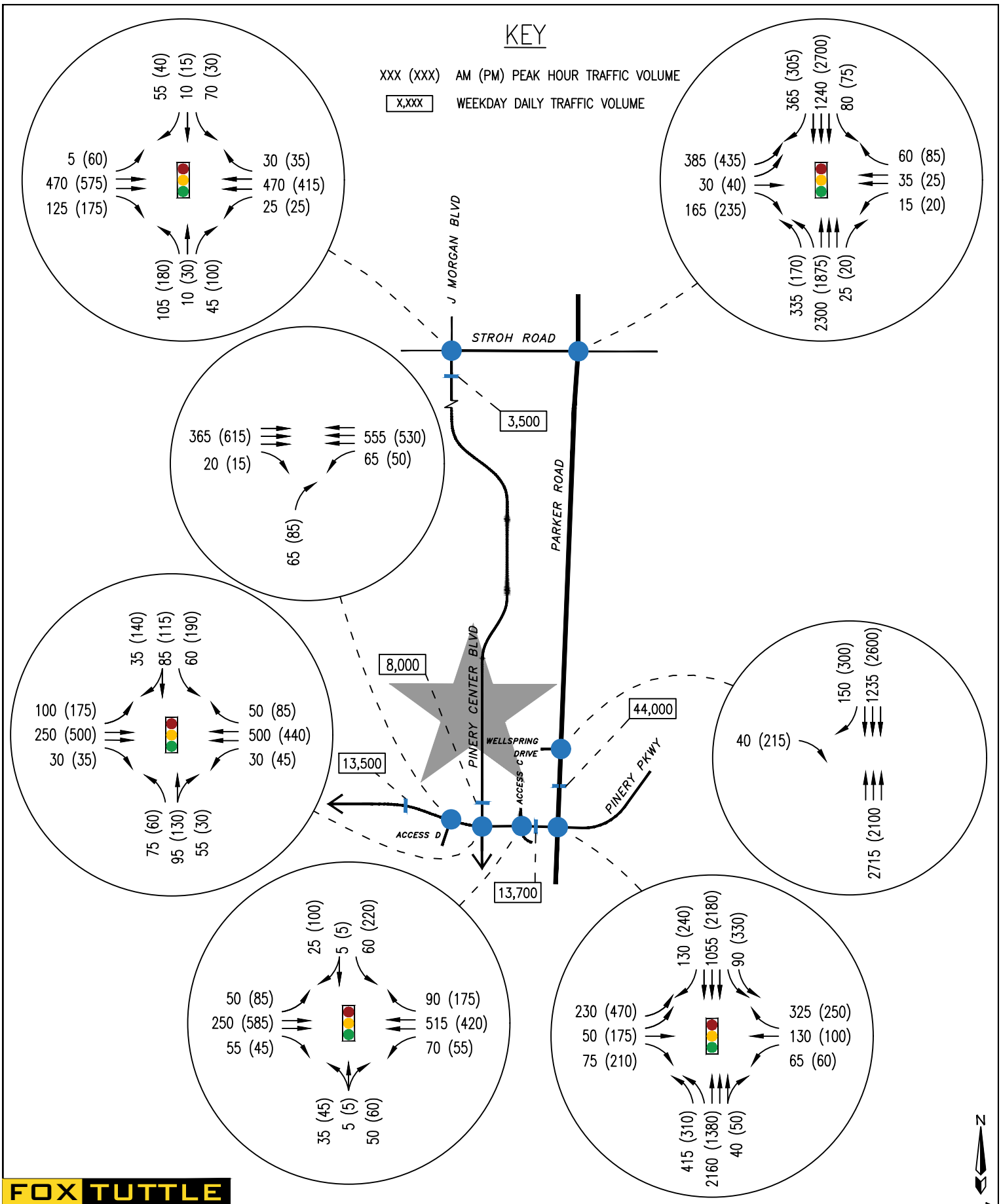


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PINERY WEST TRAFFIC IMPACT STUDY UPDATE

YEAR 2030 TOTAL TRAFFIC VOLUMES

FT #	20049	Engineer	DS/MJ	Date	7/30/20	Drawn by	SGT	Figure #	10



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PINERY WEST TRAFFIC IMPACT STUDY UPDATE

YEAR 2040 TOTAL TRAFFIC VOLUMES

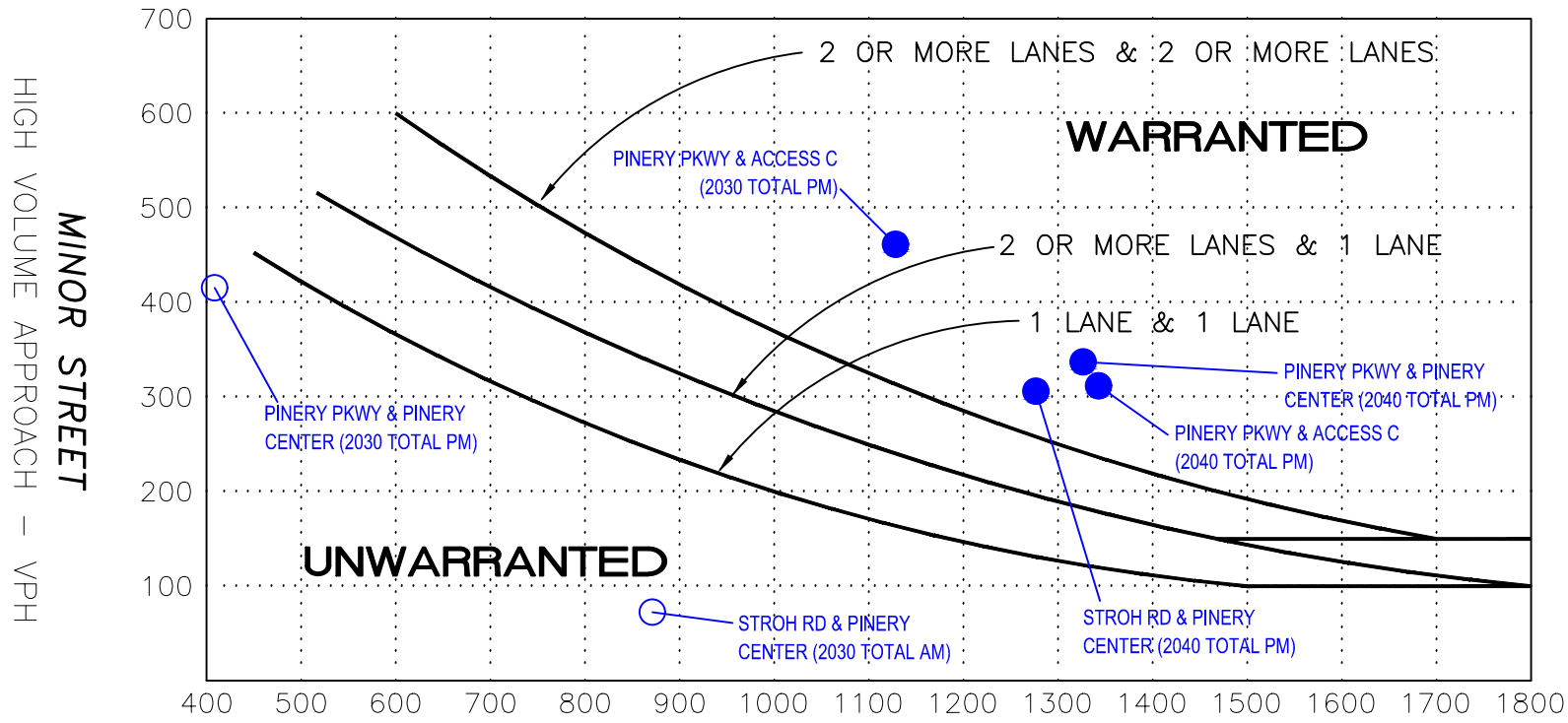
FT #	20049	Original Scale	NTS	Date	7/30/20	Drawn by	SGT	Figure #	11

PEAK HOUR VOLUME WARRANT

KEY

● = VOLUME EXCEEDS WARRANT THRESHOLD

○ = VOLUME DOES NOT EXCEED WARRANT THRESHOLD



NOTE: THE HIGHEST VOLUME PEAK HOUR IS SHOWN FOR EACH PLANNING HORIZON/SCENARIO

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.

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PINERY WEST TRAFFIC IMPACT STUDY
PEAK HOUR SIGNAL WARRANT

FT Project #	20049	Original Scale	NTS	Date	7/30/20	Drawn by	SGT	Figure #	12

7.0 AUXILIARY LANE EVALUATION

Auxiliary lanes were evaluated using the Level of Service results, queuing results, and auxiliary lane designs consistent with the State Highway Access Code for each roadway category and posted speed and based on an assume 12' lane width.

Direct access to the site is planned via the following access points:

- Access B: Right-In, right-out restricted access along Parker Road
- Access C: Full-movement, signalized access
- Pinery Center Blvd. at Pinery Parkway

All of these intersections are either fully or partially built today, with some existing auxiliary lanes in place that can remain. New or modified auxiliary lanes to be constructed with the project are summarized as follows for the short-term and long-term planning horizons:

- Access B & Parker Road (with Initial Development):
    - Southbound right-turn deceleration lane (378' lane + 222' taper, 600' total length)
    - Southbound right-turn acceleration lane (tie into the existing southbound right-turn deceleration lane approaching N. Pinery Parkway, approximately 370' south of Access B)
- Parker Road and Pinery Parkway (Short-Term):
    - Second northbound left-turn lane (build parallel to the existing 600' total lane length)
- Parker Road and Pinery Parkway (Long-Term):
    - New eastbound left-turn lane (110' lane + 60' taper)

8.0 CONCLUSIONS

The Pinery West project proposes to construct a mix of employment, commercial, and light industrial uses on a largely vacant 144± acre property. Based on conceptual site planning, it is anticipated that there will be a grocery marketplace, office space, flex office space, commercial plats for shops, restaurants, and services, daycare services, a hotel, RTD park-n-ride station, recreational space, and light industrial uses.

The project proposes to have two full-movement accesses on N. Pinery Parkway, a ¾-movement access along N. Pinery Parkway, and a right-in, right-out access on Parker Road. The curb-cuts on Pinery Parkway already exist and will be extended into the subject property to service the proposed land uses. In the short-term, trips from the Pinery West project will travel along Parker Road to get to/from their regional destinations. In the long-term, Pinery Parkway is anticipated to be extended to the west to Crowfoot Valley Road and Pinery Center Boulevard is anticipated to be extended to the north to Stroh Road and south to Scott Road (pending other development).

The project is anticipated to generate approximately 22,344 daily, 1,152 AM peak hour and 2,452 PM peak hour driveway trips at buildout within the site. Approximately 16,330 daily, 952 AM and 1,814 PM trips are projected to be unique (new) trips within the study area that are not already traveling on the adjacent roadway network.

It was determined that the existing and proposed roadway and intersection can adequately accommodate the projected traffic volumes for buildout conditions.

The following mitigation measures are recommended:

Recommended Background Improvements (Not Related to Project):

These improvements are recommended to mitigate existing and future background deficiencies (with non-project traffic) and would need to be implemented by the County, CDOT, or other developer(s) to mitigate non-project traffic impacts independent of development of the project site:

- Parker Road & N. Pinery Parkway:
    - Add a northbound right-turn acceleration lane on Parker Road to create a "free right" turn condition to mitigate existing and projected future delays for traffic exiting the Pinery in the AM peak hour
    - Add a northbound right-turn deceleration lane on Parker Road approaching N. Pinery Parkway to mitigate projected delays for northbound traffic in the long-term
- Parker Road & Stroh Road:
    - Widen the east departure from the intersection to provide a dedicated westbound through lane and westbound dual left-lanes. This would remove

the existing westbound shared left + through lane condition which requires split phasing of the signal and allow the intersection to operate more effectively to service long-term background traffic growth projections. This should be accomplished with development of the southeast corner of this intersection which may also need to provide right-of-way to accommodate the widening.

- Stroh Road & J. Morgan Blvd.: Install a traffic signal, if warranted (long-term, with extension of Pinery Center Blvd. to Pinery Parkway and ultimately south to Scott Road). The need for this signal will be dependent on background traffic shifts to Pinery Center Blvd. as a local alternative to Parker Road for north-south travel, background traffic shifts to Pinery Parkway west of Parker Road when the connection to the west is in place, project traffic growth, and additional developments adjacent to the intersection that will utilize the Pinery Center Blvd. extension for access.

Recommended Project-Related Improvements

These improvements are recommended to be in place by either project build out and full occupancy (Year 2030) or the long-term, 20-year planning horizon (Year 2040):

- Parker Road & N. Pinery Parkway:
    - Construct a 2nd northbound left-turn lane (installed by project build out, assumed Year 2030). The need for this lane is for project traffic accessing the site from Parker Road to the south, as well as projected long-term background (non-project) growth and a shift of traffic from Parker Road when the Pinery Parkway connection to the west is in place. This improvement will require narrowing of the existing raised median to create the 2nd accepting land on the westbound departure.
    - Add a new eastbound left-turn lane (cut into the existing median on the east leg) and reconfigure the existing westbound left+through lane as a through lane. The need for these improvements is to provide adequate level of service for motorists exiting The Pinery when the project is fully built and occupied, as well as to mitigate existing deficiencies (primarily the existing westbound right-turn delays that are incurred by the existing lane geometry and lack of a right-turn acceleration lane onto northbound Parker Road).

- Pinery Parkway & Access C: Install a traffic signal (installed by project build out, assumed in Year 2030).

- Pinery Parkway & Pinery Center Blvd.: Install a traffic signal, if warranted (long-term, with extension of Pinery Center Blvd. to Stroh Road). The need for this signal will be dependent on background traffic shifts to Pinery Center Blvd. as a local alternative to Parker Road for north-south travel, background traffic shifts to Pinery Parkway west of Parker Road when the connection to the west is in place, project traffic growth, and additional developments in the area that will utilize the Pinery Center Blvd. extension for access.
- Parker Road & Access B: Construct southbound right-turn deceleration and southbound acceleration lanes.

Appendix:

Existing Traffic Data

Level of Service Definitions

Intersection Capacity Worksheets and Time-Space (Progression) Diagrams

Existing Traffic Data

RDC
Ridgeview Data Collection

Parker, CO
Pinery West
AM Peak
Parker Rd and Pinery Parkway

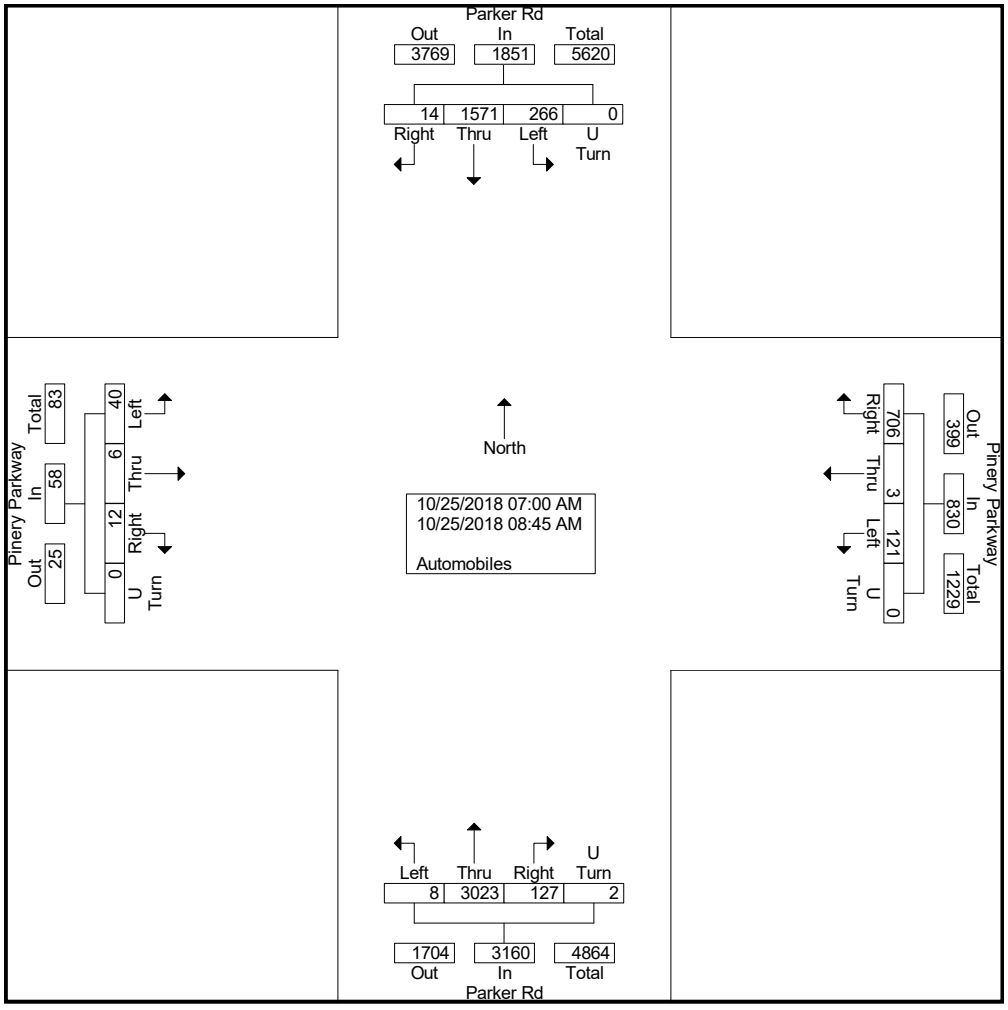
File Name : Parker and Pinery AM
Site Code : IPO 25
Start Date : 10/25/2018
Page No : 1

Groups Printed- Automobiles

	Pinery Parkway Eastbound					Pinery Parkway Westbound					Parker Rd Northbound					Parker Rd Southbound					
Start Time	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Int. Total
07:00 AM	10	1	0	0	11	14	0	80	0	94	1	392	2	0	395	17	223	1	0	241	741
07:15 AM	3	0	2	0	5	10	0	101	0	111	0	499	10	0	509	11	188	2	0	201	826
07:30 AM	11	2	1	0	14	21	0	112	0	133	2	518	14	1	535	31	212	0	0	243	925
07:45 AM	3	1	3	0	7	27	1	102	0	130	0	402	18	1	421	33	235	0	0	268	826
Total	27	4	6	0	37	72	1	395	0	468	3	1811	44	2	1860	92	858	3	0	953	3318
08:00 AM	5	0	2	0	7	31	0	83	0	114	1	330	24	0	355	49	197	3	0	249	725
08:15 AM	4	1	2	0	7	8	1	86	0	95	2	295	6	0	303	38	185	1	0	224	629
08:30 AM	3	1	2	0	6	6	0	69	0	75	0	275	18	0	293	39	171	4	0	214	588
08:45 AM	1	0	0	0	1	4	1	73	0	78	2	312	35	0	349	48	160	3	0	211	639
Total	13	2	6	0	21	49	2	311	0	362	5	1212	83	0	1300	174	713	11	0	898	2581
Grand Total	40	6	12	0	58	121	3	706	0	830	8	3023	127	2	3160	266	1571	14	0	1851	5899
Apprch %	69	10.3	20.7	0		14.6	0.4	85.1	0		0.3	95.7	4	0.1		14.4	84.9	0.8	0		
Total %	0.7	0.1	0.2	0	1	2.1	0.1	12	0	14.1	0.1	51.2	2.2	0	53.6	4.5	26.6	0.2	0	31.4	

Parker, CO
Pinery West
AM Peak
Parker Rd and Pinery Parkway

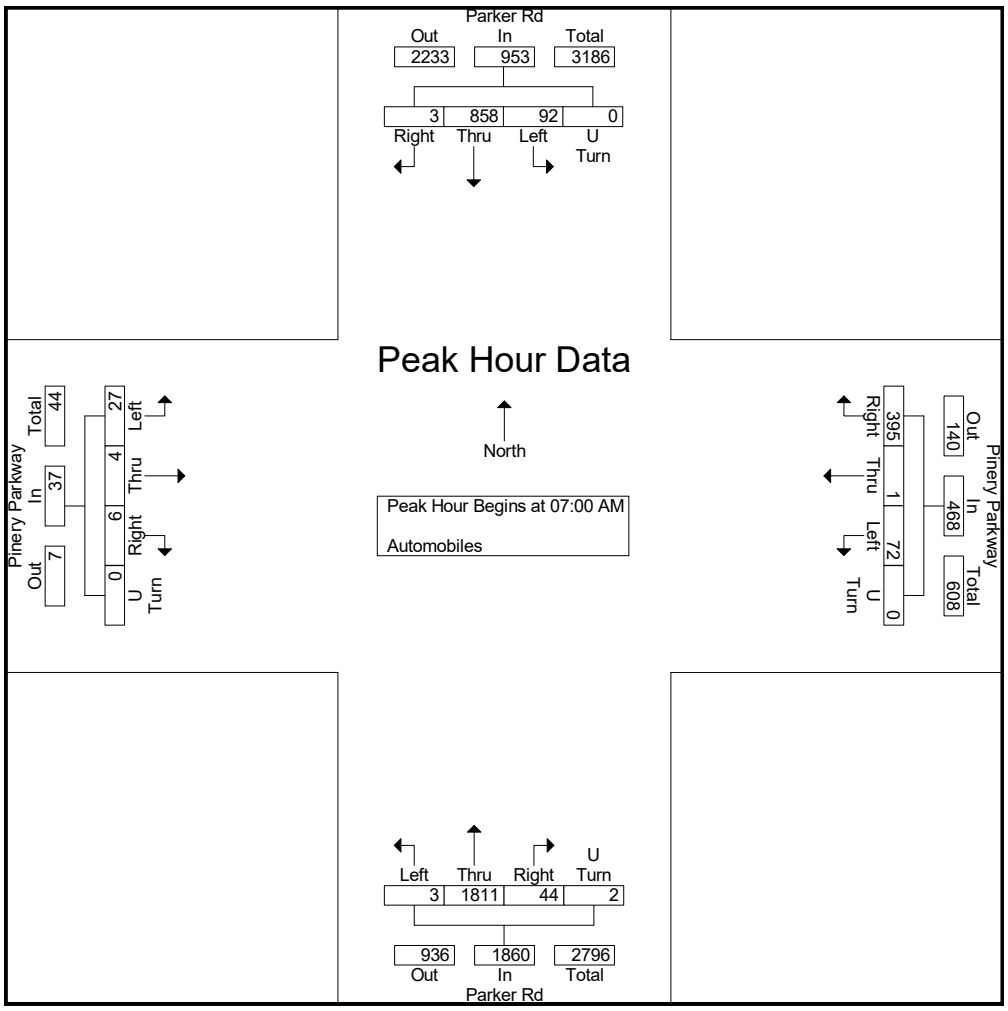
File Name : Parker and Pinery AM
Site Code : IPO 25
Start Date : 10/25/2018
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Parker, CO
Pinery West
AM Peak
Parker Rd and Pinery Parkway

File Name : Parker and Pinery AM
Site Code : IPO 25
Start Date : 10/25/2018
Page No : 3

	Pinery Parkway Eastbound					Pinery Parkway Westbound					Parker Rd Northbound					Parker Rd Southbound					
Start Time	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	10	1	0	0	11	14	0	80	0	94	1	392	2	0	395	17	223	1	0	241	741
07:15 AM	3	0	2	0	5	10	0	101	0	111	0	499	10	0	509	11	188	**2**	0	201	826
07:30 AM	**11**	**2**	1	0	**14**	21	0	**112**	0	**133**	**2**	**518**	14	**1**	**535**	31	212	0	0	243	**925**
07:45 AM	3	1	**3**	0	7	**27**	**1**	102	0	130	0	402	**18**	1	421	**33**	**235**	0	0	**268**	826
Total Volume	27	4	6	0	37	72	1	395	0	468	3	1811	44	2	1860	92	858	3	0	953	3318
% App. Total	73	10.8	16.2	0		15.4	0.2	84.4	0		0.2	97.4	2.4	0.1		9.7	90	0.3	0		
PHF	.614	.500	.500	.000	.661	.667	.250	.882	.000	.880	.375	.874	.611	.500	.869	.697	.913	.375	.000	.889	.897



RDC
Ridgeview Data Collection

Parker, CO
Pinery West
PM Peak
Parker Rd and Pinery Parkway

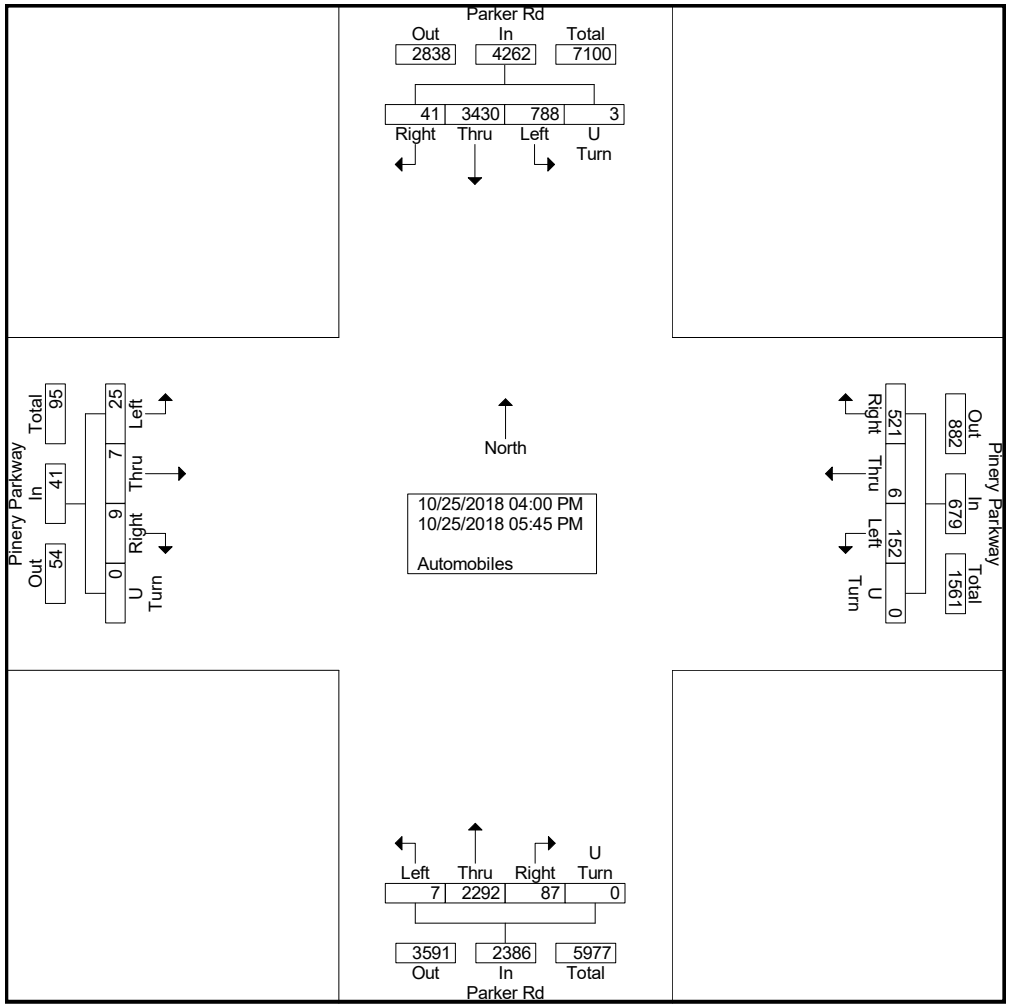
File Name : Parker and Pinery PM
Site Code : IPO 25
Start Date : 10/25/2018
Page No : 1

Groups Printed- Automobiles

	Pinery Parkway Eastbound					Pinery Parkway Westbound					Parker Rd Northbound					Parker Rd Southbound					
Start Time	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Int. Total
04:00 PM	3	2	4	0	9	50	3	86	0	139	0	254	7	0	261	77	390	3	1	471	880
04:15 PM	2	1	1	0	4	19	1	73	0	93	0	284	12	0	296	100	417	3	2	522	915
04:30 PM	6	2	3	0	11	14	0	63	0	77	2	324	13	0	339	109	403	12	0	524	951
04:45 PM	4	0	0	0	4	12	1	64	0	77	3	342	12	0	357	90	439	1	0	530	968
Total	15	5	8	0	28	95	5	286	0	386	5	1204	44	0	1253	376	1649	19	3	2047	3714
05:00 PM	0	0	0	0	0	23	0	67	0	90	0	306	16	0	322	103	436	6	0	545	957
05:15 PM	3	2	0	0	5	20	0	56	0	76	2	259	7	0	268	90	462	9	0	561	910
05:30 PM	6	0	1	0	7	11	1	55	0	67	0	271	10	0	281	99	454	3	0	556	911
05:45 PM	1	0	0	0	1	3	0	57	0	60	0	252	10	0	262	120	429	4	0	553	876
Total	10	2	1	0	13	57	1	235	0	293	2	1088	43	0	1133	412	1781	22	0	2215	3654
Grand Total	25	7	9	0	41	152	6	521	0	679	7	2292	87	0	2386	788	3430	41	3	4262	7368
Apprch %	61	17.1	22	0		22.4	0.9	76.7	0		0.3	96.1	3.6	0		18.5	80.5	1	0.1		
Total %	0.3	0.1	0.1	0	0.6	2.1	0.1	7.1	0	9.2	0.1	31.1	1.2	0	32.4	10.7	46.6	0.6	0	57.8	

Parker, CO
Pinery West
PM Peak
Parker Rd and Pinery Parkway

File Name : Parker and Pinery PM
Site Code : IPO 25
Start Date : 10/25/2018
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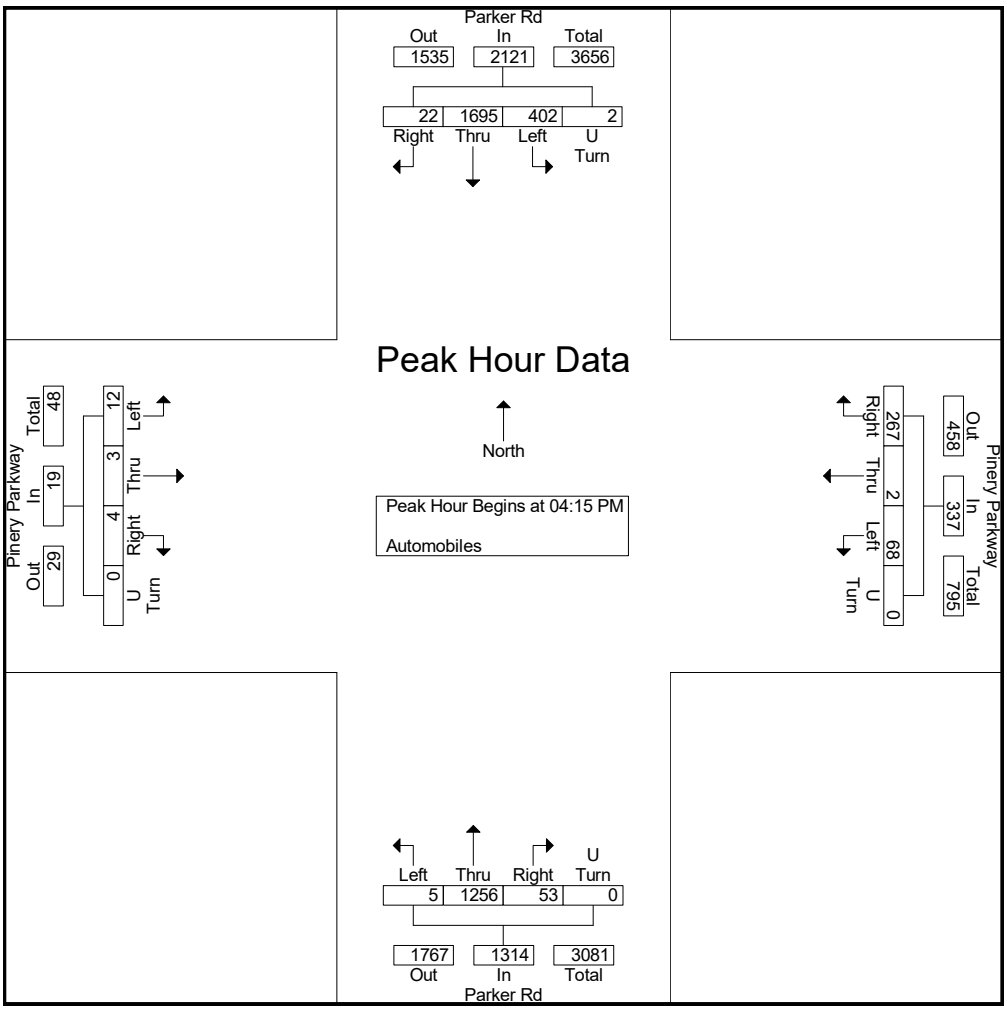


RDC
Ridgeview Data Collection

Parker, CO
Pinery West
PM Peak
Parker Rd and Pinery Parkway

File Name : Parker and Pinery PM
Site Code : IPO 25
Start Date : 10/25/2018
Page No : 3

	Pinery Parkway Eastbound					Pinery Parkway Westbound					Parker Rd Northbound					Parker Rd Southbound					
Start Time	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	2	1	1	0	4	19	**1**	**73**	0	**93**	0	284	12	0	296	100	417	3	**2**	522	915
04:30 PM	**6**	**2**	**3**	0	**11**	14	0	63	0	77	2	324	13	0	339	**109**	403	**12**	0	524	951
04:45 PM	4	0	0	0	4	12	1	64	0	77	**3**	**342**	12	0	**357**	90	**439**	1	0	530	**968**
05:00 PM	0	0	0	0	0	**23**	0	67	0	90	0	306	**16**	0	322	103	436	6	0	**545**	957
Total Volume	12	3	4	0	19	68	2	267	0	337	5	1256	53	0	1314	402	1695	22	2	2121	3791
% App. Total	63.2	15.8	21.1	0		20.2	0.6	79.2	0		0.4	95.6	4	0		19	79.9	1	0.1		
PHF	.500	.375	.333	.000	.432	.739	.500	.914	.000	.906	.417	.918	.828	.000	.920	.922	.965	.458	.250	.973	.979



RDC
Ridgeview Data Collection

Parker, CO
Pinery West
AM Peak
Parker Rd and Stroh Rd

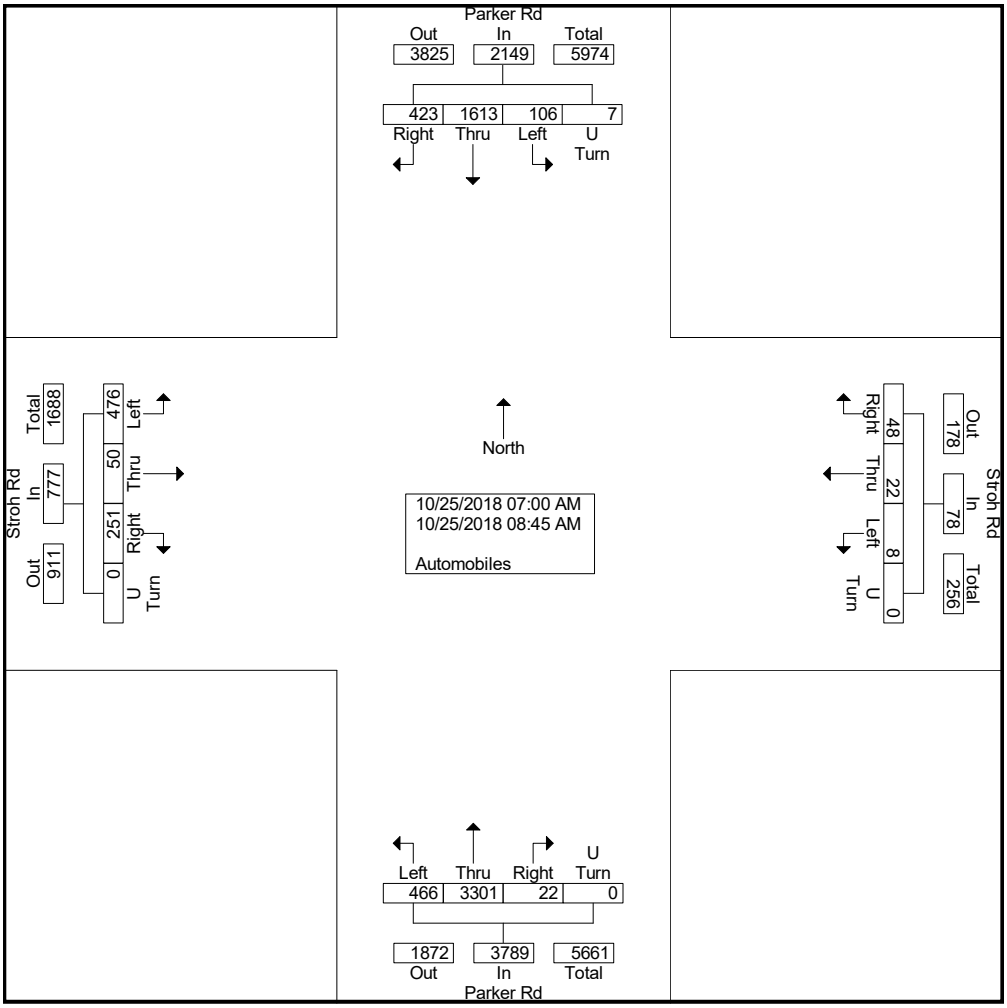
File Name : Parker and Stroh AM
Site Code : IPO 25
Start Date : 10/25/2018
Page No : 1

Groups Printed- Automobiles

	Stroh Rd Eastbound					Stroh Rd Westbound					Parker Rd Northbound					Parker Rd Southbound					
Start Time	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Int. Total
07:00 AM	42	6	45	0	93	0	0	5	0	5	49	443	3	0	495	11	197	48	0	256	849
07:15 AM	47	4	28	0	79	2	2	3	0	7	67	535	2	0	604	13	186	50	1	250	940
07:30 AM	84	5	53	0	142	2	5	8	0	15	81	554	4	0	639	11	216	85	1	313	1109
07:45 AM	91	10	44	0	145	0	6	3	0	9	102	404	4	0	510	9	203	87	0	299	963
Total	264	25	170	0	459	4	13	19	0	36	299	1936	13	0	2248	44	802	270	2	1118	3861
08:00 AM	77	6	30	0	113	1	1	8	0	10	57	357	2	0	416	10	197	41	1	249	788
08:15 AM	49	9	15	0	73	0	4	8	0	12	35	352	4	0	391	17	214	38	0	269	745
08:30 AM	34	5	18	0	57	0	1	5	0	6	41	316	1	0	358	13	206	42	1	262	683
08:45 AM	52	5	18	0	75	3	3	8	0	14	34	340	2	0	376	22	194	32	3	251	716
Total	212	25	81	0	318	4	9	29	0	42	167	1365	9	0	1541	62	811	153	5	1031	2932
Grand Total	476	50	251	0	777	8	22	48	0	78	466	3301	22	0	3789	106	1613	423	7	2149	6793
Apprch %	61.3	6.4	32.3	0		10.3	28.2	61.5	0		12.3	87.1	0.6	0		4.9	75.1	19.7	0.3		
Total %	7	0.7	3.7	0	11.4	0.1	0.3	0.7	0	1.1	6.9	48.6	0.3	0	55.8	1.6	23.7	6.2	0.1	31.6	

Parker, CO
Pinery West
AM Peak
Parker Rd and Stroh Rd

File Name : Parker and Stroh AM
Site Code : IPO 25
Start Date : 10/25/2018
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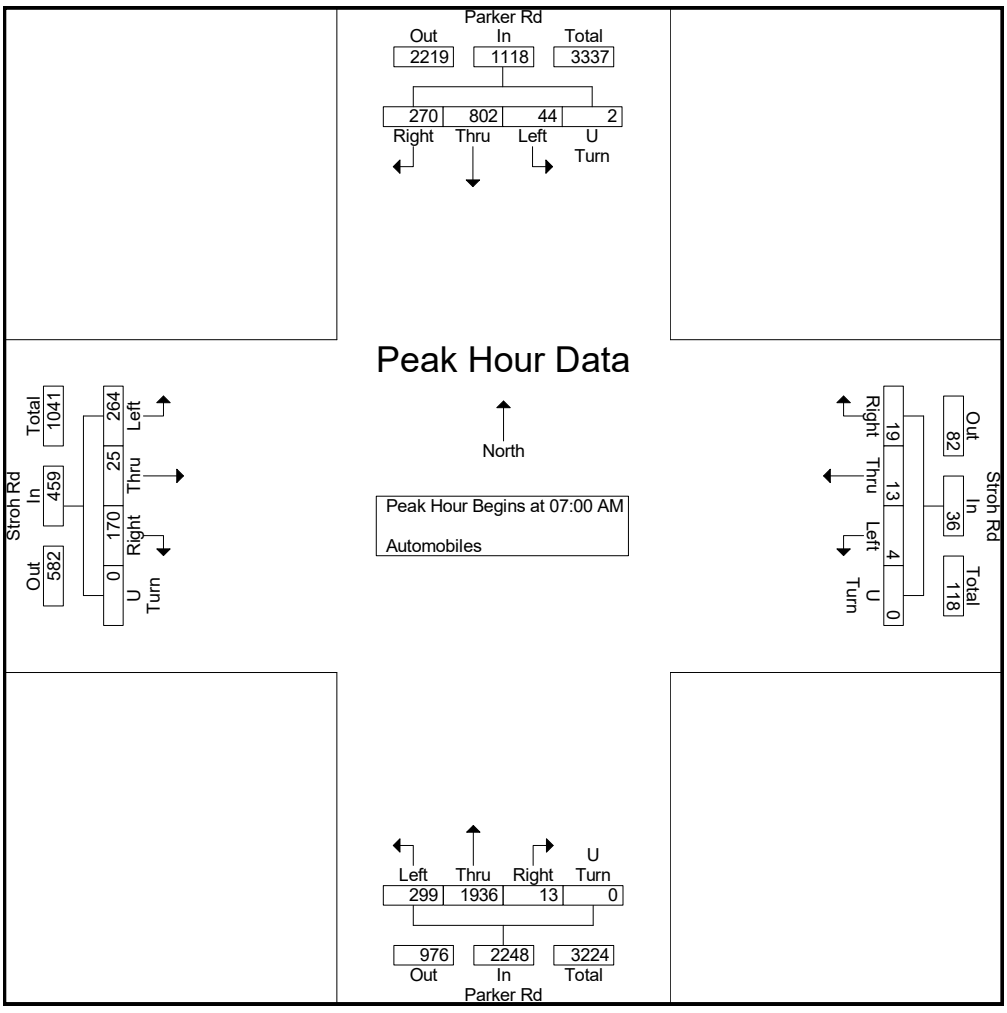


RDC
Ridgeview Data Collection

Parker, CO
Pinery West
AM Peak
Parker Rd and Stroh Rd

File Name : Parker and Stroh AM
Site Code : IPO 25
Start Date : 10/25/2018
Page No : 3

	Stroh Rd Eastbound					Stroh Rd Westbound					Parker Rd Northbound					Parker Rd Southbound					
Start Time	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	42	6	45	0	93	0	0	5	0	5	49	443	3	0	495	11	197	48	0	256	849
07:15 AM	47	4	28	0	79	**2**	2	3	0	7	67	535	2	0	604	**13**	186	50	**1**	250	940
07:30 AM	84	5	**53**	0	142	2	5	**8**	0	**15**	81	**554**	**4**	0	**639**	11	**216**	85	1	**313**	**1109**
07:45 AM	**91**	**10**	44	0	**145**	0	**6**	3	0	9	**102**	404	4	0	510	9	203	**87**	0	299	963
Total Volume	264	25	170	0	459	4	13	19	0	36	299	1936	13	0	2248	44	802	270	2	1118	3861
% App. Total	57.5	5.4	37	0		11.1	36.1	52.8	0		13.3	86.1	0.6	0		3.9	71.7	24.2	0.2		
PHF	.725	.625	.802	.000	.791	.500	.542	.594	.000	.600	.733	.874	.813	.000	.879	.846	.928	.776	.500	.893	.870



RDC
Ridgeview Data Collection

Parker, CO
Pinery West
PM Peak
Parker Rd and Stroh Rd

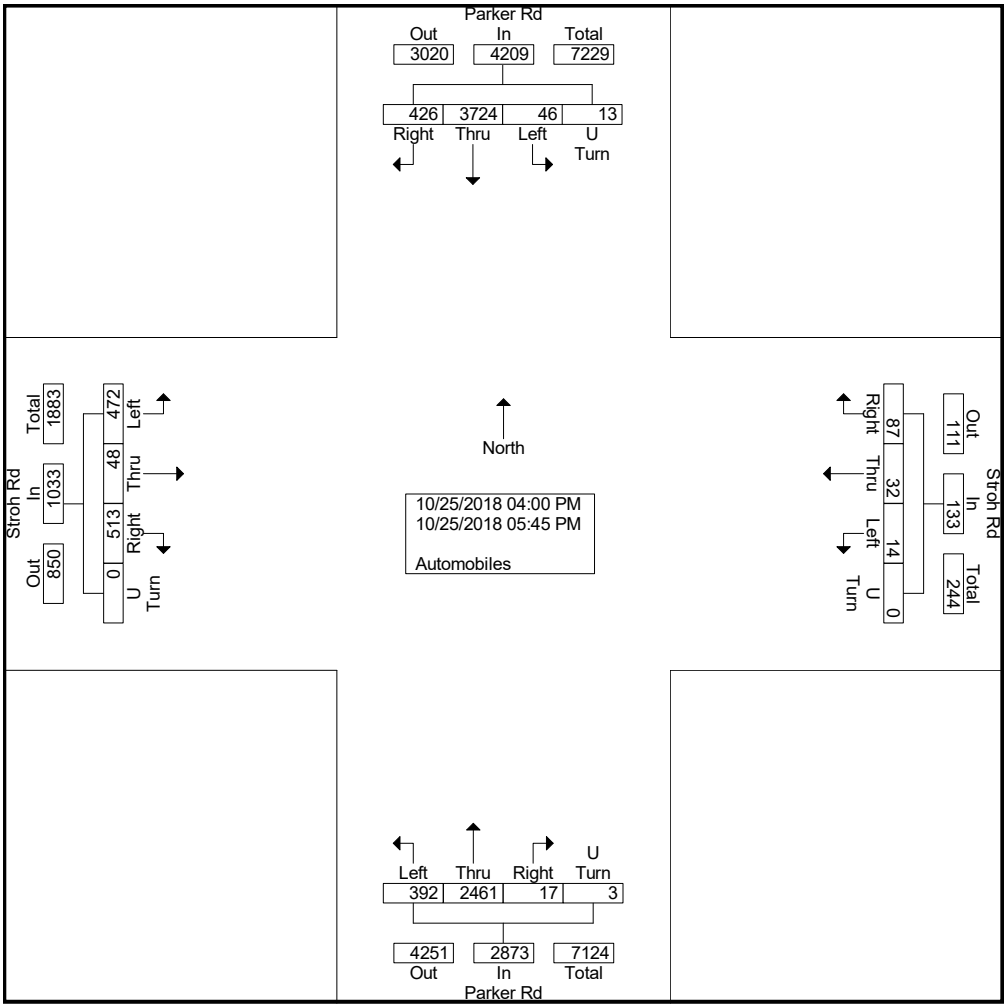
File Name : Parker and Stroh PM
Site Code : IPO 25
Start Date : 10/25/2018
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Groups Printed- Automobiles

	Stroh Rd Eastbound					Stroh Rd Westbound					Parker Rd Northbound					Parker Rd Southbound					
Start Time	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Int. Total
04:00 PM	47	4	58	0	109	4	5	14	0	23	50	306	3	1	360	5	393	46	1	445	937
04:15 PM	70	2	72	0	144	3	3	13	0	19	47	302	3	0	352	7	462	46	1	516	1031
04:30 PM	66	11	65	0	142	1	4	13	0	18	52	334	3	1	390	7	446	63	1	517	1067
04:45 PM	71	7	56	0	134	1	3	8	0	12	45	370	2	0	417	5	472	53	2	532	1095
Total	254	24	251	0	529	9	15	48	0	72	194	1312	11	2	1519	24	1773	208	5	2010	4130
05:00 PM	57	7	51	0	115	2	5	13	0	20	49	329	1	0	379	7	501	64	2	574	1088
05:15 PM	56	7	75	0	138	1	8	8	0	17	46	263	0	0	309	5	497	53	2	557	1021
05:30 PM	49	6	69	0	124	1	1	7	0	9	49	298	2	0	349	6	489	45	0	540	1022
05:45 PM	56	4	67	0	127	1	3	11	0	15	54	259	3	1	317	4	464	56	4	528	987
Total	218	24	262	0	504	5	17	39	0	61	198	1149	6	1	1354	22	1951	218	8	2199	4118
Grand Total	472	48	513	0	1033	14	32	87	0	133	392	2461	17	3	2873	46	3724	426	13	4209	8248
Apprch %	45.7	4.6	49.7	0		10.5	24.1	65.4	0		13.6	85.7	0.6	0.1		1.1	88.5	10.1	0.3		
Total %	5.7	0.6	6.2	0	12.5	0.2	0.4	1.1	0	1.6	4.8	29.8	0.2	0	34.8	0.6	45.2	5.2	0.2	51	

Parker, CO
Pinery West
PM Peak
Parker Rd and Stroh Rd

File Name : Parker and Stroh PM
Site Code : IPO 25
Start Date : 10/25/2018
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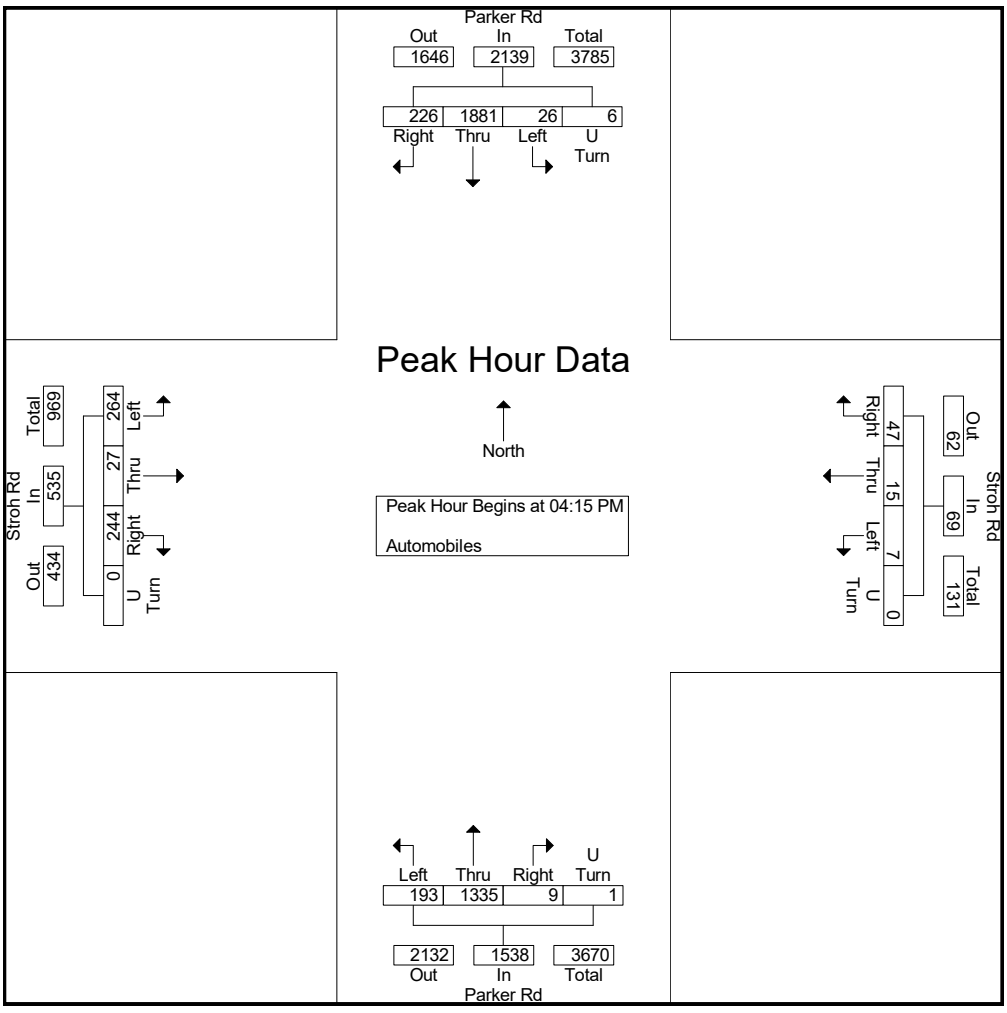


RDC
Ridgeview Data Collection

Parker, CO
Pinery West
PM Peak
Parker Rd and Stroh Rd

File Name : Parker and Stroh PM
Site Code : IPO 25
Start Date : 10/25/2018
Page No : 3

	Stroh Rd Eastbound					Stroh Rd Westbound					Parker Rd Northbound					Parker Rd Southbound					
Start Time	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Left	Thru	Right	U Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	70	2	**72**	0	**144**	**3**	3	**13**	0	19	47	302	**3**	0	352	**7**	462	46	1	516	1031
04:30 PM	66	**11**	65	0	142	1	4	13	0	18	**52**	334	3	**1**	390	7	446	63	1	517	1067
04:45 PM	**71**	7	56	0	134	1	3	8	0	12	45	**370**	2	0	**417**	5	472	53	**2**	532	**1095**
05:00 PM	57	7	51	0	115	2	**5**	13	0	**20**	49	329	1	0	379	7	**501**	**64**	2	**574**	1088
Total Volume	264	27	244	0	535	7	15	47	0	69	193	1335	9	1	1538	26	1881	226	6	2139	4281
% App. Total	49.3	5	45.6	0		10.1	21.7	68.1	0		12.5	86.8	0.6	0.1		1.2	87.9	10.6	0.3		
PHF	.930	.614	.847	.000	.929	.583	.750	.904	.000	.863	.928	.902	.750	.250	.922	.929	.939	.883	.750	.932	.977



RDC
Ridgeview Data Collection

Parker, CO
Pinery West
AM Peak
Stroh Rd and J. Morgan Blvd

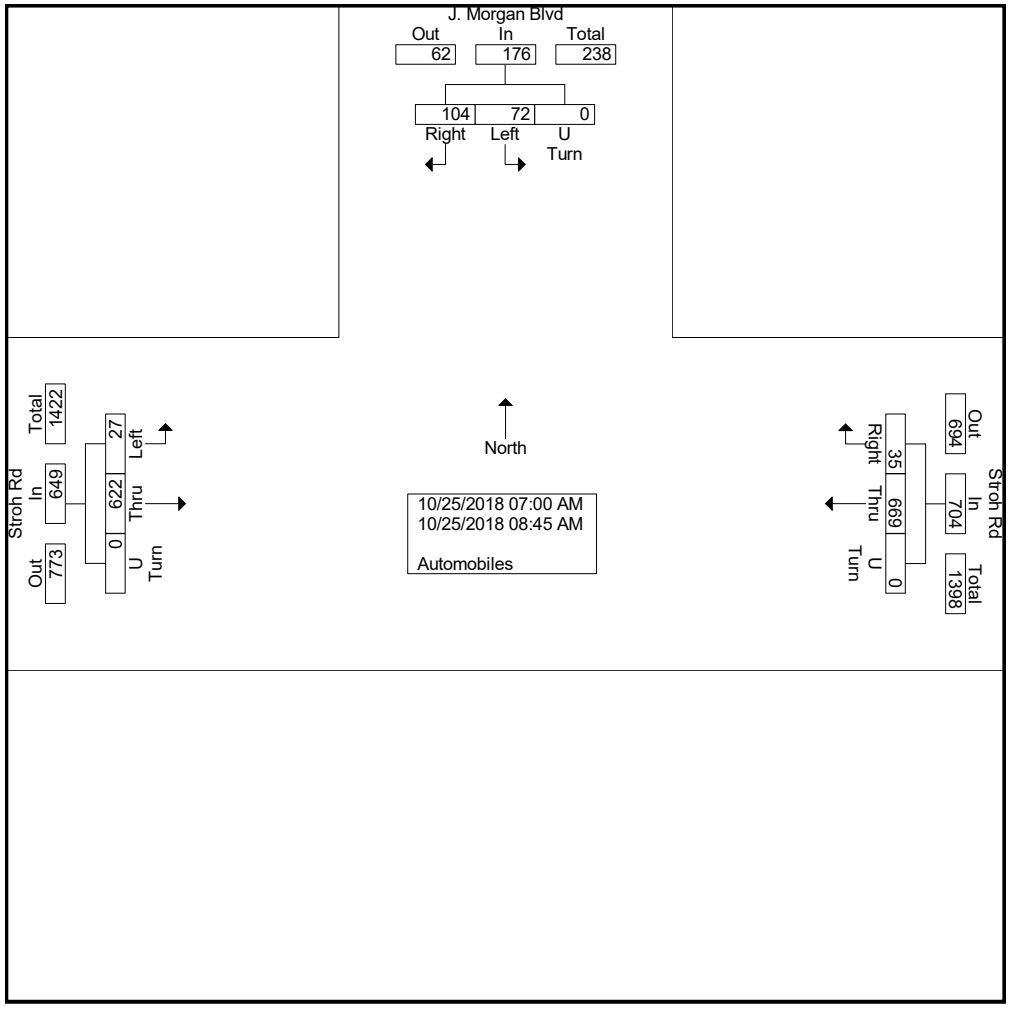
File Name : Stroh and J Morgan AM
Site Code : IPO 25
Start Date : 10/25/2018
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Groups Printed- Automobiles

	Stroh Rd Eastbound				Stroh Rd Westbound				J. Morgan Blvd Southbound				
Start Time	Left	Thru	U Turn	App. Total	Thru	Right	U Turn	App. Total	Left	Right	U Turn	App. Total	Int. Total
07:00 AM	0	74	0	74	57	1	0	58	8	6	0	14	146
07:15 AM	1	81	0	82	81	4	0	85	9	13	0	22	189
07:30 AM	1	114	0	115	106	6	0	112	21	15	0	36	263
07:45 AM	3	127	0	130	112	12	0	124	14	5	0	19	273
Total	5	396	0	401	356	23	0	379	52	39	0	91	871
08:00 AM	5	68	0	73	113	7	0	120	4	18	0	22	215
08:15 AM	6	50	0	56	71	1	0	72	4	22	0	26	154
08:30 AM	9	57	0	66	66	3	0	69	7	9	0	16	151
08:45 AM	2	51	0	53	63	1	0	64	5	16	0	21	138
Total	22	226	0	248	313	12	0	325	20	65	0	85	658
Grand Total	27	622	0	649	669	35	0	704	72	104	0	176	1529
Apprch %	4.2	95.8	0		95	5	0		40.9	59.1	0		
Total %	1.8	40.7	0	42.4	43.8	2.3	0	46	4.7	6.8	0	11.5	

Parker, CO
Pinery West
AM Peak
Stroh Rd and J. Morgan Blvd

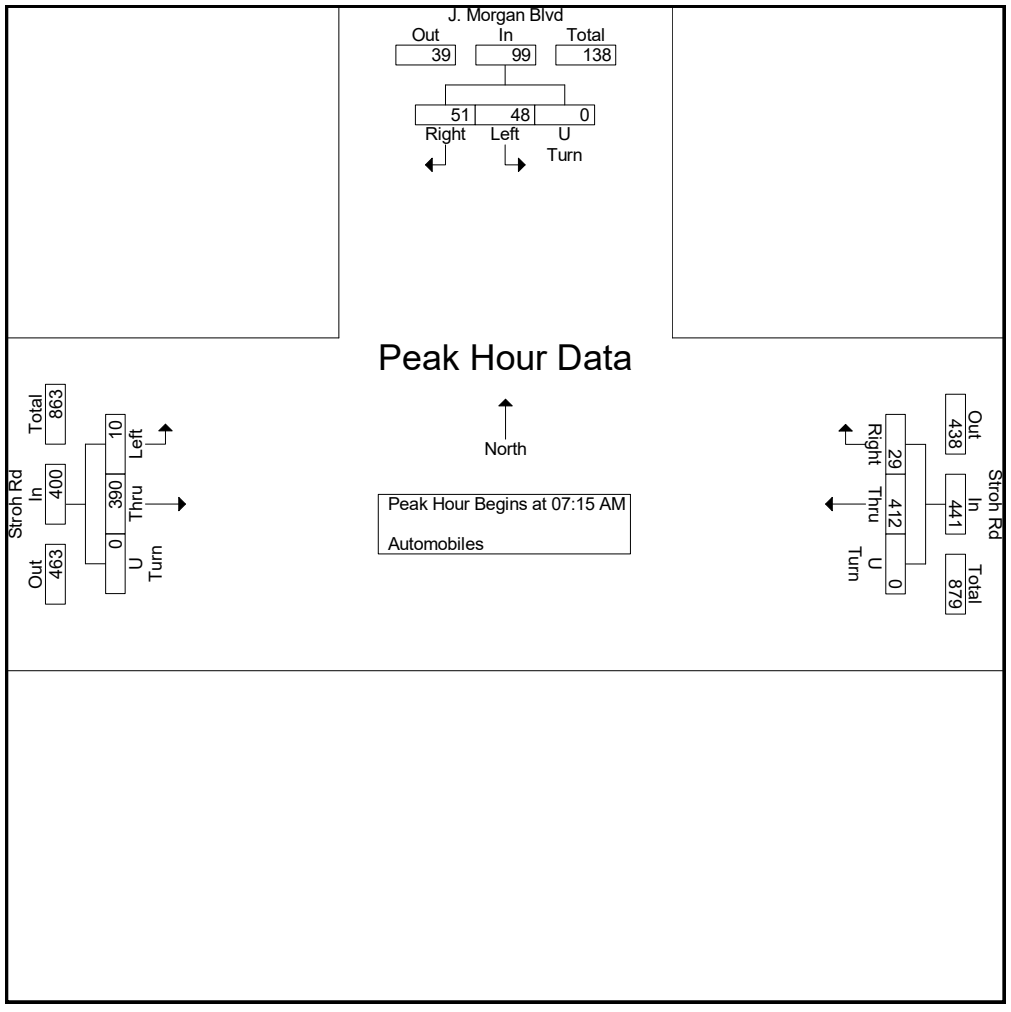
File Name : Stroh and J Morgan AM
Site Code : IPO 25
Start Date : 10/25/2018
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Parker, CO
Pinery West
AM Peak
Stroh Rd and J. Morgan Blvd

File Name : Stroh and J Morgan AM
Site Code : IPO 25
Start Date : 10/25/2018
Page No : 3

	Stroh Rd Eastbound				Stroh Rd Westbound				J. Morgan Blvd Southbound				
Start Time	Left	Thru	U Turn	App. Total	Thru	Right	U Turn	App. Total	Left	Right	U Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:15 AM													
07:15 AM	1	81	0	82	81	4	0	85	9	13	0	22	189
07:30 AM	1	114	0	115	106	6	0	112	**21**	15	0	**36**	263
07:45 AM	3	**127**	0	**130**	112	**12**	0	**124**	14	5	0	19	**273**
08:00 AM	**5**	68	0	73	**113**	7	0	120	4	**18**	0	22	215
Total Volume	10	390	0	400	412	29	0	441	48	51	0	99	940
% App. Total	2.5	97.5	0		93.4	6.6	0		48.5	51.5	0		
PHF	.500	.768	.000	.769	.912	.604	.000	.889	.571	.708	.000	.688	.861



RDC
Ridgeview Data Collection

Parker, CO
Pinery West
PM Peak
Stroh Rd and J. Morgan Blvd

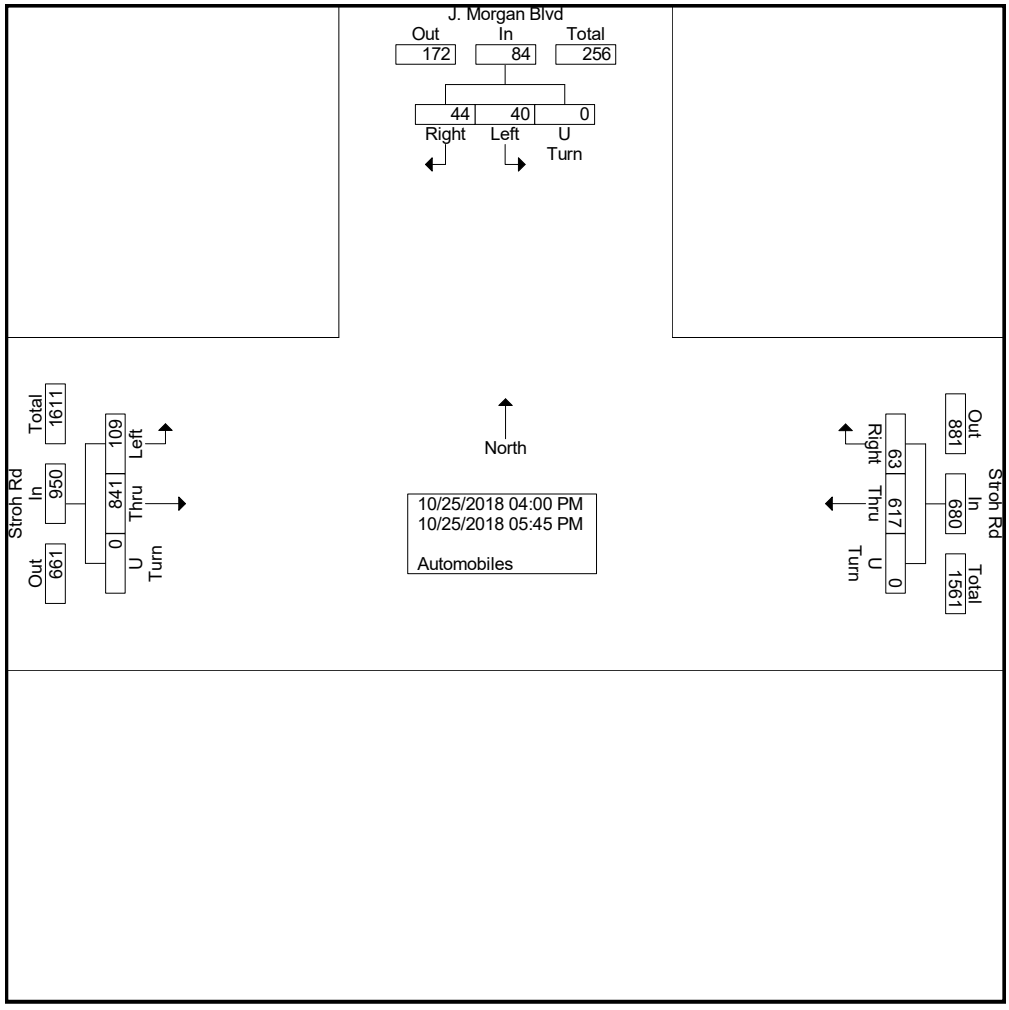
File Name : Stroh and J Morgan PM
Site Code : IPO 25
Start Date : 10/25/2018
Page No : 1

Groups Printed- Automobiles

	Stroh Rd Eastbound				Stroh Rd Westbound				J. Morgan Blvd Southbound				
Start Time	Left	Thru	U Turn	App. Total	Thru	Right	U Turn	App. Total	Left	Right	U Turn	App. Total	Int. Total
04:00 PM	24	96	0	120	76	9	0	85	3	6	0	9	214
04:15 PM	15	114	0	129	78	7	0	85	7	7	0	14	228
04:30 PM	13	104	0	117	83	9	0	92	7	9	0	16	225
04:45 PM	9	116	0	125	75	8	0	83	6	6	0	12	220
Total	61	430	0	491	312	33	0	345	23	28	0	51	887
05:00 PM	8	115	0	123	87	3	0	90	2	6	0	8	221
05:15 PM	12	104	0	116	76	11	0	87	5	2	0	7	210
05:30 PM	16	104	0	120	66	6	0	72	3	2	0	5	197
05:45 PM	12	88	0	100	76	10	0	86	7	6	0	13	199
Total	48	411	0	459	305	30	0	335	17	16	0	33	827
Grand Total	109	841	0	950	617	63	0	680	40	44	0	84	1714
Apprch %	11.5	88.5	0		90.7	9.3	0		47.6	52.4	0		
Total %	6.4	49.1	0	55.4	36	3.7	0	39.7	2.3	2.6	0	4.9	

Parker, CO
Pinery West
PM Peak
Stroh Rd and J. Morgan Blvd

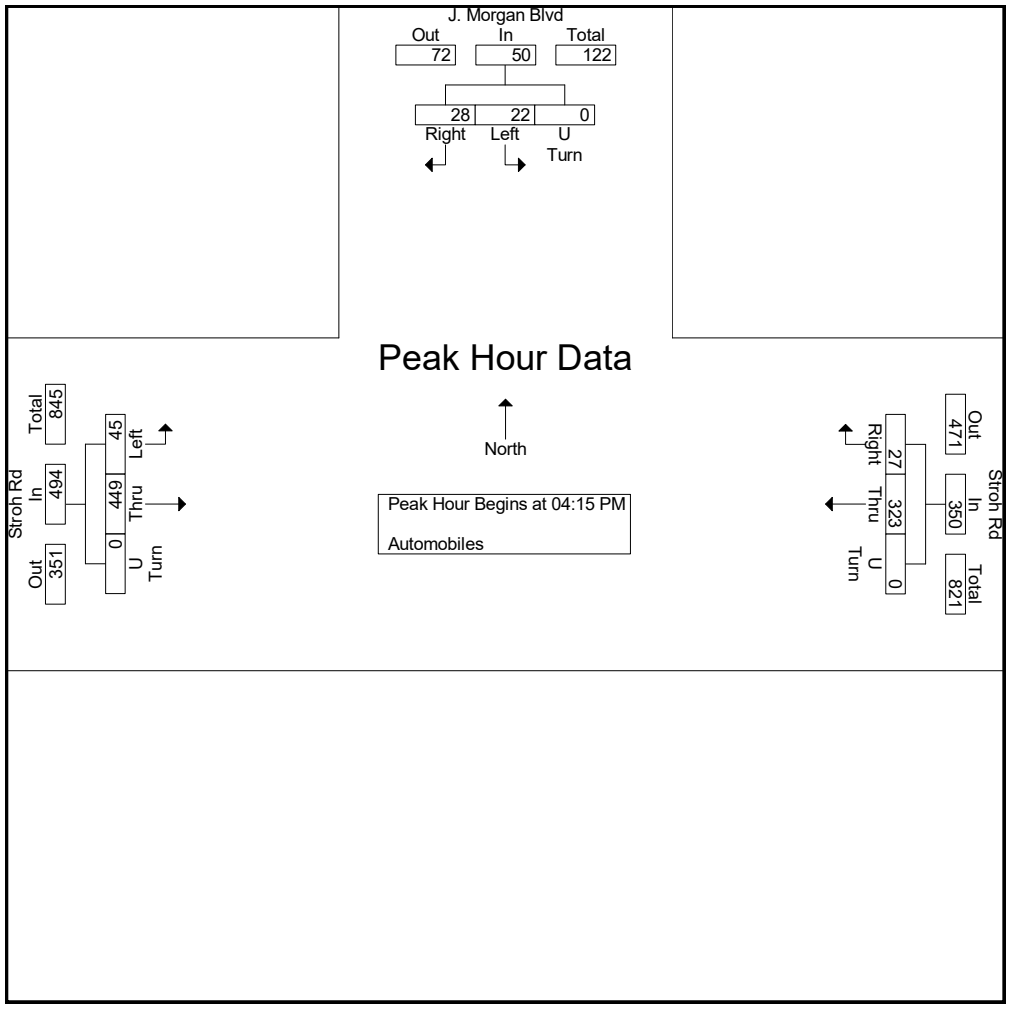
File Name : Stroh and J Morgan PM
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Parker, CO
Pinery West
PM Peak
Stroh Rd and J. Morgan Blvd

File Name : Stroh and J Morgan PM
Site Code : IPO 25
Start Date : 10/25/2018
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	Stroh Rd Eastbound				Stroh Rd Westbound				J. Morgan Blvd Southbound				
Start Time	Left	Thru	U Turn	App. Total	Thru	Right	U Turn	App. Total	Left	Right	U Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:15 PM													
04:15 PM	**15**	114	0	**129**	78	7	0	85	**7**	7	0	14	**228**
04:30 PM	13	104	0	117	83	**9**	0	**92**	7	**9**	0	**16**	225
04:45 PM	9	**116**	0	125	75	8	0	83	6	6	0	12	220
05:00 PM	8	115	0	123	**87**	3	0	90	2	6	0	8	221
Total Volume	45	449	0	494	323	27	0	350	22	28	0	50	894
% App. Total	9.1	90.9	0		92.3	7.7	0		44	56	0		
PHF	.750	.968	.000	.957	.928	.750	.000	.951	.786	.778	.000	.781	.980



Daily Vehicle Volume Report

Study Date: Thursday, 10/25/2018 / Friday, 10/26/2018
Unit ID: RDC 16
Location: Stroh Rd, Parker, CO
Comments: East of J. Morgan Blvd

	Westbound Volume	Eastbound Volume	Total Volume
05:00 - 05:59	49	53	**102**
06:00 - 06:59	151	130	**281**
07:00 - 07:59	408	464	**872**
08:00 - 08:59	315	252	**567**
09:00 - 09:59	220	224	**444**
10:00 - 10:59	224	214	**438**
11:00 - 11:59	241	255	**496**
12:00 - 12:59	215	244	**459**
13:00 - 13:59	244	268	**512**
14:00 - 14:59	276	333	**609**
15:00 - 15:59	413	460	**873**
16:00 - 16:59	332	493	**825**
17:00 - 17:59	339	434	**773**
18:00 - 18:59	290	332	**622**
19:00 - 19:59	166	188	**354**
20:00 - 20:59	127	106	**233**
21:00 - 21:59	90	76	**166**
22:00 - 22:59	55	34	**89**
23:00 - 23:59	22	16	**38**
00:00 - 00:59	8	15	**23**
01:00 - 01:59	2	7	**9**
02:00 - 02:59	7	7	**14**
03:00 - 03:59	7	6	**13**
04:00 - 04:59	8	4	**12**
Totals	**4209**	**4615**	**8824**
AM Peak Time	**07:20 - 08:19**	**07:00 - 07:59**	**07:12 - 08:11**
AM Peak Volume	**459**	**464**	**910**
PM Peak Time	**14:46 - 15:45**	**16:11 - 17:10**	**14:49 - 15:48**
PM Peak Volume	**415**	**511**	**878**

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.

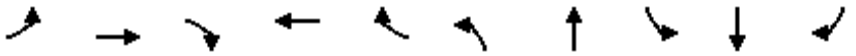
Intersection Capacity Worksheets and Time-Space (Progression) Diagrams

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	27	4	6	72	1	395	5	1826	92	858	3
Future Volume (vph)	27	4	6	72	1	395	5	1826	92	858	3
Turn Type	Prot	NA	Free	Perm	NA	pm+ov	Prot	NA	Prot	NA	Free
Protected Phases	7	4			8	1	5	2	1	6	
Permitted Phases			Free	8		8					Free
Detector Phase	7	4		8	8	1	5	2	1	6	
Switch Phase											
Minimum Initial (s)	5.0	5.0		12.0	12.0	8.0	1.0	20.0	8.0	20.0	
Minimum Split (s)	10.0	39.0		39.0	39.0	13.0	6.0	27.0	13.0	27.0	
Total Split (s)	12.0	36.0		24.0	24.0	14.0	11.0	50.0	14.0	53.0	
Total Split (%)	12.0%	36.0%		24.0%	24.0%	14.0%	11.0%	50.0%	14.0%	53.0%	
Yellow Time (s)	3.0	4.0		4.0	4.0	3.0	3.0	5.0	3.0	5.0	
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	
Total Lost Time (s)	5.0	6.0			6.0	5.0	5.0	7.0	5.0	7.0	
Lead/Lag	Lead			Lag	Lag	Lead	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None	None	None	Max	None	Max	

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 86.4
Natural Cycle: 110
Control Type: Semi Act-Uncoord

Splits and Phases: 1: Parker Road & Pinery Parkway





Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	41	6	9	83	449	6	2150	103	964	3
v/c Ratio	0.16	0.03	0.01	0.40	0.89	0.05	0.85	0.29	0.29	0.00
Control Delay	43.0	32.8	0.0	43.1	45.1	43.8	25.4	42.0	9.7	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.0	32.8	0.0	43.1	45.1	43.8	25.4	42.0	9.7	0.0
Queue Length 50th (ft)	11	3	0	46	200	3	428	29	92	0
Queue Length 95th (ft)	21	9	0	91	#328	16	#568	57	172	0
Internal Link Dist (ft)		553		790			779		6252	
Turn Bay Length (ft)	220		100			340		500		685
Base Capacity (vph)	285	663	1583	288	506	126	2538	366	3360	1583
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	0.14	0.01	0.01	0.29	0.89	0.05	0.85	0.28	0.29	0.00

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)	27	4	6	72	1	395	5	1826	44	92	858	3
Future Volume (vph)	27	4	6	72	1	395	5	1826	44	92	858	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	4.0		6.0	5.0	5.0	7.0		5.0	7.0	4.0
Lane Util. Factor	0.97	1.00	1.00		1.00	1.00	1.00	0.91		0.97	0.91	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583		1775	1583	1770	4972		3433	4988	1583
Flt Permitted	0.95	1.00	1.00		0.73	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1583		1350	1583	1770	4972		3433	4988	1583
Peak-hour factor, PHF	0.66	0.66	0.66	0.88	0.88	0.88	0.87	0.87	0.87	0.89	0.89	0.89
Adj. Flow (vph)	41	6	9	82	1	449	6	2099	51	103	964	3
RTOR Reduction (vph)	0	0	0	0	0	78	0	2	0	0	0	0
Lane Group Flow (vph)	41	6	9	0	83	371	6	2148	0	103	964	3
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	4%	2%
Turn Type	Prot	NA	Free	Perm	NA	pm+ov	Prot	NA		Prot	NA	Free
Protected Phases	7	4			8	1	5	2		1	6	
Permitted Phases			Free	8		8						Free
Actuated Green, G (s)	3.7	18.7	94.1		10.0	19.0	1.1	48.4		9.0	56.3	94.1
Effective Green, g (s)	3.7	18.7	94.1		10.0	19.0	1.1	48.4		9.0	56.3	94.1
Actuated g/C Ratio	0.04	0.20	1.00		0.11	0.20	0.01	0.51		0.10	0.60	1.00
Clearance Time (s)	5.0	6.0			6.0	5.0	5.0	7.0		5.0	7.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)	134	370	1583		143	319	20	2557		328	2984	1583
v/s Ratio Prot	c0.01	0.00				c0.11	0.00	c0.43		0.03	0.19	
v/s Ratio Perm			0.01		0.06	0.12						0.00
v/c Ratio	0.31	0.02	0.01		0.58	1.16	0.30	0.84		0.31	0.32	0.00
Uniform Delay, d1	44.0	30.3	0.0		40.1	37.5	46.1	19.5		39.7	9.4	0.0
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.3	0.0	0.0		5.9	102.0	8.3	3.5		0.6	0.3	0.0
Delay (s)	45.2	30.3	0.0		45.9	139.5	54.4	23.1		40.2	9.7	0.0
Level of Service	D	C	A		D	F	D	C		D	A	A
Approach Delay (s)		36.4			124.9			23.2			12.6	
Approach LOS		D			F			C			B	

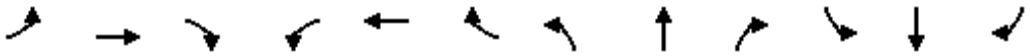
Intersection Summary			
HCM 2000 Control Delay	34.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	94.1	Sum of lost time (s)	23.0
Intersection Capacity Utilization	79.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	264	25	170	4	13	19	299	1936	13	46	802	270
Future Volume (vph)	264	25	170	4	13	19	299	1936	13	46	802	270
Turn Type	Split	NA	Free	Split	NA	Free	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			Free			Free			2			Free
Detector Phase	4	4		8	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		10.0	19.0	19.0	6.0	19.0	
Minimum Split (s)	37.2	37.2		37.5	37.5		16.2	35.0	35.0	12.2	35.0	
Total Split (s)	25.0	25.0		18.0	18.0		27.0	58.0	58.0	19.0	50.0	
Total Split (%)	20.8%	20.8%		15.0%	15.0%		22.5%	48.3%	48.3%	15.8%	41.7%	
Yellow Time (s)	3.2	3.2		3.5	3.5		3.2	5.0	5.0	3.2	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	2.0	2.0	3.0	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)	5.2	5.2		5.5	5.5		6.2	7.0	7.0	6.2	7.0	
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None		None	Max	Max	None	Max	

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 100
Natural Cycle: 150
Control Type: Semi Act-Uncoord

Splits and Phases: 2: Parker Road & Stroh Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	184	182	215	7	22	32	340	2200	15	52	901	303
v/c Ratio	0.72	0.71	0.14	0.06	0.09	0.02	0.67	0.82	0.02	0.36	0.41	0.19
Control Delay	58.7	57.5	0.2	50.5	49.5	0.0	48.4	25.7	0.0	54.1	21.7	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	58.7	57.5	0.2	50.5	49.5	0.0	48.4	25.7	0.0	54.1	21.7	0.3
Queue Length 50th (ft)	126	125	0	5	7	0	114	493	0	34	158	0
Queue Length 95th (ft)	184	183	0	13	14	0	162	#665	0	76	219	0
Internal Link Dist (ft)		589			1174			1592			712	
Turn Bay Length (ft)				315		155	350		285	530		560
Base Capacity (vph)	338	342	1583	225	450	1564	727	2699	914	230	2217	1583
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	0.54	0.53	0.14	0.03	0.05	0.02	0.47	0.82	0.02	0.23	0.41	0.19

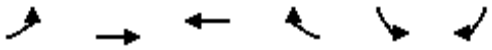
Intersection Summary

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)	264	25	170	4	13	19	299	1936	13	46	802	270
Future Volume (vph)	264	25	170	4	13	19	299	1936	13	46	802	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2	4.0	5.5	5.5	4.0	6.2	7.0	7.0	6.2	7.0	4.0
Lane Util. Factor	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1700	1583	1770	3539	1564	3433	4988	1583	1770	4988	1583
Flt Permitted	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1700	1583	1770	3539	1564	3433	4988	1583	1770	4988	1583
Peak-hour factor, PHF	0.79	0.79	0.79	0.60	0.60	0.60	0.88	0.88	0.88	0.89	0.89	0.89
Adj. Flow (vph)	334	32	215	7	22	32	340	2200	15	52	901	303
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	7	0	0	0
Lane Group Flow (vph)	184	182	215	7	22	32	340	2200	8	52	901	303
Confl. Peds. (#/hr)						1						
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	4%	2%
Turn Type	Split	NA	Free	Split	NA	Free	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			Free			Free			2			Free
Actuated Green, G (s)	15.2	15.2	103.7	3.8	3.8	103.7	14.8	54.1	54.1	6.7	46.0	103.7
Effective Green, g (s)	15.2	15.2	103.7	3.8	3.8	103.7	14.8	54.1	54.1	6.7	46.0	103.7
Actuated g/C Ratio	0.15	0.15	1.00	0.04	0.04	1.00	0.14	0.52	0.52	0.06	0.44	1.00
Clearance Time (s)	5.2	5.2		5.5	5.5		6.2	7.0	7.0	6.2	7.0	
Vehicle Extension (s)	2.5	2.5		3.0	3.0		2.5	5.0	5.0	2.5	5.0	
Lane Grp Cap (vph)	246	249	1583	64	129	1564	489	2602	825	114	2212	1583
v/s Ratio Prot	c0.11	0.11		0.00	0.01		c0.10	c0.44		0.03	0.18	
v/s Ratio Perm			0.14			0.02			0.00			c0.19
v/c Ratio	0.75	0.73	0.14	0.11	0.17	0.02	0.70	0.85	0.01	0.46	0.41	0.19
Uniform Delay, d1	42.4	42.3	0.0	48.3	48.4	0.0	42.3	21.2	11.9	46.7	19.6	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.2	9.9	0.2	0.8	0.6	0.0	3.9	3.6	0.0	2.1	0.6	0.3
Delay (s)	53.6	52.2	0.2	49.1	49.1	0.0	46.2	24.8	11.9	48.8	20.2	0.3
Level of Service	D	D	A	D	D	A	D	C	B	D	C	A
Approach Delay (s)		33.4			23.3			27.6			16.5	
Approach LOS		C			C			C			B	

Intersection Summary					
HCM 2000 Control Delay	25.2	HCM 2000 Level of Service	C		
HCM 2000 Volume to Capacity ratio	0.83				
Actuated Cycle Length (s)	103.7	Sum of lost time (s)	23.9		
Intersection Capacity Utilization	72.4%	ICU Level of Service	C		
Analysis Period (min)	15				

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	396	356	23	52	39
Future Volume (Veh/h)	5	396	356	23	52	39
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.77	0.77	0.90	0.90	0.69	0.69
Hourly flow rate (vph)	6	514	396	26	75	57
Pedestrians					1	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	423				923	397
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	423				923	397
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				75	91
cM capacity (veh/h)	1135				298	652

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	6	514	396	26	75	57
Volume Left	6	0	0	0	75	0
Volume Right	0	0	0	26	0	57
cSH	1135	1700	1700	1700	298	652
Volume to Capacity	0.01	0.30	0.23	0.02	0.25	0.09
Queue Length 95th (ft)	0	0	0	0	24	7
Control Delay (s)	8.2	0.0	0.0	0.0	21.1	11.1
Lane LOS	A				C	B
Approach Delay (s)	0.1		0.0		16.8	
Approach LOS					C	

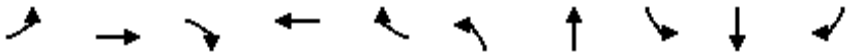
Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	30.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	12	3	4	68	2	267	5	1256	404	1695	22
Future Volume (vph)	12	3	4	68	2	267	5	1256	404	1695	22
Turn Type	Perm	NA	Free	Perm	NA	pm+ov	Prot	NA	Prot	NA	Free
Protected Phases		4			8	1	5	2	1	6	
Permitted Phases	4		Free	8		8					Free
Detector Phase	4	4		8	8	1	5	2	1	6	
Switch Phase											
Minimum Initial (s)	5.0	5.0		12.0	12.0	8.0	1.0	20.0	8.0	20.0	
Minimum Split (s)	39.0	39.0		39.0	39.0	13.0	6.0	27.0	13.0	27.0	
Total Split (s)	30.0	30.0		30.0	30.0	23.0	11.0	37.0	23.0	49.0	
Total Split (%)	33.3%	33.3%		33.3%	33.3%	25.6%	12.2%	41.1%	25.6%	54.4%	
Yellow Time (s)	4.0	4.0		4.0	4.0	3.0	3.0	5.0	3.0	5.0	
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	
Total Lost Time (s)	6.0	6.0			6.0	5.0	5.0	7.0	5.0	7.0	
Lead/Lag						Lead	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None	None	None	Max	None	Max	

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 70.8
Natural Cycle: 90
Control Type: Semi Act-Uncoord

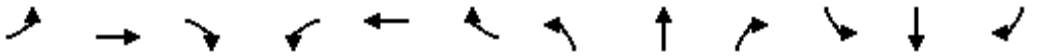
Splits and Phases: 1: Parker Road & Pinery Parkway





Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	28	7	9	77	293	5	1423	416	1747	23
v/c Ratio	0.08	0.03	0.01	0.32	0.45	0.03	0.66	0.62	0.50	0.01
Control Delay	28.2	27.7	0.0	32.7	14.4	34.2	19.6	31.2	8.2	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.2	27.7	0.0	32.7	14.4	34.2	19.6	31.2	8.2	0.0
Queue Length 50th (ft)	5	3	0	32	73	2	192	91	130	0
Queue Length 95th (ft)	8	6	0	74	131	13	275	138	267	0
Internal Link Dist (ft)		553		790			779		6252	
Turn Bay Length (ft)	220		100			340		500		685
Base Capacity (vph)	888	647	1583	471	747	154	2161	895	3510	1583
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	0.03	0.01	0.01	0.16	0.39	0.03	0.66	0.46	0.50	0.01

Intersection Summary



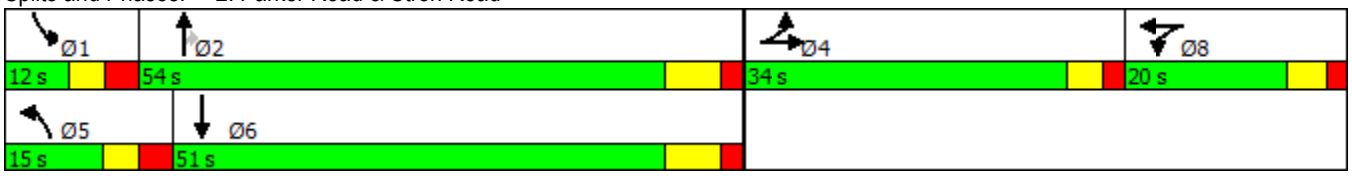
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	3	4	68	2	267	5	1256	53	404	1695	22
Future Volume (vph)	12	3	4	68	2	267	5	1256	53	404	1695	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	4.0		6.0	5.0	5.0	7.0		5.0	7.0	4.0
Lane Util. Factor	0.97	1.00	1.00		1.00	1.00	1.00	0.91		0.97	0.91	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583		1776	1583	1770	4961		3433	4988	1583
Flt Permitted	0.71	1.00	1.00		0.73	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	2555	1863	1583		1354	1583	1770	4961		3433	4988	1583
Peak-hour factor, PHF	0.43	0.43	0.43	0.91	0.91	0.91	0.92	0.92	0.92	0.97	0.97	0.97
Adj. Flow (vph)	28	7	9	75	2	293	5	1365	58	416	1747	23
RTOR Reduction (vph)	0	0	0	0	0	33	0	4	0	0	0	0
Lane Group Flow (vph)	28	7	9	0	77	260	5	1419	0	416	1747	23
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	4%	2%
Turn Type	Perm	NA	Free	Perm	NA	pm+ov	Prot	NA		Prot	NA	Free
Protected Phases		4			8	1	5	2		1	6	
Permitted Phases	4		Free	8		8						Free
Actuated Green, G (s)	9.3	9.3	76.3		9.3	23.2	1.1	35.1		13.9	47.9	76.3
Effective Green, g (s)	9.3	9.3	76.3		9.3	23.2	1.1	35.1		13.9	47.9	76.3
Actuated g/C Ratio	0.12	0.12	1.00		0.12	0.30	0.01	0.46		0.18	0.63	1.00
Clearance Time (s)	6.0	6.0			6.0	5.0	5.0	7.0		5.0	7.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)	311	227	1583		165	481	25	2282		625	3131	1583
v/s Ratio Prot		0.00				c0.10	0.00	c0.29		c0.12	0.35	
v/s Ratio Perm	0.01		0.01		0.06	0.07						0.01
v/c Ratio	0.09	0.03	0.01		0.47	0.54	0.20	0.62		0.67	0.56	0.01
Uniform Delay, d1	29.7	29.5	0.0		31.2	22.1	37.2	15.6		29.0	8.1	0.0
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.1	0.1	0.0		2.1	1.2	3.9	1.3		2.7	0.7	0.0
Delay (s)	29.9	29.6	0.0		33.3	23.3	41.1	16.9		31.7	8.9	0.0
Level of Service	C	C	A		C	C	D	B		C	A	A
Approach Delay (s)		23.7			25.4			17.0			13.1	
Approach LOS		C			C			B			B	

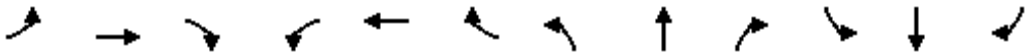
Intersection Summary			
HCM 2000 Control Delay	15.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	76.3	Sum of lost time (s)	18.0
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	264	27	244	7	15	47	193	1335	9	32	1881	226
Future Volume (vph)	264	27	244	7	15	47	193	1335	9	32	1881	226
Turn Type	Split	NA	Free	Split	NA	Free	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			Free			Free			2			Free
Detector Phase	4	4		8	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		10.0	19.0	19.0	6.0	19.0	
Minimum Split (s)	37.2	37.2		37.5	37.5		16.2	35.0	35.0	12.2	35.0	
Total Split (s)	34.0	34.0		20.0	20.0		15.0	54.0	54.0	12.0	51.0	
Total Split (%)	28.3%	28.3%		16.7%	16.7%		12.5%	45.0%	45.0%	10.0%	42.5%	
Yellow Time (s)	3.2	3.2		3.5	3.5		3.2	5.0	5.0	3.2	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	2.0	2.0	3.0	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)	5.2	5.2		5.5	5.5		6.2	7.0	7.0	6.2	7.0	
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None		None	Max	Max	None	Max	

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 89.9
Natural Cycle: 150
Control Type: Semi Act-Uncoord

Splits and Phases: 2: Parker Road & Stroh Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	156	157	262	8	17	55	210	1451	10	34	2023	243
v/c Ratio	0.62	0.62	0.17	0.06	0.06	0.04	0.62	0.49	0.01	0.30	0.82	0.15
Control Delay	48.2	47.9	0.2	44.3	43.3	0.0	49.7	14.5	0.0	50.8	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	48.2	47.9	0.2	44.3	43.3	0.0	49.7	14.5	0.0	50.8	24.6	0.2
Queue Length 50th (ft)	82	82	0	4	4	0	56	166	0	18	303	0
Queue Length 95th (ft)	166	167	0	19	16	0	#121	313	0	55	#583	0
Internal Link Dist (ft)		589			1174			1592			712	
Turn Bay Length (ft)				315		155	350		285	530		560
Base Capacity (vph)	545	551	1583	288	577	1564	340	2936	983	115	2471	1583
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	0.29	0.28	0.17	0.03	0.03	0.04	0.62	0.49	0.01	0.30	0.82	0.15

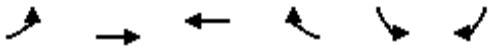
Intersection Summary

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)	264	27	244	7	15	47	193	1335	9	32	1881	226
Future Volume (vph)	264	27	244	7	15	47	193	1335	9	32	1881	226
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2	4.0	5.5	5.5	4.0	6.2	7.0	7.0	6.2	7.0	4.0
Lane Util. Factor	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1700	1583	1770	3539	1564	3433	4988	1583	1770	4988	1583
Flt Permitted	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1700	1583	1770	3539	1564	3433	4988	1583	1770	4988	1583
Peak-hour factor, PHF	0.93	0.93	0.93	0.86	0.86	0.86	0.92	0.92	0.92	0.93	0.93	0.93
Adj. Flow (vph)	284	29	262	8	17	55	210	1451	10	34	2023	243
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	4	0	0	0
Lane Group Flow (vph)	156	157	262	8	17	55	210	1451	6	34	2023	243
Confl. Peds. (#/hr)						1						
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	4%	2%
Turn Type	Split	NA	Free	Split	NA	Free	Prot	NA	Perm	Prot	NA	Free
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			Free			Free			2			Free
Actuated Green, G (s)	13.4	13.4	96.0	2.5	2.5	96.0	8.9	52.9	52.9	3.3	47.3	96.0
Effective Green, g (s)	13.4	13.4	96.0	2.5	2.5	96.0	8.9	52.9	52.9	3.3	47.3	96.0
Actuated g/C Ratio	0.14	0.14	1.00	0.03	0.03	1.00	0.09	0.55	0.55	0.03	0.49	1.00
Clearance Time (s)	5.2	5.2		5.5	5.5		6.2	7.0	7.0	6.2	7.0	
Vehicle Extension (s)	2.5	2.5		3.0	3.0		2.5	5.0	5.0	2.5	5.0	
Lane Grp Cap (vph)	234	237	1583	46	92	1564	318	2748	872	60	2457	1583
v/s Ratio Prot	c0.09	0.09		0.00	0.00		c0.06	c0.29		0.02	c0.41	
v/s Ratio Perm			c0.17			0.04			0.00			0.15
v/c Ratio	0.67	0.66	0.17	0.17	0.18	0.04	0.66	0.53	0.01	0.57	0.82	0.15
Uniform Delay, d1	39.2	39.2	0.0	45.7	45.8	0.0	42.1	13.6	9.7	45.6	20.8	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.3	6.1	0.2	1.8	1.0	0.0	4.6	0.7	0.0	9.6	3.3	0.2
Delay (s)	45.5	45.3	0.2	47.5	46.7	0.0	46.7	14.4	9.7	55.2	24.1	0.2
Level of Service	D	D	A	D	D	A	D	B	A	E	C	A
Approach Delay (s)		24.8			14.7			18.4			22.0	
Approach LOS		C			B			B			C	

Intersection Summary			
HCM 2000 Control Delay	20.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	96.0	Sum of lost time (s)	23.9
Intersection Capacity Utilization	74.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	45	449	323	27	22	28
Future Volume (Veh/h)	45	449	323	27	22	28
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.96	0.96	0.95	0.95	0.78	0.78
Hourly flow rate (vph)	47	468	340	28	28	36
Pedestrians					15	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	383				917	355
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	383				917	355
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				90	95
cM capacity (veh/h)	1159				286	679

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	47	468	340	28	28	36
Volume Left	47	0	0	0	28	0
Volume Right	0	0	0	28	0	36
cSH	1159	1700	1700	1700	286	679
Volume to Capacity	0.04	0.28	0.20	0.02	0.10	0.05
Queue Length 95th (ft)	3	0	0	0	8	4
Control Delay (s)	8.2	0.0	0.0	0.0	19.0	10.6
Lane LOS	A				C	B
Approach Delay (s)	0.8		0.0		14.3	
Approach LOS					B	

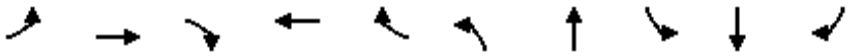
Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	33.7%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	30	4	10	75	1	395	5	2165	95	1025	5
Future Volume (vph)	30	4	10	75	1	395	5	2165	95	1025	5
Turn Type	Prot	NA	Free	Perm	NA	pm+ov	Prot	NA	Prot	NA	Free
Protected Phases	7	4			8	1	5	2	1	6	
Permitted Phases			Free	8		8					Free
Detector Phase	7	4		8	8	1	5	2	1	6	
Switch Phase											
Minimum Initial (s)	5.0	5.0		12.0	12.0	8.0	1.0	20.0	8.0	20.0	
Minimum Split (s)	10.0	39.0		39.0	39.0	13.0	6.0	27.0	13.0	27.0	
Total Split (s)	12.0	36.0		24.0	24.0	14.0	11.0	50.0	14.0	53.0	
Total Split (%)	12.0%	36.0%		24.0%	24.0%	14.0%	11.0%	50.0%	14.0%	53.0%	
Yellow Time (s)	3.0	4.0		4.0	4.0	3.0	3.0	5.0	3.0	5.0	
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	
Total Lost Time (s)	5.0	6.0			6.0	5.0	5.0	7.0	5.0	7.0	
Lead/Lag	Lead			Lag	Lag	Lead	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None	None	None	Max	None	Max	

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 86.5
Natural Cycle: 140
Control Type: Semi Act-Uncoord

Splits and Phases: 1: Parker Road & Pinery Parkway





Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	45	6	15	86	449	6	2541	107	1152	6
v/c Ratio	0.18	0.03	0.01	0.41	0.89	0.05	1.00	0.30	0.34	0.00
Control Delay	43.2	32.8	0.0	43.4	44.9	44.0	43.3	42.2	10.2	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.2	32.8	0.0	43.4	44.9	44.0	43.3	42.2	10.2	0.0
Queue Length 50th (ft)	13	3	0	48	201	3	~639	30	116	0
Queue Length 95th (ft)	23	9	0	94	#325	16	#756	59	214	0
Internal Link Dist (ft)		553		790			779		6252	
Turn Bay Length (ft)	220		100			340		500		685
Base Capacity (vph)	284	662	1583	288	507	125	2538	366	3357	1583
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	0.16	0.01	0.01	0.30	0.89	0.05	1.00	0.29	0.34	0.00

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 (vph)	30	4	10	75	1	395	5	2165	45	95	1025	5
Future Volume (vph)	30	4	10	75	1	395	5	2165	45	95	1025	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	4.0		6.0	5.0	5.0	7.0		5.0	7.0	4.0
Lane Util. Factor	0.97	1.00	1.00		1.00	1.00	1.00	0.91		0.97	0.91	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583		1775	1583	1770	4974		3433	4988	1583
Flt Permitted	0.95	1.00	1.00		0.72	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1583		1350	1583	1770	4974		3433	4988	1583
Peak-hour factor, PHF	0.66	0.66	0.66	0.88	0.88	0.88	0.87	0.87	0.87	0.89	0.89	0.89
Adj. Flow (vph)	45	6	15	85	1	449	6	2489	52	107	1152	6
RTOR Reduction (vph)	0	0	0	0	0	78	0	2	0	0	0	0
Lane Group Flow (vph)	45	6	15	0	86	371	6	2539	0	107	1152	6
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	4%	2%
Turn Type	Prot	NA	Free	Perm	NA	pm+ov	Prot	NA		Prot	NA	Free
Protected Phases	7	4			8	1	5	2		1	6	
Permitted Phases			Free	8		8						Free
Actuated Green, G (s)	3.7	18.8	94.2		10.1	19.1	1.1	48.4		9.0	56.3	94.2
Effective Green, g (s)	3.7	18.8	94.2		10.1	19.1	1.1	48.4		9.0	56.3	94.2
Actuated g/C Ratio	0.04	0.20	1.00		0.11	0.20	0.01	0.51		0.10	0.60	1.00
Clearance Time (s)	5.0	6.0			6.0	5.0	5.0	7.0		5.0	7.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)	134	371	1583		144	320	20	2555		327	2981	1583
v/s Ratio Prot	c0.01	0.00				c0.11	0.00	c0.51		0.03	0.23	
v/s Ratio Perm			0.01		0.06	0.12						0.00
v/c Ratio	0.34	0.02	0.01		0.60	1.16	0.30	0.99		0.33	0.39	0.00
Uniform Delay, d1	44.1	30.3	0.0		40.1	37.5	46.2	22.7		39.8	9.9	0.0
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.5	0.0	0.0		6.5	100.7	8.3	16.4		0.6	0.4	0.0
Delay (s)	45.5	30.3	0.0		46.6	138.2	54.4	39.2		40.4	10.3	0.0
Level of Service	D	C	A		D	F	D	D		D	B	A
Approach Delay (s)		33.8			123.5			39.2			12.8	
Approach LOS		C			F			D			B	

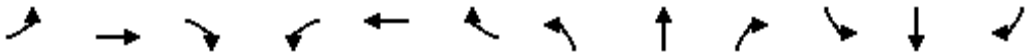
Intersection Summary			
HCM 2000 Control Delay	41.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	94.2	Sum of lost time (s)	23.0
Intersection Capacity Utilization	86.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	315	30	290	20	25	80	230	1595	15	60	2250	270
Future Volume (vph)	315	30	290	20	25	80	230	1595	15	60	2250	270
Turn Type	pm+pt	NA	Free	pm+pt	NA	Free	Prot	NA	Perm	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free	8		Free			2			Free
Detector Phase	7	4		3	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		10.0	19.0	19.0	6.0	19.0	
Minimum Split (s)	37.2	37.2		37.5	37.5		16.2	35.0	35.0	12.2	35.0	
Total Split (s)	19.0	26.0		11.0	18.0		27.0	67.0	67.0	16.0	56.0	
Total Split (%)	15.8%	21.7%		9.2%	15.0%		22.5%	55.8%	55.8%	13.3%	46.7%	
Yellow Time (s)	3.2	3.2		3.5	3.5		3.2	5.0	5.0	3.2	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	2.0	2.0	3.0	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)	5.2	5.2		5.5	5.5		6.2	7.0	7.0	6.2	7.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None		None	Max	Max	None	Max	

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 106.7
Natural Cycle: 150
Control Type: Semi Act-Uncoord

Splits and Phases: 2: Parker Road & Stroh Road



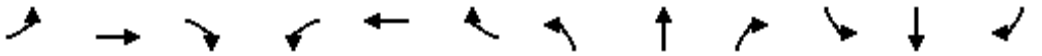


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	399	38	367	33	42	133	261	1813	17	67	2528	303
v/c Ratio	0.75	0.18	0.23	0.20	0.17	0.09	0.60	0.63	0.02	0.48	1.00	0.19
Control Delay	48.5	46.0	0.3	39.5	51.8	0.1	51.5	18.1	0.0	61.8	46.3	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.5	46.0	0.3	39.5	51.8	0.1	51.5	18.1	0.0	61.8	46.3	0.3
Queue Length 50th (ft)	131	25	0	19	15	0	95	346	0	48	~730	0
Queue Length 95th (ft)	156	51	0	31	23	0	132	402	0	94	#870	0
Internal Link Dist (ft)		589			1174			1592			712	
Turn Bay Length (ft)				315		155	350		285	530		560
Base Capacity (vph)	550	367	1583	162	419	1564	676	2894	992	164	2523	1583
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	0.10	0.23	0.20	0.10	0.09	0.39	0.63	0.02	0.41	1.00	0.19

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

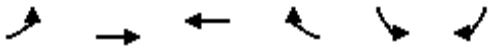
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	315	30	290	20	25	80	230	1595	15	60	2250	270
Future Volume (vph)	315	30	290	20	25	80	230	1595	15	60	2250	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2	4.0	5.5	5.5	4.0	6.2	7.0	7.0	6.2	7.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583	1770	3539	1564	3433	4988	1583	1770	4988	1583
Flt Permitted	0.41	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1490	1863	1583	1774	3539	1564	3433	4988	1583	1770	4988	1583
Peak-hour factor, PHF	0.79	0.79	0.79	0.60	0.60	0.60	0.88	0.88	0.88	0.89	0.89	0.89
Adj. Flow (vph)	399	38	367	33	42	133	261	1812	17	67	2528	303
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	7	0	0	0
Lane Group Flow (vph)	399	38	367	33	42	133	261	1813	10	67	2528	303
Confl. Peds. (#/hr)						1						
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	4%	2%
Turn Type	pm+pt	NA	Free	pm+pt	NA	Free	Prot	NA	Perm	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free	8		Free			2			Free
Actuated Green, G (s)	23.1	14.5	110.4	7.3	4.2	110.4	13.4	61.9	61.9	7.0	55.5	110.4
Effective Green, g (s)	23.1	14.5	110.4	7.3	4.2	110.4	13.4	61.9	61.9	7.0	55.5	110.4
Actuated g/C Ratio	0.21	0.13	1.00	0.07	0.04	1.00	0.12	0.56	0.56	0.06	0.50	1.00
Clearance Time (s)	5.2	5.2		5.5	5.5		6.2	7.0	7.0	6.2	7.0	
Vehicle Extension (s)	2.5	2.5		3.0	3.0		2.5	5.0	5.0	2.5	5.0	
Lane Grp Cap (vph)	547	244	1583	117	134	1564	416	2796	887	112	2507	1583
v/s Ratio Prot	c0.09	0.02		0.01	0.01		c0.08	c0.36		0.04	c0.51	
v/s Ratio Perm	c0.06		0.23	0.01		0.09			0.01			0.19
v/c Ratio	0.73	0.16	0.23	0.28	0.31	0.09	0.63	0.65	0.01	0.60	1.01	0.19
Uniform Delay, d1	39.2	42.5	0.0	49.1	51.7	0.0	46.1	16.7	10.7	50.3	27.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.5	0.2	0.3	1.3	1.3	0.1	2.6	1.2	0.0	7.0	20.0	0.3
Delay (s)	43.7	42.7	0.3	50.4	53.0	0.1	48.7	17.9	10.7	57.3	47.5	0.3
Level of Service	D	D	A	D	D	A	D	B	B	E	D	A
Approach Delay (s)		23.9			18.8			21.7			42.8	
Approach LOS		C			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	32.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	110.4	Sum of lost time (s)	23.9
Intersection Capacity Utilization	82.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	475	425	25	60	45
Future Volume (Veh/h)	5	475	425	25	60	45
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.77	0.77	0.90	0.90	0.69	0.69
Hourly flow rate (vph)	6	617	472	28	87	65
Pedestrians					1	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	501				1102	473
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	501				1102	473
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				63	89
cM capacity (veh/h)	1062				233	591

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	6	617	472	28	87	65
Volume Left	6	0	0	0	87	0
Volume Right	0	0	0	28	0	65
cSH	1062	1700	1700	1700	233	591
Volume to Capacity	0.01	0.36	0.28	0.02	0.37	0.11
Queue Length 95th (ft)	0	0	0	0	41	9
Control Delay (s)	8.4	0.0	0.0	0.0	29.4	11.8
Lane LOS	A				D	B
Approach Delay (s)	0.1		0.0		21.9	
Approach LOS					C	

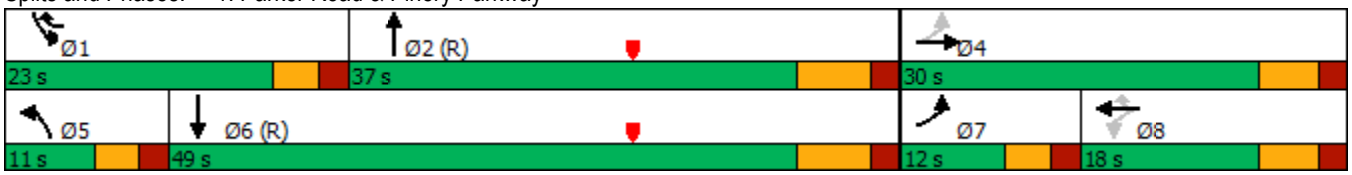
Intersection Summary				
Average Delay	2.7			
Intersection Capacity Utilization	35.0%	ICU Level of Service		A
Analysis Period (min)	15			

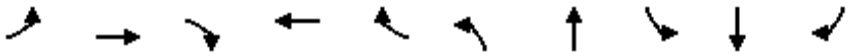
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	15	3	5	70	2	270	5	1500	405	2025	25
Future Volume (vph)	15	3	5	70	2	270	5	1500	405	2025	25
Turn Type	pm+pt	NA	Free	Perm	NA	pm+ov	Prot	NA	Prot	NA	Free
Protected Phases	7	4			8	1	5	2	1	6	
Permitted Phases	4		Free	8		8					Free
Detector Phase	7	4		8	8	1	5	2	1	6	
Switch Phase											
Minimum Initial (s)	5.0	5.0		12.0	12.0	8.0	1.0	20.0	8.0	20.0	
Minimum Split (s)	10.0	39.0		39.0	39.0	13.0	6.0	27.0	13.0	27.0	
Total Split (s)	12.0	30.0		18.0	18.0	23.0	11.0	37.0	23.0	49.0	
Total Split (%)	13.3%	33.3%		20.0%	20.0%	25.6%	12.2%	41.1%	25.6%	54.4%	
Yellow Time (s)	3.0	4.0		4.0	4.0	3.0	3.0	5.0	3.0	5.0	
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	
Total Lost Time (s)	5.0	6.0			6.0	5.0	5.0	7.0	5.0	7.0	
Lead/Lag	Lead			Lag	Lag	Lead	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None	None	None	C-Max	None	C-Max	

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 68 (76%), Referenced to phase 2:NBT and 6:SBT, Start of FDW or yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 1: Parker Road & Pinery Parkway

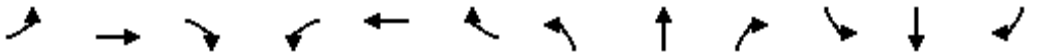




Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	35	7	12	79	297	5	1690	418	2088	26
v/c Ratio	0.11	0.04	0.01	0.44	0.47	0.04	0.75	0.69	0.62	0.02
Control Delay	33.3	31.7	0.0	44.4	11.3	40.4	27.1	41.0	13.5	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.3	31.7	0.0	44.4	11.3	40.4	27.1	41.0	13.5	0.0
Queue Length 50th (ft)	9	4	0	42	51	3	338	114	277	0
Queue Length 95th (ft)	8	6	0	87	113	14	#472	160	459	0
Internal Link Dist (ft)		553		790			779		6252	
Turn Bay Length (ft)	220		100			340		500		685
Base Capacity (vph)	334	496	1583	180	672	118	2250	686	3367	1583
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	0.10	0.01	0.01	0.44	0.44	0.04	0.75	0.61	0.62	0.02

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)	15	3	5	70	2	270	5	1500	55	405	2025	25
Future Volume (vph)	15	3	5	70	2	270	5	1500	55	405	2025	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	4.0		6.0	5.0	5.0	7.0		5.0	7.0	4.0
Lane Util. Factor	0.97	1.00	1.00		1.00	1.00	1.00	0.91		0.97	0.91	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583		1776	1583	1770	4964		3433	4988	1583
Flt Permitted	0.46	1.00	1.00		0.73	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1677	1863	1583		1354	1583	1770	4964		3433	4988	1583
Peak-hour factor, PHF	0.43	0.43	0.43	0.91	0.91	0.91	0.92	0.92	0.92	0.97	0.97	0.97
Adj. Flow (vph)	35	7	12	77	2	297	5	1630	60	418	2088	26
RTOR Reduction (vph)	0	0	0	0	0	116	0	3	0	0	0	0
Lane Group Flow (vph)	35	7	12	0	79	181	5	1687	0	418	2088	26
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	4%	2%
Turn Type	pm+pt	NA	Free	Perm	NA	pm+ov	Prot	NA		Prot	NA	Free
Protected Phases	7	4			8	1	5	2		1	6	
Permitted Phases	4		Free	8		8						Free
Actuated Green, G (s)	18.6	18.6	90.0		9.6	25.4	1.2	37.6		15.8	52.2	90.0
Effective Green, g (s)	18.6	18.6	90.0		9.6	25.4	1.2	37.6		15.8	52.2	90.0
Actuated g/C Ratio	0.21	0.21	1.00		0.11	0.28	0.01	0.42		0.18	0.58	1.00
Clearance Time (s)	5.0	6.0			6.0	5.0	5.0	7.0		5.0	7.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)	424	385	1583		144	446	23	2073		602	2893	1583
v/s Ratio Prot	c0.00	0.00				0.07	0.00	c0.34		c0.12	c0.42	
v/s Ratio Perm	0.01		0.01		c0.06	0.04						0.02
v/c Ratio	0.08	0.02	0.01		0.55	0.41	0.22	0.81		0.69	0.72	0.02
Uniform Delay, d1	28.8	28.4	0.0		38.1	26.2	43.9	23.1		34.8	13.7	0.0
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.1	0.0	0.0		4.2	0.6	4.7	3.6		3.5	1.6	0.0
Delay (s)	28.8	28.4	0.0		42.4	26.8	48.7	26.7		38.3	15.2	0.0
Level of Service	C	C	A		D	C	D	C		D	B	A
Approach Delay (s)		22.4			30.1			26.8			18.9	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	22.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

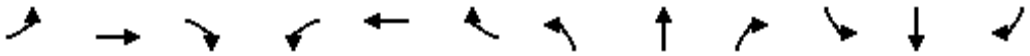
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	315	30	290	20	25	80	230	1595	15	60	2250	270
Future Volume (vph)	315	30	290	20	25	80	230	1595	15	60	2250	270
Turn Type	pm+pt	NA	Free	pm+pt	NA	Free	Prot	NA	Perm	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free	8		Free			2			Free
Detector Phase	7	4		3	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		10.0	19.0	19.0	6.0	19.0	
Minimum Split (s)	37.2	37.2		37.5	37.5		16.2	35.0	35.0	12.2	35.0	
Total Split (s)	19.0	26.0		11.0	18.0		27.0	67.0	67.0	16.0	56.0	
Total Split (%)	15.8%	21.7%		9.2%	15.0%		22.5%	55.8%	55.8%	13.3%	46.7%	
Yellow Time (s)	3.2	3.2		3.5	3.5		3.2	5.0	5.0	3.2	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	2.0	2.0	3.0	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)	5.2	5.2		5.5	5.5		6.2	7.0	7.0	6.2	7.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None		None	Max	Max	None	Max	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 105.9
Natural Cycle: 150
Control Type: Semi Act-Uncoord

Splits and Phases: 2: Parker Road & Stroh Road

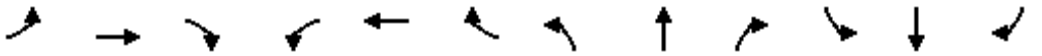




Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	339	32	312	23	29	93	250	1734	16	65	2419	290
v/c Ratio	0.65	0.15	0.20	0.14	0.12	0.06	0.60	0.59	0.02	0.47	0.94	0.18
Control Delay	44.7	45.6	0.3	38.0	51.4	0.1	51.5	17.2	0.0	61.0	35.1	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.7	45.6	0.3	38.0	51.4	0.1	51.5	17.2	0.0	61.0	35.1	0.3
Queue Length 50th (ft)	109	21	0	13	10	0	91	322	0	46	619	0
Queue Length 95th (ft)	155	51	0	34	25	0	131	385	0	93	#811	0
Internal Link Dist (ft)		589			1174			1592			712	
Turn Bay Length (ft)				315		155	350		285	530		560
Base Capacity (vph)	553	370	1583	163	422	1564	682	2918	999	165	2560	1583
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	0.61	0.09	0.20	0.14	0.07	0.06	0.37	0.59	0.02	0.39	0.94	0.18

Intersection Summary

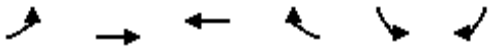
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	315	30	290	20	25	80	230	1595	15	60	2250	270
Future Volume (vph)	315	30	290	20	25	80	230	1595	15	60	2250	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2	4.0	5.5	5.5	4.0	6.2	7.0	7.0	6.2	7.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583	1770	3539	1564	3433	4988	1583	1770	4988	1583
Flt Permitted	0.42	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1522	1863	1583	1863	3539	1564	3433	4988	1583	1770	4988	1583
Peak-hour factor, PHF	0.93	0.93	0.93	0.86	0.86	0.86	0.92	0.92	0.92	0.93	0.93	0.93
Adj. Flow (vph)	339	32	312	23	29	93	250	1734	16	65	2419	290
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	7	0	0	0
Lane Group Flow (vph)	339	32	312	23	29	93	250	1734	9	65	2419	290
Confl. Peds. (#/hr)						1						
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	4%	2%
Turn Type	pm+pt	NA	Free	pm+pt	NA	Free	Prot	NA	Perm	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free	8		Free			2			Free
Actuated Green, G (s)	22.4	13.8	109.6	7.1	4.0	109.6	12.9	62.0	62.0	6.8	55.9	109.6
Effective Green, g (s)	22.4	13.8	109.6	7.1	4.0	109.6	12.9	62.0	62.0	6.8	55.9	109.6
Actuated g/C Ratio	0.20	0.13	1.00	0.06	0.04	1.00	0.12	0.57	0.57	0.06	0.51	1.00
Clearance Time (s)	5.2	5.2		5.5	5.5		6.2	7.0	7.0	6.2	7.0	
Vehicle Extension (s)	2.5	2.5		3.0	3.0		2.5	5.0	5.0	2.5	5.0	
Lane Grp Cap (vph)	535	234	1583	118	129	1564	404	2821	895	109	2544	1583
v/s Ratio Prot	c0.07	0.02		0.01	0.01		c0.07	c0.35		0.04	c0.49	
v/s Ratio Perm	c0.05		0.20	0.01		0.06			0.01			0.18
v/c Ratio	0.63	0.14	0.20	0.19	0.22	0.06	0.62	0.61	0.01	0.60	0.95	0.18
Uniform Delay, d1	38.6	42.6	0.0	48.6	51.3	0.0	46.0	15.8	10.4	50.1	25.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.1	0.2	0.3	0.8	0.9	0.1	2.4	1.0	0.0	7.1	9.6	0.3
Delay (s)	40.8	42.8	0.3	49.4	52.2	0.1	48.4	16.9	10.4	57.2	35.1	0.3
Level of Service	D	D	A	D	D	A	D	B	B	E	D	A
Approach Delay (s)		22.4			18.3			20.8			32.0	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	26.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	109.6	Sum of lost time (s)	23.9
Intersection Capacity Utilization	82.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	55	595	385	30	25	35
Future Volume (Veh/h)	55	595	385	30	25	35
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.96	0.96	0.95	0.95	0.78	0.78
Hourly flow rate (vph)	57	620	405	32	32	45
Pedestrians					15	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	452				1154	420
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	452				1154	420
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				84	93
cM capacity (veh/h)	1093				204	624

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	57	620	405	32	32	45
Volume Left	57	0	0	0	32	0
Volume Right	0	0	0	32	0	45
cSH	1093	1700	1700	1700	204	624
Volume to Capacity	0.05	0.36	0.24	0.02	0.16	0.07
Queue Length 95th (ft)	4	0	0	0	14	6
Control Delay (s)	8.5	0.0	0.0	0.0	25.9	11.2
Lane LOS	A				D	B
Approach Delay (s)	0.7		0.0		17.3	
Approach LOS					C	

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	41.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	270	20	100	75	30	405	240	2115	95	1035	200
Future Volume (vph)	270	20	100	75	30	405	240	2115	95	1035	200
Turn Type	pm+pt	NA	Free	Perm	NA	pm+ov	Prot	NA	Prot	NA	Free
Protected Phases	7	4			8	1	5	2	1	6	
Permitted Phases	4		Free	8		8					Free
Detector Phase	7	4		8	8	1	5	2	1	6	
Switch Phase											
Minimum Initial (s)	5.0	5.0		12.0	12.0	8.0	1.0	20.0	8.0	20.0	
Minimum Split (s)	10.0	39.0		39.0	39.0	13.0	6.0	27.0	13.0	27.0	
Total Split (s)	12.0	36.0		24.0	24.0	14.0	31.0	70.0	14.0	53.0	
Total Split (%)	10.0%	30.0%		20.0%	20.0%	11.7%	25.8%	58.3%	11.7%	44.2%	
Yellow Time (s)	3.0	4.0		4.0	4.0	3.0	3.0	5.0	3.0	5.0	
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)	5.0	6.0		6.0	6.0	5.0	5.0	7.0	5.0	7.0	
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None	None	None	C-Max	None	C-Max	
Act Effct Green (s)	19.7	18.6	120.0	13.9	13.9	21.3	14.6	70.7	9.0	65.0	120.0
Actuated g/C Ratio	0.16	0.16	1.00	0.12	0.12	0.18	0.12	0.59	0.08	0.54	1.00
v/c Ratio	0.78	0.04	0.07	0.53	0.16	1.19	0.64	0.82	0.40	0.42	0.14
Control Delay	58.4	37.2	0.1	61.8	48.4	138.1	57.0	24.1	57.9	18.5	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	58.4	37.2	0.1	61.8	48.4	138.1	57.0	24.1	57.9	18.5	0.2
LOS	E	D	A	E	D	F	E	C	E	B	A
Approach Delay		42.3			121.6			27.4		18.6	
Approach LOS		D			F			C		B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 16 (13%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.19	
Intersection Signal Delay: 36.8	Intersection LOS: D
Intersection Capacity Utilization 88.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1: Parker Road & Pinery Parkway





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	307	23	114	85	34	460	267	2400	103	1125	217
v/c Ratio	0.78	0.04	0.07	0.53	0.16	1.19	0.64	0.82	0.40	0.42	0.14
Control Delay	58.4	37.2	0.1	61.8	48.4	138.1	57.0	24.1	57.9	18.5	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	58.4	37.2	0.1	61.8	48.4	138.1	57.0	24.1	57.9	18.5	0.2
Queue Length 50th (ft)	106	7	0	64	24	~303	103	538	39	189	0
Queue Length 95th (ft)	138	17	0	111	54	#471	142	681	69	266	0
Internal Link Dist (ft)		553			790			779		1277	
Turn Bay Length (ft)	220		100	100			340		500		
Base Capacity (vph)	396	884	1583	207	279	385	743	2931	257	2702	1583
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	0.78	0.03	0.07	0.41	0.12	1.19	0.36	0.82	0.40	0.42	0.14

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.

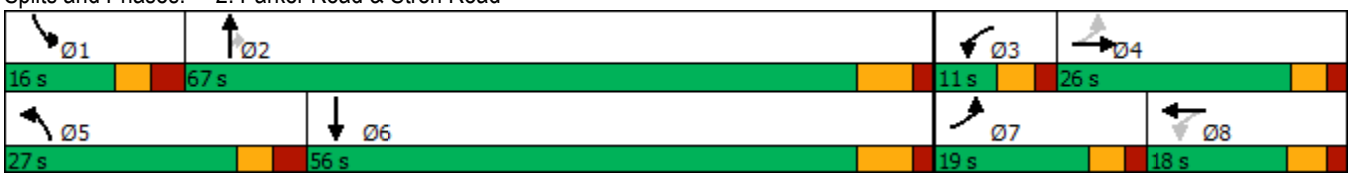
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	270	20	100	75	30	405	240	2115	45	95	1035	200
Future Volume (vph)	270	20	100	75	30	405	240	2115	45	95	1035	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	4.0	6.0	6.0	5.0	5.0	7.0		5.0	7.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	1.00	1.00	0.97	0.91		0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	1863	1583	3433	4974		3433	4988	1583
Flt Permitted	0.51	1.00	1.00	0.74	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1851	3539	1583	1381	1863	1583	3433	4974		3433	4988	1583
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.90	0.90	0.90	0.92	0.92	0.92
Adj. Flow (vph)	307	23	114	85	34	460	267	2350	50	103	1125	217
RTOR Reduction (vph)	0	0	0	0	0	105	0	2	0	0	0	0
Lane Group Flow (vph)	307	23	114	85	34	355	267	2398	0	103	1125	217
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	4%	2%
Turn Type	pm+pt	NA	Free	Perm	NA	pm+ov	Prot	NA		Prot	NA	Free
Protected Phases	7	4			8	1	5	2		1	6	
Permitted Phases	4		Free	8		8						Free
Actuated Green, G (s)	23.5	23.5	120.0	11.5	11.5	20.5	14.6	69.5		9.0	63.9	120.0
Effective Green, g (s)	23.5	23.5	120.0	11.5	11.5	20.5	14.6	69.5		9.0	63.9	120.0
Actuated g/C Ratio	0.20	0.20	1.00	0.10	0.10	0.17	0.12	0.58		0.08	0.53	1.00
Clearance Time (s)	5.0	6.0		6.0	6.0	5.0	5.0	7.0		5.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)	454	693	1583	132	178	270	417	2880		257	2656	1583
v/s Ratio Prot	c0.04	0.01			0.02	c0.10	0.08	c0.48		0.03	0.23	
v/s Ratio Perm	0.09		0.07	0.06		0.13						0.14
v/c Ratio	0.68	0.03	0.07	0.64	0.19	1.31	0.64	0.83		0.40	0.42	0.14
Uniform Delay, d1	44.0	39.1	0.0	52.3	50.0	49.8	50.2	20.5		52.9	16.9	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.0	0.0	0.1	10.3	0.5	165.0	3.3	3.0		1.0	0.5	0.2
Delay (s)	48.0	39.1	0.1	62.6	50.5	214.8	53.5	23.5		54.0	17.4	0.2
Level of Service	D	D	A	E	D	F	D	C		D	B	A
Approach Delay (s)		35.2			182.8			26.5			17.4	
Approach LOS		D			F			C			B	

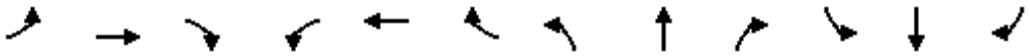
Intersection Summary			
HCM 2000 Control Delay	42.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	88.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	315	30	235	15	30	55	370	2505	20	70	1295	325
Future Volume (vph)	315	30	235	15	30	55	370	2505	20	70	1295	325
Turn Type	pm+pt	NA	Free	pm+pt	NA	Free	Prot	NA	Perm	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free	8		Free			2			Free
Detector Phase	7	4		3	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		10.0	19.0	19.0	6.0	19.0	
Minimum Split (s)	37.2	37.2		37.5	37.5		16.2	35.0	35.0	12.2	35.0	
Total Split (s)	19.0	26.0		11.0	18.0		27.0	67.0	67.0	16.0	56.0	
Total Split (%)	15.8%	21.7%		9.2%	15.0%		22.5%	55.8%	55.8%	13.3%	46.7%	
Yellow Time (s)	3.2	3.2		3.5	3.5		3.2	5.0	5.0	3.2	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	2.0	2.0	3.0	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)	5.2	5.2		5.5	5.5		6.2	7.0	7.0	6.2	7.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None		None	Max	Max	None	Max	
Act Effct Green (s)	20.6	14.0	107.1	9.7	7.3	107.1	16.9	62.2	62.2	8.6	51.0	107.1
Actuated g/C Ratio	0.19	0.13	1.00	0.09	0.07	1.00	0.16	0.58	0.58	0.08	0.48	1.00
v/c Ratio	0.73	0.15	0.18	0.12	0.17	0.05	0.75	0.95	0.02	0.54	0.59	0.22
Control Delay	47.6	43.7	0.3	37.7	51.9	0.1	53.1	32.6	0.1	64.0	23.3	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	47.6	43.7	0.3	37.7	51.9	0.1	53.1	32.6	0.1	64.0	23.3	0.3
LOS	D	D	A	D	D	A	D	C	A	E	C	A
Approach Delay		28.2			21.3			35.0			20.6	
Approach LOS		C			C			D			C	

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 107.1		
Natural Cycle: 150		
Control Type: Semi Act-Uncoord		
Maximum v/c Ratio: 0.95		
Intersection Signal Delay: 29.4	Intersection LOS: C	
Intersection Capacity Utilization 84.4%	ICU Level of Service E	
Analysis Period (min) 15		

Splits and Phases: 2: Parker Road & Stroh Road



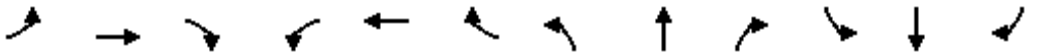


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	384	37	287	20	40	73	407	2753	22	76	1408	353
v/c Ratio	0.73	0.15	0.18	0.12	0.17	0.05	0.75	0.95	0.02	0.54	0.59	0.22
Control Delay	47.6	43.7	0.3	37.7	51.9	0.1	53.1	32.6	0.1	64.0	23.3	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.6	43.7	0.3	37.7	51.9	0.1	53.1	32.6	0.1	64.0	23.3	0.3
Queue Length 50th (ft)	127	22	0	12	15	0	149	~813	0	54	284	0
Queue Length 95th (ft)	157	51	0	27	27	0	200	#918	0	105	355	0
Internal Link Dist (ft)		589			1174			1592			712	
Turn Bay Length (ft)				315		155	350		285	530		560
Base Capacity (vph)	547	383	1583	160	417	1564	673	2897	993	163	2374	1583
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	0.70	0.10	0.18	0.13	0.10	0.05	0.60	0.95	0.02	0.47	0.59	0.22

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 (vph)	315	30	235	15	30	55	370	2505	20	70	1295	325
Future Volume (vph)	315	30	235	15	30	55	370	2505	20	70	1295	325
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2	4.0	5.5	5.5	4.0	6.2	7.0	7.0	6.2	7.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583	1770	3539	1564	3433	4988	1583	1770	4988	1583
Flt Permitted	0.41	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1490	1863	1583	1774	3539	1564	3433	4988	1583	1770	4988	1583
Peak-hour factor, PHF	0.82	0.82	0.82	0.75	0.75	0.75	0.91	0.91	0.91	0.92	0.92	0.92
Adj. Flow (vph)	384	37	287	20	40	73	407	2753	22	76	1408	353
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	10	0	0	0
Lane Group Flow (vph)	384	37	287	20	40	73	407	2753	12	76	1408	353
Confl. Peds. (#/hr)						1						
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	4%	2%
Turn Type	pm+pt	NA	Free	pm+pt	NA	Free	Prot	NA	Perm	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free	8		Free			2			Free
Actuated Green, G (s)	23.1	15.6	110.8	6.2	4.2	110.8	16.9	62.2	62.2	7.1	52.4	110.8
Effective Green, g (s)	23.1	15.6	110.8	6.2	4.2	110.8	16.9	62.2	62.2	7.1	52.4	110.8
Actuated g/C Ratio	0.21	0.14	1.00	0.06	0.04	1.00	0.15	0.56	0.56	0.06	0.47	1.00
Clearance Time (s)	5.2	5.2		5.5	5.5		6.2	7.0	7.0	6.2	7.0	
Vehicle Extension (s)	2.5	2.5		3.0	3.0		2.5	5.0	5.0	2.5	5.0	
Lane Grp Cap (vph)	545	262	1583	99	134	1564	523	2800	888	113	2358	1583
v/s Ratio Prot	c0.09	0.02		0.00	0.01		c0.12	c0.55		0.04	0.28	
v/s Ratio Perm	c0.06		0.18	0.01		0.05			0.01			0.22
v/c Ratio	0.70	0.14	0.18	0.20	0.30	0.05	0.78	0.98	0.01	0.67	0.60	0.22
Uniform Delay, d1	39.2	41.7	0.0	49.9	51.9	0.0	45.1	23.8	10.7	50.7	21.4	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.8	0.2	0.3	1.0	1.3	0.1	6.9	13.5	0.0	13.4	1.1	0.3
Delay (s)	43.0	41.9	0.3	50.9	53.1	0.1	52.1	37.3	10.8	64.1	22.6	0.3
Level of Service	D	D	A	D	D	A	D	D	B	E	C	A
Approach Delay (s)		25.6			23.7			39.0			20.0	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	31.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	110.8	Sum of lost time (s)	23.9
Intersection Capacity Utilization	84.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	495	435	30	70	45
Future Vol, veh/h	5	495	435	30	70	45
Conflicting Peds, #/hr	0	0	0	1	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	240	-	-	0	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	77	80	93	90	69	69
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	619	468	33	101	65

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	502	0	-	0	1100	469
Stage 1	-	-	-	-	469	-
Stage 2	-	-	-	-	631	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1062	-	-	-	235	594
Stage 1	-	-	-	-	630	-
Stage 2	-	-	-	-	530	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1061	-	-	-	233	593
Mov Cap-2 Maneuver	-	-	-	-	233	-
Stage 1	-	-	-	-	626	-
Stage 2	-	-	-	-	529	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	24
HCM LOS			C

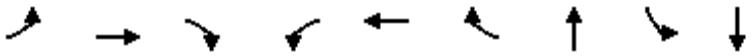
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1061	-	-	-	233	593
HCM Lane V/C Ratio	0.006	-	-	-	0.435	0.11
HCM Control Delay (s)	8.4	-	-	-	31.9	11.8
HCM Lane LOS	A	-	-	-	D	B
HCM 95th %tile Q(veh)	0	-	-	-	2.1	0.4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	5	190	20	110	170	160	15	5	125	5
Future Volume (vph)	5	190	20	110	170	160	15	5	125	5
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases		2		1	6			8		4
Permitted Phases	2		2	6		6	8		4	
Detector Phase	2	2	2	1	6	6	8	8	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
Minimum Split (s)	22.5	22.5	22.5	9.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	48.0	48.0	48.0	14.0	62.0	62.0	38.0	38.0	38.0	38.0
Total Split (%)	48.0%	48.0%	48.0%	14.0%	62.0%	62.0%	38.0%	38.0%	38.0%	38.0%
Yellow Time (s)	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
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)	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Lead/Lag	Lag	Lag	Lag	Lead						
Lead-Lag Optimize?										
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None
Act Effct Green (s)	62.0	62.0	62.0	74.2	74.2	74.2		16.8	16.8	16.8
Actuated g/C Ratio	0.62	0.62	0.62	0.74	0.74	0.74		0.17	0.17	0.17
v/c Ratio	0.01	0.10	0.02	0.15	0.08	0.15		0.32	0.75	0.04
Control Delay	10.2	9.0	0.1	4.9	4.3	1.1		13.6	61.5	23.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	10.2	9.0	0.1	4.9	4.3	1.1		13.6	61.5	23.3
LOS	B	A	A	A	A	A		B	E	C
Approach Delay		8.2			3.3			13.6		58.6
Approach LOS		A			A			B		E

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 14 (14%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 14.0	Intersection LOS: B
Intersection Capacity Utilization 36.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 4: Access C & Pinery Parkway





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	6	224	24	129	200	188	106	147	12
v/c Ratio	0.01	0.10	0.02	0.15	0.08	0.15	0.32	0.75	0.04
Control Delay	10.2	9.0	0.1	4.9	4.3	1.1	13.6	61.5	23.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.2	9.0	0.1	4.9	4.3	1.1	13.6	61.5	23.3
Queue Length 50th (ft)	1	27	0	19	15	0	13	90	3
Queue Length 95th (ft)	8	52	0	44	31	17	49	137	16
Internal Link Dist (ft)		575			553		284		431
Turn Bay Length (ft)	80		80	160				150	
Base Capacity (vph)	722	2194	1005	856	2625	1223	589	391	581
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.10	0.02	0.15	0.08	0.15	0.18	0.38	0.02

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	190	20	110	170	160	15	5	70	125	5	5
Future Volume (vph)	5	190	20	110	170	160	15	5	70	125	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5		4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.90		1.00	0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1654		1770	1723	
Flt Permitted	0.63	1.00	1.00	0.57	1.00	1.00		0.96		0.63	1.00	
Satd. Flow (perm)	1166	3539	1583	1063	3539	1583		1596		1170	1723	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	6	224	24	129	200	188	18	6	82	147	6	6
RTOR Reduction (vph)	0	0	9	0	0	49	0	68	0	0	5	0
Lane Group Flow (vph)	6	224	15	129	200	139	0	38	0	147	7	0
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	62.0	62.0	62.0	74.2	74.2	74.2		16.8		16.8	16.8	
Effective Green, g (s)	62.0	62.0	62.0	74.2	74.2	74.2		16.8		16.8	16.8	
Actuated g/C Ratio	0.62	0.62	0.62	0.74	0.74	0.74		0.17		0.17	0.17	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5		4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)	722	2194	981	843	2625	1174		268		196	289	
v/s Ratio Prot		0.06		c0.01	0.06						0.00	
v/s Ratio Perm	0.01		0.01	c0.10		0.09		0.02		c0.13		
v/c Ratio	0.01	0.10	0.02	0.15	0.08	0.12		0.14		0.75	0.02	
Uniform Delay, d1	7.3	7.7	7.3	3.7	3.5	3.7		35.5		39.6	34.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.1	0.0	0.1	0.1	0.2		0.2		14.8	0.0	
Delay (s)	7.3	7.8	7.3	3.8	3.6	3.9		35.7		54.4	34.8	
Level of Service	A	A	A	A	A	A		D		D	C	
Approach Delay (s)		7.7			3.7			35.7			53.0	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	15.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	36.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	60	0	20	90	85	0	0	50	110	0	0
Future Vol, veh/h	5	60	0	20	90	85	0	0	50	110	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	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	150	-	150	150	-	150	150	-	-	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	5	65	0	22	98	92	0	0	54	120	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	190	0	0	65	0	0	168	309	33	185	217	49
Stage 1	-	-	-	-	-	-	75	75	-	142	142	-
Stage 2	-	-	-	-	-	-	93	234	-	43	75	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1381	-	-	1535	-	-	780	604	1033	759	680	1009
Stage 1	-	-	-	-	-	-	926	832	-	846	778	-
Stage 2	-	-	-	-	-	-	904	710	-	966	832	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1381	-	-	1535	-	-	769	593	1033	709	668	1009
Mov Cap-2 Maneuver	-	-	-	-	-	-	769	593	-	709	668	-
Stage 1	-	-	-	-	-	-	922	829	-	843	767	-
Stage 2	-	-	-	-	-	-	891	700	-	912	829	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.8	8.7	11.1
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	1033	1381	-	-	1535	-	-	709	-
HCM Lane V/C Ratio	-	0.053	0.004	-	-	0.014	-	-	0.169	-
HCM Control Delay (s)	0	8.7	7.6	-	-	7.4	-	-	11.1	0
HCM Lane LOS	A	A	A	-	-	A	-	-	B	A
HCM 95th %tile Q(veh)	-	0.2	0	-	-	0	-	-	0.6	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	35	0	2875	1310	195
Future Vol, veh/h	0	35	0	2875	1310	195
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	Free
Storage Length	-	0	-	-	-	0
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	38	0	3125	1424	212

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	-	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	0	-	-	0
Stage 1	0	0	0	-	-	0
Stage 2	0	0	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	0	-
HCM Lane LOS	-	A	-
HCM 95th %tile Q(veh)	-	-	-

Intersection	
Int Delay, s/veh	7.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	85	0	0	65
Future Vol, veh/h	0	0	85	0	0	65
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	-	0
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	0	92	0	0	71

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1	0	-	1
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.14	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.22	-	-	3.32
Pot Cap-1 Maneuver	-	-	1620	-	0	1083
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1620	-	-	1083
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

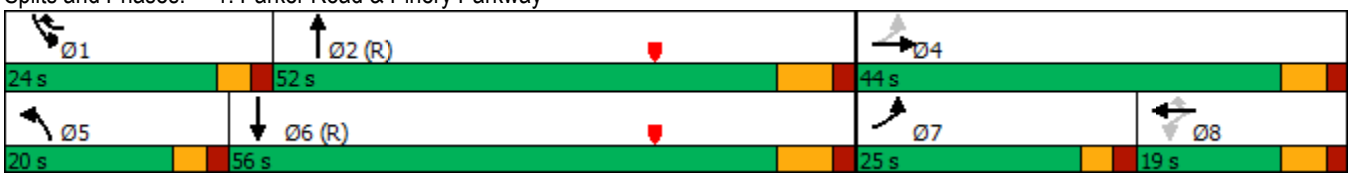
Approach	EB	WB	NB
HCM Control Delay, s	0	7.4	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1083	-	-	1620	-
HCM Lane V/C Ratio	0.065	-	-	0.057	-
HCM Control Delay (s)	8.6	-	-	7.4	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.2	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	720	55	290	70	45	285	345	1405	405	2045	285
Future Volume (vph)	720	55	290	70	45	285	345	1405	405	2045	285
Turn Type	pm+pt	NA	Free	Perm	NA	pm+ov	Prot	NA	Prot	NA	Free
Protected Phases	7	4			8	1	5	2	1	6	
Permitted Phases	4		Free	8		8					Free
Detector Phase	7	4		8	8	1	5	2	1	6	
Switch Phase											
Minimum Initial (s)	5.0	5.0		12.0	12.0	8.0	1.0	20.0	8.0	20.0	
Minimum Split (s)	10.0	39.0		39.0	39.0	13.0	6.0	27.0	13.0	27.0	
Total Split (s)	25.0	44.0		19.0	19.0	24.0	20.0	52.0	24.0	56.0	
Total Split (%)	20.8%	36.7%		15.8%	15.8%	20.0%	16.7%	43.3%	20.0%	46.7%	
Yellow Time (s)	3.0	4.0		4.0	4.0	3.0	3.0	5.0	3.0	5.0	
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)	5.0	6.0		6.0	6.0	5.0	5.0	7.0	5.0	7.0	
Lead/Lag	Lead			Lag	Lag	Lead	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?											
Recall Mode	None	None		None	None	None	None	C-Max	None	C-Max	
Act Effct Green (s)	34.8	31.2	120.0	12.4	12.4	32.8	14.9	50.2	18.0	53.2	120.0
Actuated g/C Ratio	0.29	0.26	1.00	0.10	0.10	0.27	0.12	0.42	0.15	0.44	1.00
v/c Ratio	0.99	0.07	0.20	0.56	0.25	0.64	0.88	0.76	0.81	0.95	0.19
Control Delay	70.3	29.5	0.3	67.3	53.0	32.9	73.8	34.2	62.6	44.3	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	70.3	29.5	0.3	67.3	53.0	32.9	73.8	34.2	62.6	44.3	0.3
LOS	E	C	A	E	D	C	E	C	E	D	A
Approach Delay		49.2			41.2			41.7		42.5	
Approach LOS		D			D			D		D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 112 (93%), Referenced to phase 2:NBT and 6:SBT, Start of FDW or yellow	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay: 43.4	Intersection LOS: D
Intersection Capacity Utilization 91.6%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 1: Parker Road & Pinery Parkway



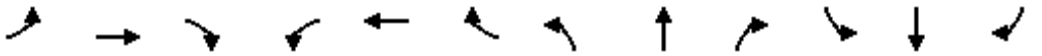


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	783	60	315	77	49	313	375	1587	418	2108	294
v/c Ratio	0.99	0.07	0.20	0.56	0.25	0.64	0.88	0.76	0.81	0.95	0.19
Control Delay	70.3	29.5	0.3	67.3	53.0	32.9	73.8	34.2	62.6	44.3	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.3	29.5	0.3	67.3	53.0	32.9	73.8	34.2	62.6	44.3	0.3
Queue Length 50th (ft)	275	17	0	58	36	149	148	403	161	~633	0
Queue Length 95th (ft)	#389	33	0	110	75	243	#231	473	219	#738	0
Internal Link Dist (ft)		553			790			779		1277	
Turn Bay Length (ft)	220		100	100			340		500		
Base Capacity (vph)	787	1120	1583	144	201	505	429	2078	543	2213	1583
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	0.99	0.05	0.20	0.53	0.24	0.62	0.87	0.76	0.77	0.95	0.19

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.



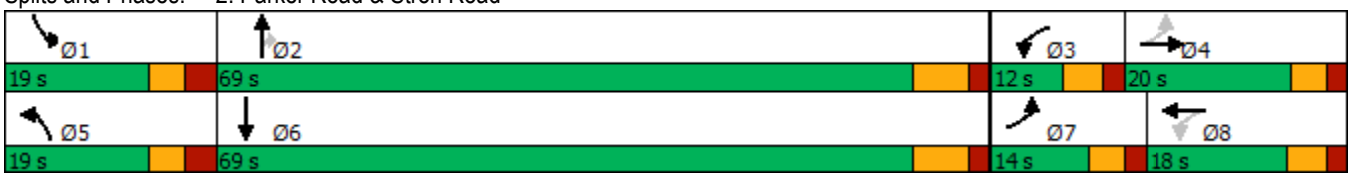
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	720	55	290	70	45	285	345	1405	55	405	2045	285
Future Volume (vph)	720	55	290	70	45	285	345	1405	55	405	2045	285
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	4.0	6.0	6.0	5.0	5.0	7.0		5.0	7.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	1.00	1.00	0.97	0.91		0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	1863	1583	3433	4963		3433	4988	1583
Flt Permitted	0.48	1.00	1.00	0.72	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1747	3539	1583	1333	1863	1583	3433	4963		3433	4988	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.91	0.91	0.91	0.92	0.92	0.92	0.97	0.97	0.97
Adj. Flow (vph)	783	60	315	77	49	313	375	1527	60	418	2108	294
RTOR Reduction (vph)	0	0	0	0	0	63	0	4	0	0	0	0
Lane Group Flow (vph)	783	60	315	77	49	250	375	1583	0	418	2108	294
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	4%	2%
Turn Type	pm+pt	NA	Free	Perm	NA	pm+ov	Prot	NA		Prot	NA	Free
Protected Phases	7	4			8	1	5	2		1	6	
Permitted Phases	4		Free	8		8						Free
Actuated Green, G (s)	35.0	35.0	120.0	10.0	10.0	28.0	14.9	49.0		18.0	52.1	120.0
Effective Green, g (s)	35.0	35.0	120.0	10.0	10.0	28.0	14.9	49.0		18.0	52.1	120.0
Actuated g/C Ratio	0.29	0.29	1.00	0.08	0.08	0.23	0.12	0.41		0.15	0.43	1.00
Clearance Time (s)	5.0	6.0		6.0	6.0	5.0	5.0	7.0		5.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)	790	1032	1583	111	155	369	426	2026		514	2165	1583
v/s Ratio Prot	c0.17	0.02			0.03	0.10	0.11	0.32		c0.12	c0.42	
v/s Ratio Perm	c0.12		c0.20	0.06		0.06						0.19
v/c Ratio	0.99	0.06	0.20	0.69	0.32	0.68	0.88	0.78		0.81	0.97	0.19
Uniform Delay, d1	40.3	30.6	0.0	53.5	51.8	41.9	51.7	30.8		49.4	33.3	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	29.7	0.0	0.3	17.1	1.2	4.9	18.6	3.1		9.5	14.1	0.3
Delay (s)	70.0	30.6	0.3	70.6	53.0	46.8	70.3	33.9		58.9	47.3	0.3
Level of Service	E	C	A	E	D	D	E	C		E	D	A
Approach Delay (s)		49.0			51.7			40.9			44.1	
Approach LOS		D			D			D			D	

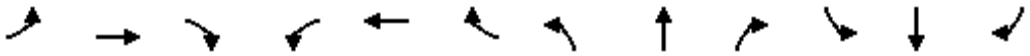
Intersection Summary			
HCM 2000 Control Delay	44.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	91.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	315	30	330	20	25	80	280	2145	15	60	2695	270
Future Volume (vph)	315	30	330	20	25	80	280	2145	15	60	2695	270
Turn Type	pm+pt	NA	Free	pm+pt	NA	Free	Prot	NA	Perm	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free	8		Free			2			Free
Detector Phase	7	4		3	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		10.0	19.0	19.0	6.0	19.0	
Minimum Split (s)	37.2	37.2		37.5	37.5		16.2	35.0	35.0	12.2	35.0	
Total Split (s)	14.0	20.0		12.0	18.0		19.0	69.0	69.0	19.0	69.0	
Total Split (%)	11.7%	16.7%		10.0%	15.0%		15.8%	57.5%	57.5%	15.8%	57.5%	
Yellow Time (s)	3.2	3.2		3.5	3.5		3.2	5.0	5.0	3.2	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	2.0	2.0	3.0	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)	5.2	5.2		5.5	5.5		6.2	7.0	7.0	6.2	7.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None		None	Max	Max	None	Max	
Act Effct Green (s)	14.3	8.5	109.2	10.6	7.1	109.2	12.4	68.3	68.3	9.0	62.2	109.2
Actuated g/C Ratio	0.13	0.08	1.00	0.10	0.07	1.00	0.11	0.63	0.63	0.08	0.57	1.00
v/c Ratio	0.95	0.22	0.22	0.13	0.13	0.06	0.78	0.75	0.02	0.45	1.02	0.18
Control Delay	82.4	52.8	0.3	41.2	51.7	0.1	62.8	18.9	0.0	58.5	46.8	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	82.4	52.8	0.3	41.2	51.7	0.1	62.8	18.9	0.0	58.5	46.8	0.3
LOS	F	D	A	D	D	A	E	B	A	E	D	A
Approach Delay		41.0			16.9			23.8			42.9	
Approach LOS		D			B			C			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 109.2	
Natural Cycle: 150	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 34.6	Intersection LOS: C
Intersection Capacity Utilization 91.4%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 2: Parker Road & Stroh Road



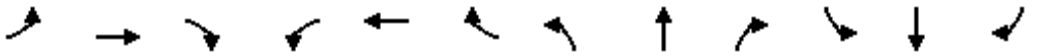


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	339	32	355	23	29	93	304	2332	16	65	2898	290
v/c Ratio	0.95	0.22	0.22	0.13	0.13	0.06	0.78	0.75	0.02	0.45	1.02	0.18
Control Delay	82.4	52.8	0.3	41.2	51.7	0.1	62.8	18.9	0.0	58.5	46.8	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	82.4	52.8	0.3	41.2	51.7	0.1	62.8	18.9	0.0	58.5	46.8	0.3
Queue Length 50th (ft)	117	22	0	14	11	0	114	477	0	47	~870	0
Queue Length 95th (ft)	#190	55	0	36	25	0	#180	598	0	90	#967	0
Internal Link Dist (ft)		589			1174			1592			712	
Turn Bay Length (ft)				315		155	350		285	530		560
Base Capacity (vph)	355	253	1583	174	406	1564	403	3119	1038	208	2842	1583
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	0.13	0.22	0.13	0.07	0.06	0.75	0.75	0.02	0.31	1.02	0.18

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 (vph)	315	30	330	20	25	80	280	2145	15	60	2695	270
Future Volume (vph)	315	30	330	20	25	80	280	2145	15	60	2695	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2	4.0	5.5	5.5	4.0	6.2	7.0	7.0	6.2	7.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583	1770	3539	1564	3433	4988	1583	1770	4988	1583
Flt Permitted	0.43	1.00	1.00	0.98	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1571	1863	1583	1817	3539	1564	3433	4988	1583	1770	4988	1583
Peak-hour factor, PHF	0.93	0.93	0.93	0.86	0.86	0.86	0.92	0.92	0.92	0.93	0.93	0.93
Adj. Flow (vph)	339	32	355	23	29	93	304	2332	16	65	2898	290
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	6	0	0	0
Lane Group Flow (vph)	339	32	355	23	29	93	304	2332	10	65	2898	290
Confl. Peds. (#/hr)						1						
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	4%	2%
Turn Type	pm+pt	NA	Free	pm+pt	NA	Free	Prot	NA	Perm	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free	8		Free			2			Free
Actuated Green, G (s)	18.0	9.2	112.8	7.8	4.1	112.8	12.4	68.3	68.3	7.7	63.6	112.8
Effective Green, g (s)	18.0	9.2	112.8	7.8	4.1	112.8	12.4	68.3	68.3	7.7	63.6	112.8
Actuated g/C Ratio	0.16	0.08	1.00	0.07	0.04	1.00	0.11	0.61	0.61	0.07	0.56	1.00
Clearance Time (s)	5.2	5.2		5.5	5.5		6.2	7.0	7.0	6.2	7.0	
Vehicle Extension (s)	2.5	2.5		3.0	3.0		2.5	5.0	5.0	2.5	5.0	
Lane Grp Cap (vph)	395	151	1583	124	128	1564	377	3020	958	120	2812	1583
v/s Ratio Prot	c0.07	0.02		0.01	0.01		c0.09	c0.47		0.04	c0.58	
v/s Ratio Perm	c0.07		0.22	0.01		0.06			0.01			0.18
v/c Ratio	0.86	0.21	0.22	0.19	0.23	0.06	0.81	0.77	0.01	0.54	1.03	0.18
Uniform Delay, d1	45.0	48.4	0.0	49.5	52.8	0.0	49.0	16.5	8.8	50.8	24.6	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	16.4	0.5	0.3	0.7	0.9	0.1	11.6	2.0	0.0	3.9	25.4	0.3
Delay (s)	61.5	48.9	0.3	50.2	53.7	0.1	60.6	18.5	8.9	54.7	50.0	0.3
Level of Service	E	D	A	D	D	A	E	B	A	D	D	A
Approach Delay (s)		31.0			18.8			23.2			45.7	
Approach LOS		C			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	34.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	112.8	Sum of lost time (s)	23.9
Intersection Capacity Utilization	91.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	55	620	415	50	40	35
Future Vol, veh/h	55	620	415	50	40	35
Conflicting Peds, #/hr	0	0	0	15	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	240	-	-	0	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	95	95	78	78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	57	646	437	53	51	45

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	505	0	-	0	1212	452
Stage 1	-	-	-	-	452	-
Stage 2	-	-	-	-	760	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1060	-	-	-	201	608
Stage 1	-	-	-	-	641	-
Stage 2	-	-	-	-	462	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1045	-	-	-	185	599
Mov Cap-2 Maneuver	-	-	-	-	185	-
Stage 1	-	-	-	-	597	-
Stage 2	-	-	-	-	456	-

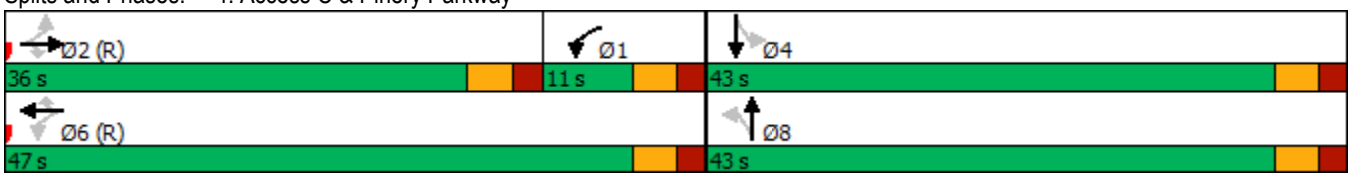
Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	22.3
HCM LOS			C

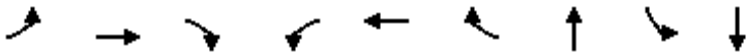
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1045	-	-	-	185	599
HCM Lane V/C Ratio	0.055	-	-	-	0.277	0.075
HCM Control Delay (s)	8.6	-	-	-	31.8	11.5
HCM Lane LOS	A	-	-	-	D	B
HCM 95th %tile Q(veh)	0.2	-	-	-	1.1	0.2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	5	505	15	80	260	280	15	5	480	5
Future Volume (vph)	5	505	15	80	260	280	15	5	480	5
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases		2		1	6			8		4
Permitted Phases	2		2	6		6	8		4	
Detector Phase	2	2	2	1	6	6	8	8	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
Minimum Split (s)	23.5	23.5	23.5	10.5	23.5	23.5	23.5	23.5	23.5	23.5
Total Split (s)	36.0	36.0	36.0	11.0	47.0	47.0	43.0	43.0	43.0	43.0
Total Split (%)	40.0%	40.0%	40.0%	12.2%	52.2%	52.2%	47.8%	47.8%	47.8%	47.8%
Yellow Time (s)	3.0	3.0	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	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)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes						
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	C-Max	Max	Max	Max	Max
Act Effct Green (s)	33.2	33.2	33.2	42.0	42.0	42.0		38.0	38.0	38.0
Actuated g/C Ratio	0.37	0.37	0.37	0.47	0.47	0.47		0.42	0.42	0.42
v/c Ratio	0.01	0.42	0.03	0.22	0.17	0.34		0.15	0.93	0.01
Control Delay	19.6	23.2	0.1	16.8	14.3	2.9		5.6	50.7	11.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	19.6	23.2	0.1	16.8	14.3	2.9		5.6	50.7	11.8
LOS	B	C	A	B	B	A		A	D	B
Approach Delay		22.5			9.4			5.6		49.9
Approach LOS		C			A			A		D

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 1 (1%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 24.6	Intersection LOS: C
Intersection Capacity Utilization 64.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 4: Access C & Pinery Parkway

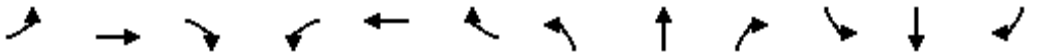




Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	5	549	16	87	283	304	113	522	10
v/c Ratio	0.01	0.42	0.03	0.22	0.17	0.34	0.15	0.93	0.01
Control Delay	19.6	23.2	0.1	16.8	14.3	2.9	5.6	50.7	11.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.6	23.2	0.1	16.8	14.3	2.9	5.6	50.7	11.8
Queue Length 50th (ft)	2	125	0	27	47	0	7	275	2
Queue Length 95th (ft)	9	173	0	53	71	42	38	#481	11
Internal Link Dist (ft)		575			553		284		431
Turn Bay Length (ft)	80		80	160				150	
Base Capacity (vph)	396	1305	637	396	1651	900	734	562	730
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.42	0.03	0.22	0.17	0.34	0.15	0.93	0.01

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)	5	505	15	80	260	280	15	5	85	480	5	5
Future Volume (vph)	5	505	15	80	260	280	15	5	85	480	5	5
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	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.89		1.00	0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1646		1770	1723	
Flt Permitted	0.58	1.00	1.00	0.37	1.00	1.00		0.97		0.72	1.00	
Satd. Flow (perm)	1077	3539	1583	697	3539	1583		1613		1333	1723	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	549	16	87	283	304	16	5	92	522	5	5
RTOR Reduction (vph)	0	0	10	0	0	162	0	53	0	0	3	0
Lane Group Flow (vph)	5	549	6	87	283	142	0	60	0	522	7	0
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	32.2	32.2	32.2	42.0	42.0	42.0		38.0		38.0	38.0	
Effective Green, g (s)	32.2	32.2	32.2	42.0	42.0	42.0		38.0		38.0	38.0	
Actuated g/C Ratio	0.36	0.36	0.36	0.47	0.47	0.47		0.42		0.42	0.42	
Clearance Time (s)	5.0	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	3.0	
Lane Grp Cap (vph)	385	1266	566	382	1651	738		681		562	727	
v/s Ratio Prot		c0.16		0.01	0.08						0.00	
v/s Ratio Perm	0.00		0.00	0.09		c0.09		0.04		c0.39		
v/c Ratio	0.01	0.43	0.01	0.23	0.17	0.19		0.09		0.93	0.01	
Uniform Delay, d1	18.6	22.0	18.6	18.1	13.9	14.1		15.6		24.7	15.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2	0.1	1.1	0.0	0.3	0.2	0.6		0.3		23.9	0.0	
Delay (s)	18.7	23.1	18.7	18.4	14.1	14.6		15.9		48.6	15.1	
Level of Service	B	C	B	B	B	B		B		D	B	
Approach Delay (s)		22.9			14.9			15.9			48.0	
Approach LOS		C			B			B			D	

Intersection Summary			
HCM 2000 Control Delay	26.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	64.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	10.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	90	0	30	70	135	0	0	30	415	0	0
Future Vol, veh/h	5	90	0	30	70	135	0	0	30	415	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	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	150	-	150	150	-	150	150	-	-	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	5	98	0	33	76	147	0	0	33	451	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	223	0	0	98	0	0	212	397	49	201	250	38
Stage 1	-	-	-	-	-	-	108	108	-	142	142	-
Stage 2	-	-	-	-	-	-	104	289	-	59	108	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1343	-	-	1493	-	-	726	539	1009	739	652	1026
Stage 1	-	-	-	-	-	-	886	805	-	846	778	-
Stage 2	-	-	-	-	-	-	890	672	-	946	805	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1343	-	-	1493	-	-	711	525	1009	701	635	1026
Mov Cap-2 Maneuver	-	-	-	-	-	-	711	525	-	701	635	-
Stage 1	-	-	-	-	-	-	882	802	-	843	761	-
Stage 2	-	-	-	-	-	-	870	657	-	912	802	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	1	8.7	18.9
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	1009	1343	-	-	1493	-	-	701	-
HCM Lane V/C Ratio	-	0.032	0.004	-	-	0.022	-	-	0.643	-
HCM Control Delay (s)	0	8.7	7.7	-	-	7.5	-	-	18.9	0
HCM Lane LOS	A	A	A	-	-	A	-	-	C	A
HCM 95th %tile Q(veh)	-	0.1	0	-	-	0.1	-	-	4.7	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	235	0	2435	2615	410
Future Vol, veh/h	0	235	0	2435	2615	410
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	Free
Storage Length	-	0	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	95	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	255	0	2647	2753	446

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	-	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	0	-	-	0
Stage 1	0	0	0	-	-	0
Stage 2	0	0	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	0	-
HCM Lane LOS	-	A	-
HCM 95th %tile Q(veh)	-	-	-

Intersection	
Int Delay, s/veh	8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	65	0	0	85
Future Vol, veh/h	0	0	65	0	0	85
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	-	0
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	0	71	0	0	92

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1	0	-	1
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.14	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.22	-	-	3.32
Pot Cap-1 Maneuver	-	-	1620	-	0	1083
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1620	-	-	1083
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	7.3	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1083	-	-	1620	-
HCM Lane V/C Ratio	0.085	-	-	0.044	-
HCM Control Delay (s)	8.6	-	-	7.3	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	230	50	75	65	130	325	415	2160	90	1055	130
Future Volume (vph)	230	50	75	65	130	325	415	2160	90	1055	130
Turn Type	pm+pt	NA	Free	Perm	NA	pm+ov	Prot	NA	Prot	NA	Free
Protected Phases	7	4			8	1	5	2	1	6	
Permitted Phases	4		Free	8		8					Free
Detector Phase	7	4		8	8	1	5	2	1	6	
Switch Phase											
Minimum Initial (s)	5.0	5.0		12.0	12.0	8.0	1.0	20.0	8.0	20.0	
Minimum Split (s)	10.0	39.0		39.0	39.0	13.0	6.0	27.0	13.0	27.0	
Total Split (s)	13.0	37.0		24.0	24.0	16.0	31.0	67.0	16.0	52.0	
Total Split (%)	10.8%	30.8%		20.0%	20.0%	13.3%	25.8%	55.8%	13.3%	43.3%	
Yellow Time (s)	3.0	4.0		4.0	4.0	3.0	3.0	5.0	3.0	5.0	
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)	5.0	6.0		6.0	6.0	5.0	5.0	7.0	5.0	7.0	
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		Ped	Ped	None	None	C-Max	None	C-Max	
Act Effct Green (s)	27.2	25.9	120.0	18.0	18.0	30.0	20.9	60.0	11.0	50.1	120.0
Actuated g/C Ratio	0.23	0.22	1.00	0.15	0.15	0.25	0.17	0.50	0.09	0.42	1.00
v/c Ratio	0.51	0.07	0.05	0.35	0.51	0.72	0.75	0.96	0.31	0.55	0.09
Control Delay	32.0	23.8	0.1	51.4	54.0	29.3	55.3	40.1	53.9	28.3	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	32.0	23.8	0.1	51.4	54.0	29.3	55.3	40.1	53.9	28.3	0.1
LOS	C	C	A	D	D	C	E	D	D	C	A
Approach Delay		24.1			38.3			42.6		27.2	
Approach LOS		C			D			D		C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 24 (20%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 36.6	Intersection LOS: D
Intersection Capacity Utilization 85.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1: Parker Road & Pinery Parkway





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	250	54	82	71	141	353	451	2391	98	1147	141
v/c Ratio	0.51	0.07	0.05	0.35	0.51	0.72	0.75	0.96	0.31	0.55	0.09
Control Delay	32.0	23.8	0.1	51.4	54.0	29.3	55.3	40.1	53.9	28.3	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	32.0	23.8	0.1	51.4	54.0	29.3	55.3	40.1	53.9	28.3	0.1
Queue Length 50th (ft)	52	11	0	50	102	127	172	631	37	242	0
Queue Length 95th (ft)	74	23	0	98	169	216	219	#770	64	310	0
Internal Link Dist (ft)		553			790			779		1277	
Turn Bay Length (ft)	220		100	100			340		500		
Base Capacity (vph)	486	914	1583	201	279	491	743	2488	314	2081	1583
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	0.06	0.05	0.35	0.51	0.72	0.61	0.96	0.31	0.55	0.09

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

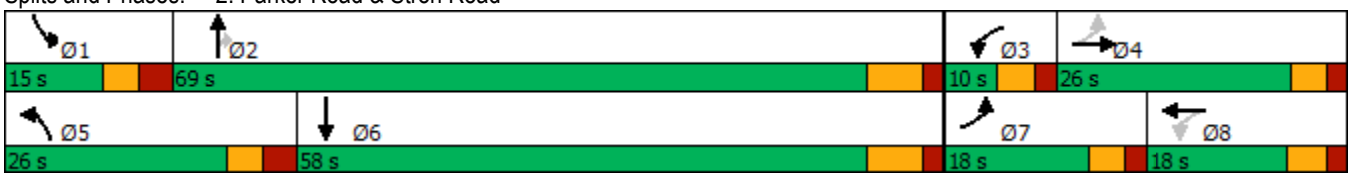
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	230	50	75	65	130	325	415	2160	40	90	1055	130
Future Volume (vph)	230	50	75	65	130	325	415	2160	40	90	1055	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	4.0	6.0	6.0	5.0	5.0	7.0		5.0	7.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	1.00	1.00	0.97	0.91		0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	1863	1583	3433	4976		3433	4988	1583
Flt Permitted	0.44	1.00	1.00	0.72	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1607	3539	1583	1341	1863	1583	3433	4976		3433	4988	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	250	54	82	71	141	353	451	2348	43	98	1147	141
RTOR Reduction (vph)	0	0	0	0	0	96	0	2	0	0	0	0
Lane Group Flow (vph)	250	54	82	71	141	257	451	2390	0	98	1147	141
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	4%	2%
Turn Type	pm+pt	NA	Free	Perm	NA	pm+ov	Prot	NA		Prot	NA	Free
Protected Phases	7	4			8	1	5	2		1	6	
Permitted Phases	4		Free	8		8						Free
Actuated Green, G (s)	31.0	31.0	120.0	18.0	18.0	29.0	20.9	60.0		11.0	50.1	120.0
Effective Green, g (s)	31.0	31.0	120.0	18.0	18.0	29.0	20.9	60.0		11.0	50.1	120.0
Actuated g/C Ratio	0.26	0.26	1.00	0.15	0.15	0.24	0.17	0.50		0.09	0.42	1.00
Clearance Time (s)	5.0	6.0		6.0	6.0	5.0	5.0	7.0		5.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)	536	914	1583	201	279	382	597	2488		314	2082	1583
v/s Ratio Prot	c0.03	0.02			0.08	c0.06	0.13	c0.48		0.03	0.23	
v/s Ratio Perm	0.09		0.05	0.05		0.10						0.09
v/c Ratio	0.47	0.06	0.05	0.35	0.51	0.67	0.76	0.96		0.31	0.55	0.09
Uniform Delay, d1	35.9	33.5	0.0	45.8	46.9	41.2	47.1	28.9		51.0	26.4	0.0
Progression Factor	0.75	0.70	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.6	0.0	0.1	1.1	1.4	4.6	5.4	10.9		0.6	1.1	0.1
Delay (s)	27.6	23.4	0.1	46.8	48.3	45.8	52.5	39.7		51.5	27.5	0.1
Level of Service	C	C	A	D	D	D	D	D		D	C	A
Approach Delay (s)		21.2			46.6			41.8			26.4	
Approach LOS		C			D			D			C	

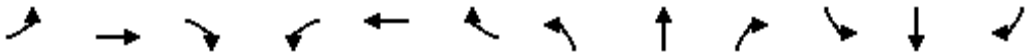
Intersection Summary			
HCM 2000 Control Delay	36.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	85.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	385	30	165	15	35	60	335	2300	25	80	1240	365
Future Volume (vph)	385	30	165	15	35	60	335	2300	25	80	1240	365
Turn Type	pm+pt	NA	Free	pm+pt	NA	Free	Prot	NA	Perm	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free	8		Free			2			Free
Detector Phase	7	4		3	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		10.0	19.0	19.0	6.0	19.0	
Minimum Split (s)	37.2	37.2		37.5	37.5		16.2	35.0	35.0	12.2	35.0	
Total Split (s)	18.0	26.0		10.0	18.0		26.0	69.0	69.0	15.0	58.0	
Total Split (%)	15.0%	21.7%		8.3%	15.0%		21.7%	57.5%	57.5%	12.5%	48.3%	
Yellow Time (s)	3.2	3.2		3.5	3.5		3.2	5.0	5.0	3.2	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	2.0	2.0	3.0	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)	5.2	5.2		5.5	5.5		6.2	7.0	7.0	6.2	7.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None		None	Max	Max	None	Max	
Act Effct Green (s)	20.2	13.9	109.2	8.7	7.3	109.2	15.8	62.3	62.3	8.3	54.8	109.2
Actuated g/C Ratio	0.18	0.13	1.00	0.08	0.07	1.00	0.14	0.57	0.57	0.08	0.50	1.00
v/c Ratio	0.83	0.14	0.11	0.11	0.16	0.04	0.72	0.86	0.03	0.64	0.53	0.25
Control Delay	56.0	43.8	0.1	38.3	51.9	0.1	53.7	25.0	0.0	72.3	20.8	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	56.0	43.8	0.1	38.3	51.9	0.1	53.7	25.0	0.0	72.3	20.8	0.4
LOS	E	D	A	D	D	A	D	C	A	E	C	A
Approach Delay		39.5			21.8			28.4			18.8	
Approach LOS		D			C			C			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 109.2	
Natural Cycle: 150	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 26.3	Intersection LOS: C
Intersection Capacity Utilization 82.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 2: Parker Road & Stroh Road

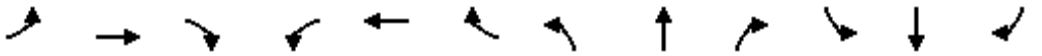




Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	418	33	179	16	38	65	356	2447	27	85	1319	388
v/c Ratio	0.83	0.14	0.11	0.11	0.16	0.04	0.72	0.86	0.03	0.64	0.53	0.25
Control Delay	56.0	43.8	0.1	38.3	51.9	0.1	53.7	25.0	0.0	72.3	20.8	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.0	43.8	0.1	38.3	51.9	0.1	53.7	25.0	0.0	72.3	20.8	0.4
Queue Length 50th (ft)	141	19	0	9	14	0	130	568	0	62	247	0
Queue Length 95th (ft)	193	52	0	29	32	0	177	662	0	#133	315	0
Internal Link Dist (ft)		589			1174			1592			712	
Turn Bay Length (ft)				315		155	350		285	530		560
Base Capacity (vph)	504	370	1583	141	406	1564	625	2844	978	143	2502	1583
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	0.09	0.11	0.11	0.09	0.04	0.57	0.86	0.03	0.59	0.53	0.25

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)	385	30	165	15	35	60	335	2300	25	80	1240	365
Future Volume (vph)	385	30	165	15	35	60	335	2300	25	80	1240	365
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2	4.0	5.5	5.5	4.0	6.2	7.0	7.0	6.2	7.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583	1770	3539	1564	3433	4988	1583	1770	4988	1583
Flt Permitted	0.41	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1490	1863	1583	1774	3539	1564	3433	4988	1583	1770	4988	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	418	33	179	16	38	65	356	2447	27	85	1319	388
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	12	0	0	0
Lane Group Flow (vph)	418	33	179	16	38	65	356	2447	15	85	1319	388
Confl. Peds. (#/hr)						1						
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	4%	2%
Turn Type	pm+pt	NA	Free	pm+pt	NA	Free	Prot	NA	Perm	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free	8		Free			2			Free
Actuated Green, G (s)	22.5	15.3	111.5	5.9	4.2	111.5	15.8	62.3	62.3	8.3	54.8	111.5
Effective Green, g (s)	22.5	15.3	111.5	5.9	4.2	111.5	15.8	62.3	62.3	8.3	54.8	111.5
Actuated g/C Ratio	0.20	0.14	1.00	0.05	0.04	1.00	0.14	0.56	0.56	0.07	0.49	1.00
Clearance Time (s)	5.2	5.2		5.5	5.5		6.2	7.0	7.0	6.2	7.0	
Vehicle Extension (s)	2.5	2.5		3.0	3.0		2.5	5.0	5.0	2.5	5.0	
Lane Grp Cap (vph)	523	255	1583	93	133	1564	486	2787	884	131	2451	1583
v/s Ratio Prot	c0.09	0.02		0.00	0.01		c0.10	c0.49		0.05	0.26	
v/s Ratio Perm	c0.07		0.11	0.01		0.04			0.01			0.25
v/c Ratio	0.80	0.13	0.11	0.17	0.29	0.04	0.73	0.88	0.02	0.65	0.54	0.25
Uniform Delay, d1	40.6	42.2	0.0	50.5	52.2	0.0	45.8	21.3	11.0	50.2	19.6	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.1	0.2	0.1	0.9	1.2	0.0	5.3	4.3	0.0	9.4	0.9	0.4
Delay (s)	48.7	42.4	0.1	51.3	53.4	0.0	51.1	25.6	11.0	59.6	20.5	0.4
Level of Service	D	D	A	D	D	A	D	C	B	E	C	A
Approach Delay (s)		34.6			24.0			28.7			18.0	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	25.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	111.5	Sum of lost time (s)	23.9
Intersection Capacity Utilization	82.4%	ICU Level of Service	E
Analysis Period (min)	15		

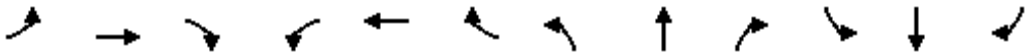
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	470	125	25	470	30	105	10	45	70	10	55
Future Volume (vph)	5	470	125	25	470	30	105	10	45	70	10	55
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	8	8	8	4	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	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	11.0	76.0	76.0	11.0	76.0	76.0	33.0	33.0	33.0	33.0	33.0	33.0
Total Split (%)	9.2%	63.3%	63.3%	9.2%	63.3%	63.3%	27.5%	27.5%	27.5%	27.5%	27.5%	27.5%
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)	0.0	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 Optimize?												
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	Ped	Ped	Ped	Ped	Ped	Ped
Act Effct Green (s)	89.3	85.9	85.9	91.5	90.2	90.2	18.7	18.7	18.7	18.7	18.7	18.7
Actuated g/C Ratio	0.74	0.72	0.72	0.76	0.75	0.75	0.16	0.16	0.16	0.16	0.16	0.16
v/c Ratio	0.01	0.44	0.13	0.05	0.36	0.03	0.53	0.04	0.17	0.47	0.05	0.25
Control Delay	3.6	9.2	1.8	3.7	6.6	0.8	55.9	42.7	11.0	53.5	42.9	11.5
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	3.6	9.2	1.8	3.7	6.6	0.8	55.9	42.7	11.0	53.5	42.9	11.5
LOS	A	A	A	A	A	A	E	D	B	D	D	B
Approach Delay		7.6			6.1			42.4			35.5	
Approach LOS		A			A			D			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.53	
Intersection Signal Delay: 14.0	Intersection LOS: B
Intersection Capacity Utilization 46.0%	ICU Level of Service A
Analysis Period (min) 15	

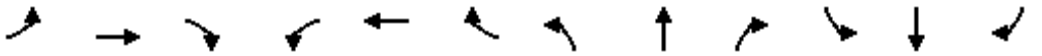
Splits and Phases: 3: J. Morgan Blvd & Stroh Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	6	588	156	27	505	32	114	11	49	101	14	80
v/c Ratio	0.01	0.44	0.13	0.05	0.36	0.03	0.53	0.04	0.17	0.47	0.05	0.25
Control Delay	3.6	9.2	1.8	3.7	6.6	0.8	55.9	42.7	11.0	53.5	42.9	11.5
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	3.6	9.2	1.8	3.7	6.6	0.8	55.9	42.7	11.0	53.5	42.9	11.5
Queue Length 50th (ft)	1	188	4	4	101	0	83	7	0	73	9	0
Queue Length 95th (ft)	4	244	20	12	234	5	141	24	30	94	22	20
Internal Link Dist (ft)		1161			1370			528			716	
Turn Bay Length (ft)	240		150	150		150	150		150	150		
Base Capacity (vph)	670	1333	1172	576	1400	1175	330	442	417	331	442	436
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	0.01	0.44	0.13	0.05	0.36	0.03	0.35	0.02	0.12	0.31	0.03	0.18

Intersection Summary



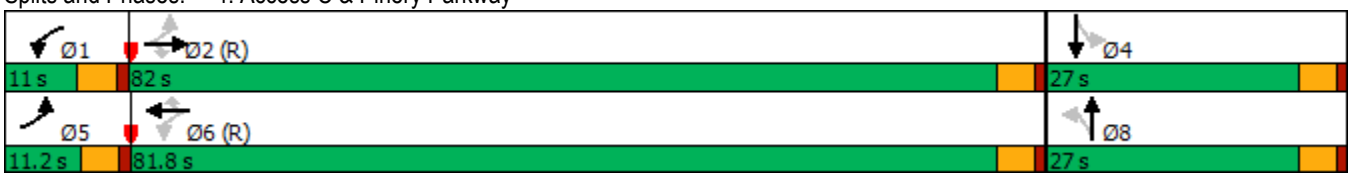
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	470	125	25	470	30	105	10	45	70	10	55
Future Volume (vph)	5	470	125	25	470	30	105	10	45	70	10	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (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
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1546	1770	1863	1583	1770	1863	1583
Flt Permitted	0.44	1.00	1.00	0.36	1.00	1.00	0.75	1.00	1.00	0.75	1.00	1.00
Satd. Flow (perm)	827	1863	1583	678	1863	1546	1394	1863	1583	1398	1863	1583
Peak-hour factor, PHF	0.80	0.80	0.80	0.93	0.93	0.93	0.92	0.92	0.92	0.69	0.69	0.69
Adj. Flow (vph)	6	588	156	27	505	32	114	11	49	101	14	80
RTOR Reduction (vph)	0	0	41	0	0	9	0	0	41	0	0	68
Lane Group Flow (vph)	6	588	115	27	505	23	114	11	8	101	14	12
Confl. Peds. (#/hr)						1						
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	85.3	84.1	84.1	90.3	86.6	86.6	18.7	18.7	18.7	18.7	18.7	18.7
Effective Green, g (s)	85.3	84.1	84.1	90.3	86.6	86.6	18.7	18.7	18.7	18.7	18.7	18.7
Actuated g/C Ratio	0.71	0.70	0.70	0.75	0.72	0.72	0.16	0.16	0.16	0.16	0.16	0.16
Clearance 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
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	597	1305	1109	543	1344	1115	217	290	246	217	290	246
v/s Ratio Prot	0.00	c0.32		c0.00	0.27			0.01			0.01	
v/s Ratio Perm	0.01		0.07	0.04		0.01	c0.08		0.00	0.07		0.01
v/c Ratio	0.01	0.45	0.10	0.05	0.38	0.02	0.53	0.04	0.03	0.47	0.05	0.05
Uniform Delay, d1	5.2	7.8	5.8	4.8	6.4	4.7	46.6	43.0	43.0	46.1	43.1	43.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	1.1	0.2	0.0	0.8	0.0	2.3	0.1	0.1	1.6	0.1	0.1
Delay (s)	5.2	9.0	6.0	4.8	7.2	4.8	48.9	43.1	43.0	47.7	43.2	43.2
Level of Service	A	A	A	A	A	A	D	D	D	D	D	D
Approach Delay (s)		8.3			6.9			46.8			45.5	
Approach LOS		A			A			D			D	

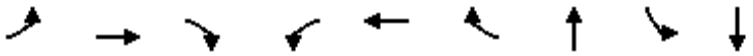
Intersection Summary			
HCM 2000 Control Delay	16.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	46.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	50	250	55	70	515	90	35	5	60	5
Future Volume (vph)	50	250	55	70	515	90	35	5	60	5
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2		1	6			8		4
Permitted Phases	2		2	6		6	8		4	
Detector Phase	5	2	2	1	6	6	8	8	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
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	11.2	82.0	82.0	11.0	81.8	81.8	27.0	27.0	27.0	27.0
Total Split (%)	9.3%	68.3%	68.3%	9.2%	68.2%	68.2%	22.5%	22.5%	22.5%	22.5%
Yellow Time (s)	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
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)	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 Optimize?										
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	Max	Max	Max	Max
Act Effct Green (s)	84.9	79.7	79.7	84.9	79.7	79.7		22.5	22.5	22.5
Actuated g/C Ratio	0.71	0.66	0.66	0.71	0.66	0.66		0.19	0.19	0.19
v/c Ratio	0.10	0.13	0.06	0.10	0.26	0.31		0.33	0.32	0.11
Control Delay	4.2	8.0	2.8	11.6	17.0	14.1		27.7	46.7	17.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	4.2	8.0	2.8	11.6	17.0	14.1		27.7	46.7	17.8
LOS	A	A	A	B	B	B		C	D	B
Approach Delay		6.7			16.1			27.7		37.2
Approach LOS		A			B			C		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 59 (49%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.33	
Intersection Signal Delay: 15.7	Intersection LOS: B
Intersection Capacity Utilization 42.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 4: Access C & Pinery Parkway

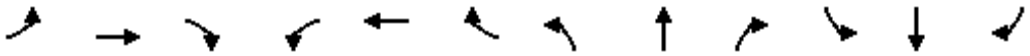




Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	59	294	65	82	606	90	106	71	35
v/c Ratio	0.10	0.13	0.06	0.10	0.26	0.31	0.33	0.32	0.11
Control Delay	4.2	8.0	2.8	11.6	17.0	14.1	27.7	46.7	17.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.2	8.0	2.8	11.6	17.0	14.1	27.7	46.7	17.8
Queue Length 50th (ft)	12	47	3	28	119	22	40	48	4
Queue Length 95th (ft)	18	63	14	m54	158	m55	86	89	30
Internal Link Dist (ft)		575			553		284		431
Turn Bay Length (ft)	80		80	160				150	
Base Capacity (vph)	583	2350	1073	791	2350	294	321	223	329
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.13	0.06	0.10	0.26	0.31	0.33	0.32	0.11

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



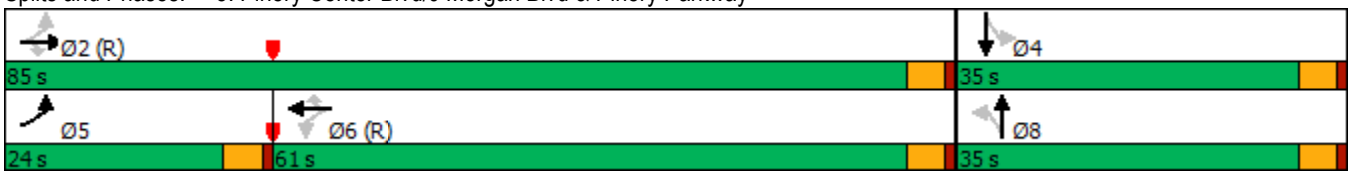
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	250	55	70	515	90	35	5	50	60	5	25
Future Volume (vph)	50	250	55	70	515	90	35	5	50	60	5	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5		4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.25		1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.92		1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	398		1690		1770	1631	
Flt Permitted	0.40	1.00	1.00	0.57	1.00	1.00		0.88		0.64	1.00	
Satd. Flow (perm)	744	3539	1583	1066	3539	398		1515		1194	1631	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	1.00	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	59	294	65	82	606	90	41	6	59	71	6	29
RTOR Reduction (vph)	0	0	22	0	0	31	0	37	0	0	24	0
Lane Group Flow (vph)	59	294	43	82	606	59	0	69	0	71	11	0
Confl. Peds. (#/hr)						515						
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	84.0	78.8	78.8	84.0	78.8	78.8		22.5		22.5	22.5	
Effective Green, g (s)	84.0	78.8	78.8	84.0	78.8	78.8		22.5		22.5	22.5	
Actuated g/C Ratio	0.70	0.66	0.66	0.70	0.66	0.66		0.19		0.19	0.19	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5		4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)	565	2323	1039	776	2323	261		284		223	305	
v/s Ratio Prot	0.00	0.08		c0.00	c0.17						0.01	
v/s Ratio Perm	0.07		0.03	0.07		0.15		0.05		c0.06		
v/c Ratio	0.10	0.13	0.04	0.11	0.26	0.23		0.24		0.32	0.04	
Uniform Delay, d1	5.7	7.7	7.3	5.7	8.5	8.3		41.5		42.1	39.9	
Progression Factor	0.87	1.01	1.41	2.52	1.94	6.03		1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.1	0.1	0.1	0.2	1.8		2.0		3.7	0.2	
Delay (s)	5.0	7.9	10.3	14.4	16.8	51.9		43.5		45.8	40.1	
Level of Service	A	A	B	B	B	D		D		D	D	
Approach Delay (s)		7.9			20.6			43.5			44.0	
Approach LOS		A			C			D			D	

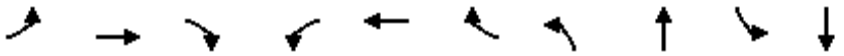
Intersection Summary			
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	42.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	100	250	30	30	500	50	75	95	60	85
Future Volume (vph)	100	250	30	30	500	50	75	95	60	85
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2			6			8		4
Permitted Phases	2		2	6		6	8		4	
Detector Phase	5	2	2	6	6	6	8	8	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
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	24.0	85.0	85.0	61.0	61.0	61.0	35.0	35.0	35.0	35.0
Total Split (%)	20.0%	70.8%	70.8%	50.8%	50.8%	50.8%	29.2%	29.2%	29.2%	29.2%
Yellow Time (s)	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
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)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead			Lag	Lag	Lag				
Lead-Lag Optimize?										
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	C-Max	Max	Max	Max	Max
Act Effct Green (s)	80.5	80.5	80.5	67.9	67.9	67.9	30.5	30.5	30.5	30.5
Actuated g/C Ratio	0.67	0.67	0.67	0.57	0.57	0.57	0.25	0.25	0.25	0.25
v/c Ratio	0.20	0.11	0.03	0.05	0.27	0.06	0.28	0.35	0.25	0.28
Control Delay	7.8	7.2	2.3	11.5	12.8	3.8	39.1	33.8	38.7	33.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.8	7.2	2.3	11.5	12.8	3.8	39.1	33.8	38.7	33.0
LOS	A	A	A	B	B	A	D	C	D	C
Approach Delay		7.0			11.9			35.6		34.9
Approach LOS		A			B			D		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 80 (67%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.35	
Intersection Signal Delay: 17.5	Intersection LOS: B
Intersection Capacity Utilization 46.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 5: Pinery Center Blvd/J Morgan Blvd & Pinery Parkway





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	109	272	33	33	543	54	82	163	65	130
v/c Ratio	0.20	0.11	0.03	0.05	0.27	0.06	0.28	0.35	0.25	0.28
Control Delay	7.8	7.2	2.3	11.5	12.8	3.8	39.1	33.8	38.7	33.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.8	7.2	2.3	11.5	12.8	3.8	39.1	33.8	38.7	33.0
Queue Length 50th (ft)	27	35	0	8	73	0	51	88	40	70
Queue Length 95th (ft)	48	52	11	18	86	13	98	152	82	126
Internal Link Dist (ft)		446			575			367		49
Turn Bay Length (ft)	150		150	150		150	150		150	
Base Capacity (vph)	655	2374	1072	615	2003	919	293	464	264	465
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	0.17	0.11	0.03	0.05	0.27	0.06	0.28	0.35	0.25	0.28

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	250	30	30	500	50	75	95	55	60	85	35
Future Volume (vph)	100	250	30	30	500	50	75	95	55	60	85	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1760		1770	1781	
Flt Permitted	0.39	1.00	1.00	0.58	1.00	1.00	0.62	1.00		0.56	1.00	
Satd. Flow (perm)	723	3539	1583	1088	3539	1583	1153	1760		1042	1781	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	272	33	33	543	54	82	103	60	65	92	38
RTOR Reduction (vph)	0	0	11	0	0	23	0	17	0	0	13	0
Lane Group Flow (vph)	109	272	22	33	543	31	82	146	0	65	117	0
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	80.5	80.5	80.5	67.9	67.9	67.9	30.5	30.5		30.5	30.5	
Effective Green, g (s)	80.5	80.5	80.5	67.9	67.9	67.9	30.5	30.5		30.5	30.5	
Actuated g/C Ratio	0.67	0.67	0.67	0.57	0.57	0.57	0.25	0.25		0.25	0.25	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	555	2374	1061	615	2002	895	293	447		264	452	
v/s Ratio Prot	c0.01	0.08			c0.15			c0.08			0.07	
v/s Ratio Perm	0.12		0.01	0.03		0.02	0.07			0.06		
v/c Ratio	0.20	0.11	0.02	0.05	0.27	0.03	0.28	0.33		0.25	0.26	
Uniform Delay, d1	7.4	7.0	6.6	11.7	13.4	11.5	35.9	36.4		35.6	35.7	
Progression Factor	1.00	1.00	1.00	0.92	0.91	1.14	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.1	0.0	0.2	0.3	0.1	2.4	1.9		2.2	1.4	
Delay (s)	7.6	7.1	6.6	10.9	12.5	13.2	38.3	38.3		37.8	37.1	
Level of Service	A	A	A	B	B	B	D	D		D	D	
Approach Delay (s)		7.2			12.5			38.3			37.4	
Approach LOS		A			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	18.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	46.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	40	0	2715	1235	150
Future Vol, veh/h	0	40	0	2715	1235	150
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	None
Storage Length	-	0	-	-	-	0
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	43	0	2951	1342	163

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	-	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	0	-	-	-
Stage 1	0	0	0	-	-	-
Stage 2	0	0	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	0	-	-
HCM Lane LOS	-	A	-	-
HCM 95th %tile Q(veh)	-	-	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	315	20	65	550	0	65
Future Vol, veh/h	315	20	65	550	0	65
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	-	0
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	342	22	71	598	0	71

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	364	0	-	182
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.14	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.22	-	-	3.32
Pot Cap-1 Maneuver	-	-	1191	-	0	829
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1191	-	-	829
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

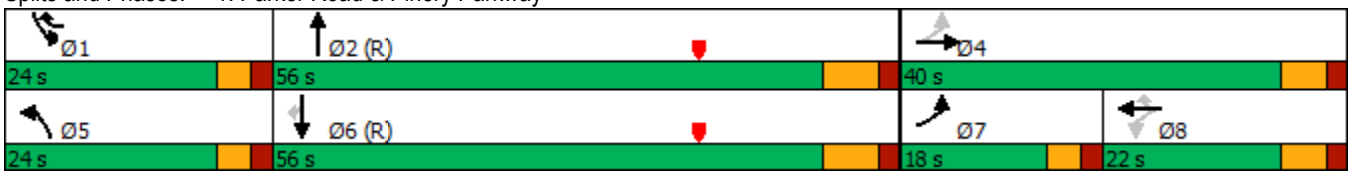
Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	9.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	829	-	-	1191	-
HCM Lane V/C Ratio	0.085	-	-	0.059	-
HCM Control Delay (s)	9.7	-	-	8.2	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0.2	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	470	175	210	60	100	250	310	1380	330	2180	240
Future Volume (vph)	470	175	210	60	100	250	310	1380	330	2180	240
Turn Type	pm+pt	NA	Free	Perm	NA	pm+ov	Prot	NA	Prot	NA	Perm
Protected Phases	7	4			8	1	5	2	1	6	
Permitted Phases	4		Free	8		8					6
Detector Phase	7	4		8	8	1	5	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0		12.0	12.0	8.0	1.0	20.0	8.0	20.0	20.0
Minimum Split (s)	10.0	39.0		39.0	39.0	13.0	6.0	27.0	13.0	27.0	27.0
Total Split (s)	18.0	40.0		22.0	22.0	24.0	24.0	56.0	24.0	56.0	56.0
Total Split (%)	15.0%	33.3%		18.3%	18.3%	20.0%	20.0%	46.7%	20.0%	46.7%	46.7%
Yellow Time (s)	3.0	4.0		4.0	4.0	3.0	3.0	5.0	3.0	5.0	5.0
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	6.0	5.0	5.0	7.0	5.0	7.0	7.0
Lead/Lag	Lead			Lag	Lag	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?											
Recall Mode	None	None		None	None	None	None	C-Max	None	C-Max	C-Max
Act Effct Green (s)	32.3	31.3	120.0	13.3	13.3	35.9	16.2	54.1	16.6	54.5	54.5
Actuated g/C Ratio	0.27	0.26	1.00	0.11	0.11	0.30	0.14	0.45	0.14	0.45	0.45
v/c Ratio	0.80	0.21	0.14	0.50	0.53	0.51	0.70	0.67	0.72	0.99	0.30
Control Delay	44.5	31.1	0.2	63.6	59.8	26.8	58.0	28.3	58.1	50.2	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.5	31.1	0.2	63.6	59.8	26.8	58.0	28.3	58.1	50.2	8.6
LOS	D	C	A	E	E	C	E	C	E	D	A
Approach Delay		30.9			40.2			33.6		47.5	
Approach LOS		C			D			C		D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 12 (10%), Referenced to phase 2:NBT and 6:SBT, Start of FDW or yellow	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay: 40.2	Intersection LOS: D
Intersection Capacity Utilization 93.5%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 1: Parker Road & Pinery Parkway





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	511	190	228	65	109	272	326	1506	340	2247	247
v/c Ratio	0.80	0.21	0.14	0.50	0.53	0.51	0.70	0.67	0.72	0.99	0.30
Control Delay	44.5	31.1	0.2	63.6	59.8	26.8	58.0	28.3	58.1	50.2	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.5	31.1	0.2	63.6	59.8	26.8	58.0	28.3	58.1	50.2	8.6
Queue Length 50th (ft)	153	54	0	49	82	121	125	325	130	613	35
Queue Length 95th (ft)	185	71	0	94	138	193	171	414	178	#819	97
Internal Link Dist (ft)		553			790			779		1277	
Turn Bay Length (ft)	220		100	100			340		500		
Base Capacity (vph)	642	1002	1583	156	248	560	543	2240	543	2265	810
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	0.80	0.19	0.14	0.42	0.44	0.49	0.60	0.67	0.63	0.99	0.30

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)	470	175	210	60	100	250	310	1380	50	330	2180	240
Future Volume (vph)	470	175	210	60	100	250	310	1380	50	330	2180	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	4.0	6.0	6.0	5.0	5.0	7.0		5.0	7.0	7.0
Lane Util. Factor	0.97	0.95	1.00	1.00	1.00	1.00	0.97	0.91		0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	1863	1583	3433	4965		3433	4988	1583
Flt Permitted	0.47	1.00	1.00	0.63	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1685	3539	1583	1178	1863	1583	3433	4965		3433	4988	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.95	0.95	0.95	0.97	0.97	0.97
Adj. Flow (vph)	511	190	228	65	109	272	326	1453	53	340	2247	247
RTOR Reduction (vph)	0	0	0	0	0	62	0	3	0	0	0	91
Lane Group Flow (vph)	511	190	228	65	109	210	326	1503	0	340	2247	156
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	4%	2%
Turn Type	pm+pt	NA	Free	Perm	NA	pm+ov	Prot	NA		Prot	NA	Perm
Protected Phases	7	4			8	1	5	2		1	6	
Permitted Phases	4		Free	8		8						6
Actuated Green, G (s)	31.3	31.3	120.0	13.3	13.3	29.9	16.2	54.1		16.6	54.5	54.5
Effective Green, g (s)	31.3	31.3	120.0	13.3	13.3	29.9	16.2	54.1		16.6	54.5	54.5
Actuated g/C Ratio	0.26	0.26	1.00	0.11	0.11	0.25	0.13	0.45		0.14	0.45	0.45
Clearance Time (s)	5.0	6.0		6.0	6.0	5.0	5.0	7.0		5.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	5.0		3.0	5.0	5.0
Lane Grp Cap (vph)	628	923	1583	130	206	394	463	2238		474	2265	718
v/s Ratio Prot	c0.09	0.05			0.06	0.07	0.09	0.30		c0.10	c0.45	
v/s Ratio Perm	c0.12		c0.14	0.06		0.06						0.10
v/c Ratio	0.81	0.21	0.14	0.50	0.53	0.53	0.70	0.67		0.72	0.99	0.22
Uniform Delay, d1	39.7	34.6	0.0	50.2	50.4	39.0	49.6	26.0		49.5	32.5	19.8
Progression Factor	0.92	0.89	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	7.5	0.1	0.2	3.0	2.4	1.4	4.8	1.6		5.1	17.1	0.7
Delay (s)	44.0	30.9	0.2	53.2	52.8	40.4	54.4	27.6		54.6	49.7	20.5
Level of Service	D	C	A	D	D	D	D	C		D	D	C
Approach Delay (s)		30.5			45.3			32.4			47.7	
Approach LOS		C			D			C			D	

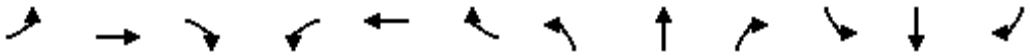
Intersection Summary			
HCM 2000 Control Delay	40.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	93.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	435	40	235	20	25	85	170	1875	20	75	2700	305
Future Volume (vph)	435	40	235	20	25	85	170	1875	20	75	2700	305
Turn Type	pm+pt	NA	Free	pm+pt	NA	Free	Prot	NA	Perm	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free	8		Free			2			Free
Detector Phase	7	4		3	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		10.0	19.0	19.0	6.0	19.0	
Minimum Split (s)	37.2	37.2		37.5	37.5		16.2	35.0	35.0	12.2	35.0	
Total Split (s)	18.0	25.0		13.0	20.0		16.0	65.0	65.0	17.0	66.0	
Total Split (%)	15.0%	20.8%		10.8%	16.7%		13.3%	54.2%	54.2%	14.2%	55.0%	
Yellow Time (s)	3.2	3.2		3.5	3.5		3.2	5.0	5.0	3.2	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	2.0	2.0	3.0	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)	5.2	5.2		5.5	5.5		6.2	7.0	7.0	6.2	7.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None		None	Max	Max	None	Max	
Act Effct Green (s)	20.0	12.7	107.6	11.2	7.1	107.6	9.8	62.7	62.7	9.0	59.2	107.6
Actuated g/C Ratio	0.19	0.12	1.00	0.10	0.07	1.00	0.09	0.58	0.58	0.08	0.55	1.00
v/c Ratio	0.89	0.19	0.15	0.12	0.12	0.06	0.57	0.68	0.02	0.53	1.03	0.20
Control Delay	61.1	45.7	0.2	37.1	50.6	0.1	55.7	19.2	0.1	61.5	49.3	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	61.1	45.7	0.2	37.1	50.6	0.1	55.7	19.2	0.1	61.5	49.3	0.3
LOS	E	D	A	D	D	A	E	B	A	E	D	A
Approach Delay		40.1			15.5			22.0			44.8	
Approach LOS		D			B			C			D	

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 107.6		
Natural Cycle: 150		
Control Type: Semi Act-Uncoord		
Maximum v/c Ratio: 1.03		
Intersection Signal Delay: 35.7	Intersection LOS: D	
Intersection Capacity Utilization 94.9%	ICU Level of Service F	
Analysis Period (min) 15		

Splits and Phases: 2: Parker Road & Stroh Road



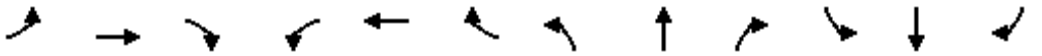


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	453	42	245	22	27	92	179	1974	21	78	2813	318
v/c Ratio	0.89	0.19	0.15	0.12	0.12	0.06	0.57	0.68	0.02	0.53	1.03	0.20
Control Delay	61.1	45.7	0.2	37.1	50.6	0.1	55.7	19.2	0.1	61.5	49.3	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.1	45.7	0.2	37.1	50.6	0.1	55.7	19.2	0.1	61.5	49.3	0.3
Queue Length 50th (ft)	151	24	0	13	10	0	65	394	0	55	~831	0
Queue Length 95th (ft)	#218	63	0	35	25	0	103	469	0	105	#926	0
Internal Link Dist (ft)		589			1174			1592			712	
Turn Bay Length (ft)				315		155	350		285	530		560
Base Capacity (vph)	510	361	1583	192	478	1564	313	2905	975	178	2744	1583
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	0.89	0.12	0.15	0.11	0.06	0.06	0.57	0.68	0.02	0.44	1.03	0.20

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 (vph)	435	40	235	20	25	85	170	1875	20	75	2700	305
Future Volume (vph)	435	40	235	20	25	85	170	1875	20	75	2700	305
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2	4.0	5.5	5.5	4.0	6.2	7.0	7.0	6.2	7.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583	1770	3539	1564	3433	4988	1583	1770	4988	1583
Flt Permitted	0.42	1.00	1.00	0.98	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1506	1863	1583	1817	3539	1564	3433	4988	1583	1770	4988	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.92	0.92	0.92	0.95	0.95	0.95	0.96	0.96	0.96
Adj. Flow (vph)	453	42	245	22	27	92	179	1974	21	78	2812	318
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	9	0	0	0
Lane Group Flow (vph)	453	42	245	22	27	92	179	1974	12	78	2813	318
Confl. Peds. (#/hr)						1						
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	4%	2%
Turn Type	pm+pt	NA	Free	pm+pt	NA	Free	Prot	NA	Perm	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free	8		Free			2			Free
Actuated Green, G (s)	22.4	14.1	111.2	6.9	4.1	111.2	9.8	62.7	62.7	7.7	60.6	111.2
Effective Green, g (s)	22.4	14.1	111.2	6.9	4.1	111.2	9.8	62.7	62.7	7.7	60.6	111.2
Actuated g/C Ratio	0.20	0.13	1.00	0.06	0.04	1.00	0.09	0.56	0.56	0.07	0.54	1.00
Clearance Time (s)	5.2	5.2		5.5	5.5		6.2	7.0	7.0	6.2	7.0	
Vehicle Extension (s)	2.5	2.5		3.0	3.0		2.5	5.0	5.0	2.5	5.0	
Lane Grp Cap (vph)	525	236	1583	111	130	1564	302	2812	892	122	2718	1583
v/s Ratio Prot	c0.10	0.02		0.00	0.01		c0.05	0.40		0.04	c0.56	
v/s Ratio Perm	c0.07		0.15	0.01		0.06			0.01			c0.20
v/c Ratio	0.86	0.18	0.15	0.20	0.21	0.06	0.59	0.70	0.01	0.64	1.03	0.20
Uniform Delay, d1	41.2	43.4	0.0	49.5	52.0	0.0	48.8	17.5	10.7	50.4	25.3	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.6	0.3	0.2	0.9	0.8	0.1	2.6	1.5	0.0	9.3	27.1	0.3
Delay (s)	54.8	43.6	0.2	50.4	52.8	0.1	51.4	19.0	10.7	59.7	52.4	0.3
Level of Service	D	D	A	D	D	A	D	B	B	E	D	A
Approach Delay (s)		36.1			18.0			21.6			47.4	
Approach LOS		D			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	36.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	111.2	Sum of lost time (s)	23.9
Intersection Capacity Utilization	94.9%	ICU Level of Service	F
Analysis Period (min)	15		

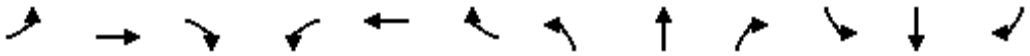
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	575	175	25	415	35	180	30	100	30	15	40
Future Volume (vph)	60	575	175	25	415	35	180	30	100	30	15	40
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		2			6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	2	2	2	6	6	6	3	8	8	4	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)	22.5	22.5	22.5	22.5	22.5	22.5	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	77.0	77.0	77.0	77.0	77.0	77.0	20.0	43.0	43.0	23.0	23.0	23.0
Total Split (%)	64.2%	64.2%	64.2%	64.2%	64.2%	64.2%	16.7%	35.8%	35.8%	19.2%	19.2%	19.2%
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							Lag			Lead	Lead	Lead
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	Ped	Ped	Ped	Ped	Ped
Act Effct Green (s)	82.7	82.7	82.7	82.7	82.7	82.7	28.3	28.3	28.3	18.0	18.0	18.0
Actuated g/C Ratio	0.69	0.69	0.69	0.69	0.69	0.69	0.24	0.24	0.24	0.15	0.15	0.15
v/c Ratio	0.13	0.56	0.19	0.07	0.35	0.04	0.57	0.08	0.24	0.21	0.08	0.20
Control Delay	7.1	11.6	2.4	6.8	8.6	0.9	48.1	36.0	8.0	47.8	44.9	13.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.1	11.6	2.4	6.8	8.6	0.9	48.1	36.0	8.0	47.8	44.9	13.1
LOS	A	B	A	A	A	A	D	D	A	D	D	B
Approach Delay		9.3			7.9			34.0			30.9	
Approach LOS		A			A			C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
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: 0.57	
Intersection Signal Delay: 14.5	Intersection LOS: B
Intersection Capacity Utilization 62.3%	ICU Level of Service B
Analysis Period (min) 15	

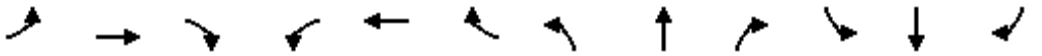
Splits and Phases: 3: J. Morgan Blvd & Stroh Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	75	719	219	27	446	38	196	33	109	43	22	58
v/c Ratio	0.13	0.56	0.19	0.07	0.35	0.04	0.57	0.08	0.24	0.21	0.08	0.20
Control Delay	7.1	11.6	2.4	6.8	8.6	0.9	48.1	36.0	8.0	47.8	44.9	13.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.1	11.6	2.4	6.8	8.6	0.9	48.1	36.0	8.0	47.8	44.9	13.1
Queue Length 50th (ft)	18	252	13	6	126	0	132	20	0	30	15	0
Queue Length 95th (ft)	32	298	30	17	188	7	203	47	46	49	30	20
Internal Link Dist (ft)		1161			1370			528			716	
Turn Bay Length (ft)	240		150	150		150	150		150	150		
Base Capacity (vph)	586	1283	1140	379	1283	1082	488	597	581	211	287	293
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	0.56	0.19	0.07	0.35	0.04	0.40	0.06	0.19	0.20	0.08	0.20

Intersection Summary



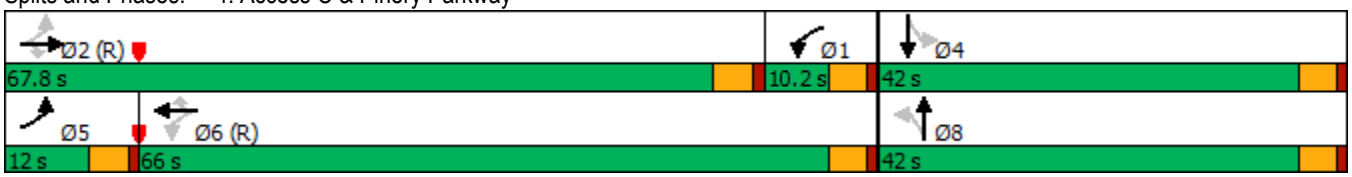
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	575	175	25	415	35	180	30	100	30	15	40
Future Volume (vph)	60	575	175	25	415	35	180	30	100	30	15	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost 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
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1546	1770	1863	1583	1770	1863	1583
Flt Permitted	0.46	1.00	1.00	0.30	1.00	1.00	0.74	1.00	1.00	0.74	1.00	1.00
Satd. Flow (perm)	852	1863	1583	551	1863	1546	1384	1863	1583	1370	1863	1583
Peak-hour factor, PHF	0.80	0.80	0.80	0.93	0.93	0.93	0.92	0.92	0.92	0.69	0.69	0.69
Adj. Flow (vph)	75	719	219	27	446	38	196	33	109	43	22	58
RTOR Reduction (vph)	0	0	50	0	0	12	0	0	83	0	0	49
Lane Group Flow (vph)	75	719	169	27	446	26	196	33	26	43	22	9
Confl. Peds. (#/hr)						1						
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		2			6		3	8			4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	82.7	82.7	82.7	82.7	82.7	82.7	28.3	28.3	28.3	18.0	18.0	18.0
Effective Green, g (s)	82.7	82.7	82.7	82.7	82.7	82.7	28.3	28.3	28.3	18.0	18.0	18.0
Actuated g/C Ratio	0.69	0.69	0.69	0.69	0.69	0.69	0.24	0.24	0.24	0.15	0.15	0.15
Clearance 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
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	587	1283	1090	379	1283	1065	345	439	373	205	279	237
v/s Ratio Prot		c0.39			0.24		c0.03	0.02			0.01	
v/s Ratio Perm	0.09		0.11	0.05		0.02	c0.11		0.02	0.03		0.01
v/c Ratio	0.13	0.56	0.15	0.07	0.35	0.02	0.57	0.08	0.07	0.21	0.08	0.04
Uniform Delay, d1	6.4	9.4	6.5	6.1	7.6	5.9	40.8	35.7	35.6	44.8	43.9	43.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	1.8	0.3	0.4	0.7	0.0	2.1	0.1	0.1	0.5	0.1	0.1
Delay (s)	6.8	11.2	6.8	6.5	8.4	5.9	43.0	35.7	35.7	45.3	44.0	43.7
Level of Service	A	B	A	A	A	A	D	D	D	D	D	D
Approach Delay (s)		9.9			8.1			39.9			44.3	
Approach LOS		A			A			D			D	

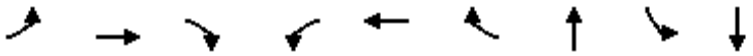
Intersection Summary			
HCM 2000 Control Delay	16.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	85	585	45	55	420	175	45	5	220	5
Future Volume (vph)	85	585	45	55	420	175	45	5	220	5
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2		1	6			8		4
Permitted Phases	2		2	6		6	8		4	
Detector Phase	5	2	2	1	6	6	8	8	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
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	12.0	67.8	67.8	10.2	66.0	66.0	42.0	42.0	42.0	42.0
Total Split (%)	10.0%	56.5%	56.5%	8.5%	55.0%	55.0%	35.0%	35.0%	35.0%	35.0%
Yellow Time (s)	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
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)	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	Max	Max	Max	Max
Act Effct Green (s)	65.3	65.3	65.3	61.8	61.8	61.8		37.5	37.5	37.5
Actuated g/C Ratio	0.54	0.54	0.54	0.52	0.52	0.52		0.31	0.31	0.31
v/c Ratio	0.19	0.33	0.06	0.14	0.25	0.21		0.24	0.62	0.20
Control Delay	11.8	12.7	1.6	10.0	8.9	1.3		18.7	43.4	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	11.8	12.7	1.6	10.0	8.9	1.3		18.7	43.4	7.1
LOS	B	B	A	B	A	A		B	D	A
Approach Delay		11.9			6.9			18.7		31.6
Approach LOS		B			A			B		C

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 35 (29%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.62	
Intersection Signal Delay: 14.1	Intersection LOS: B
Intersection Capacity Utilization 50.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 4: Access C & Pinery Parkway

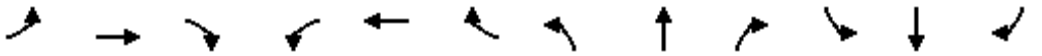




Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	92	636	49	60	457	190	119	239	114
v/c Ratio	0.19	0.33	0.06	0.14	0.25	0.21	0.24	0.62	0.20
Control Delay	11.8	12.7	1.6	10.0	8.9	1.3	18.7	43.4	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.8	12.7	1.6	10.0	8.9	1.3	18.7	43.4	7.1
Queue Length 50th (ft)	33	125	3	10	40	0	37	157	3
Queue Length 95th (ft)	m47	143	m7	m25	72	11	85	249	45
Internal Link Dist (ft)		575			553		284		431
Turn Bay Length (ft)	80		80	160				150	
Base Capacity (vph)	480	1926	887	441	1821	906	494	387	573
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.33	0.06	0.14	0.25	0.21	0.24	0.62	0.20

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)	85	585	45	55	420	175	45	5	60	220	5	100
Future Volume (vph)	85	585	45	55	420	175	45	5	60	220	5	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5		4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.93		1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1691		1770	1596	
Flt Permitted	0.41	1.00	1.00	0.41	1.00	1.00		0.85		0.66	1.00	
Satd. Flow (perm)	767	3539	1583	764	3539	1583		1466		1238	1596	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	92	636	49	60	457	190	49	5	65	239	5	109
RTOR Reduction (vph)	0	0	23	0	0	92	0	36	0	0	75	0
Lane Group Flow (vph)	92	636	26	60	457	98	0	83	0	239	39	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	64.4	64.4	64.4	61.8	61.8	61.8		37.5		37.5	37.5	
Effective Green, g (s)	64.4	64.4	64.4	61.8	61.8	61.8		37.5		37.5	37.5	
Actuated g/C Ratio	0.54	0.54	0.54	0.51	0.51	0.51		0.31		0.31	0.31	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5		4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)	471	1899	849	432	1822	815		458		386	498	
v/s Ratio Prot	0.01	c0.18		0.01	c0.13						0.02	
v/s Ratio Perm	0.09		0.02	0.07		0.06		0.06		c0.19		
v/c Ratio	0.20	0.33	0.03	0.14	0.25	0.12		0.18		0.62	0.08	
Uniform Delay, d1	14.0	15.7	13.1	15.3	16.2	15.0		30.1		35.2	29.1	
Progression Factor	0.78	0.78	0.48	0.59	0.52	0.36		1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.5	0.1	0.1	0.3	0.3		0.9		7.3	0.3	
Delay (s)	11.0	12.7	6.4	9.2	8.8	5.8		30.9		42.4	29.4	
Level of Service	B	B	A	A	A	A		C		D	C	
Approach Delay (s)		12.1			8.0			30.9			38.2	
Approach LOS		B			A			C			D	

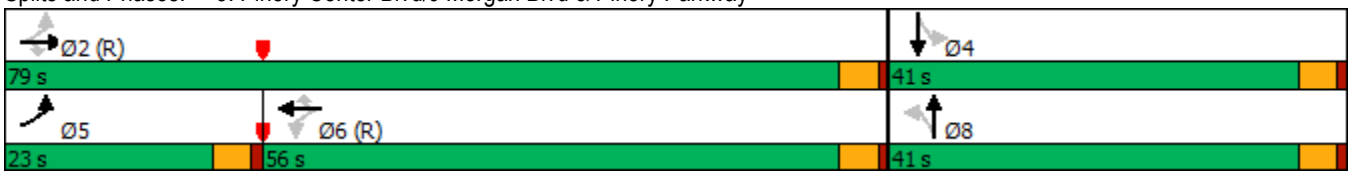
Intersection Summary			
HCM 2000 Control Delay	16.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		

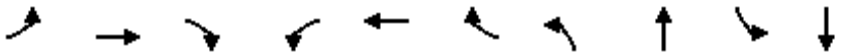
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	175	500	35	45	440	85	60	130	190	115
Future Volume (vph)	175	500	35	45	440	85	60	130	190	115
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2			6			8		4
Permitted Phases	2		2	6		6	8		4	
Detector Phase	5	2	2	6	6	6	8	8	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
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	23.0	79.0	79.0	56.0	56.0	56.0	41.0	41.0	41.0	41.0
Total Split (%)	19.2%	65.8%	65.8%	46.7%	46.7%	46.7%	34.2%	34.2%	34.2%	34.2%
Yellow Time (s)	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
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)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead			Lag	Lag	Lag				
Lead-Lag Optimize?	Yes			Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	C-Max	Max	Max	Max	Max
Act Effct Green (s)	74.5	74.5	74.5	59.0	59.0	59.0	36.5	36.5	36.5	36.5
Actuated g/C Ratio	0.62	0.62	0.62	0.49	0.49	0.49	0.30	0.30	0.30	0.30
v/c Ratio	0.34	0.25	0.04	0.12	0.27	0.11	0.28	0.31	0.64	0.50
Control Delay	11.5	10.5	2.8	21.2	18.4	7.3	35.7	32.1	46.8	31.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.5	10.5	2.8	21.2	18.4	7.3	35.7	32.1	46.8	31.1
LOS	B	B	A	C	B	A	D	C	D	C
Approach Delay		10.4			17.0			33.1		37.8
Approach LOS		B			B			C		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 46 (38%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 21.2	Intersection LOS: C
Intersection Capacity Utilization 56.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 5: Pinery Center Blvd/J Morgan Blvd & Pinery Parkway





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	190	543	38	49	478	92	65	174	207	277
v/c Ratio	0.34	0.25	0.04	0.12	0.27	0.11	0.28	0.31	0.64	0.50
Control Delay	11.5	10.5	2.8	21.2	18.4	7.3	35.7	32.1	46.8	31.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.5	10.5	2.8	21.2	18.4	7.3	35.7	32.1	46.8	31.1
Queue Length 50th (ft)	58	92	0	14	72	0	38	97	139	142
Queue Length 95th (ft)	92	121	13	42	132	36	79	160	228	228
Internal Link Dist (ft)		446			575			367		49
Turn Bay Length (ft)	150		150	150		150	150		150	
Base Capacity (vph)	624	2197	997	410	1739	825	236	557	322	556
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	0.30	0.25	0.04	0.12	0.27	0.11	0.28	0.31	0.64	0.50

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	175	500	35	45	440	85	60	130	30	190	115	140
Future Volume (vph)	175	500	35	45	440	85	60	130	30	190	115	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1810		1770	1709	
Flt Permitted	0.40	1.00	1.00	0.45	1.00	1.00	0.42	1.00		0.57	1.00	
Satd. Flow (perm)	753	3539	1583	837	3539	1583	776	1810		1059	1709	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	190	543	38	49	478	92	65	141	33	207	125	152
RTOR Reduction (vph)	0	0	14	0	0	47	0	7	0	0	36	0
Lane Group Flow (vph)	190	543	24	49	478	45	65	167	0	207	241	0
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	74.5	74.5	74.5	59.0	59.0	59.0	36.5	36.5		36.5	36.5	
Effective Green, g (s)	74.5	74.5	74.5	59.0	59.0	59.0	36.5	36.5		36.5	36.5	
Actuated g/C Ratio	0.62	0.62	0.62	0.49	0.49	0.49	0.30	0.30		0.30	0.30	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	560	2197	982	411	1740	778	236	550		322	519	
v/s Ratio Prot	c0.03	0.15			0.14			0.09			0.14	
v/s Ratio Perm	c0.18		0.01	0.06		0.03	0.08			c0.20		
v/c Ratio	0.34	0.25	0.02	0.12	0.27	0.06	0.28	0.30		0.64	0.46	
Uniform Delay, d1	10.2	10.2	8.8	16.5	17.9	16.0	31.7	32.0		36.1	33.8	
Progression Factor	1.00	1.00	1.00	1.15	0.98	1.95	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.3	0.0	0.6	0.4	0.1	2.9	1.4		9.5	3.0	
Delay (s)	10.5	10.5	8.8	19.6	17.9	31.3	34.6	33.4		45.6	36.8	
Level of Service	B	B	A	B	B	C	C	C		D	D	
Approach Delay (s)		10.4			20.0			33.7			40.6	
Approach LOS		B			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	22.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	56.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	214	0	2100	2600	300
Future Vol, veh/h	0	214	0	2100	2600	300
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	None
Storage Length	-	0	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	233	0	2211	2737	316

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	-	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	0	-	-	-
Stage 1	0	0	0	-	-	-
Stage 2	0	0	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	0	-	-
HCM Lane LOS	-	A	-	-
HCM 95th %tile Q(veh)	-	-	-	-

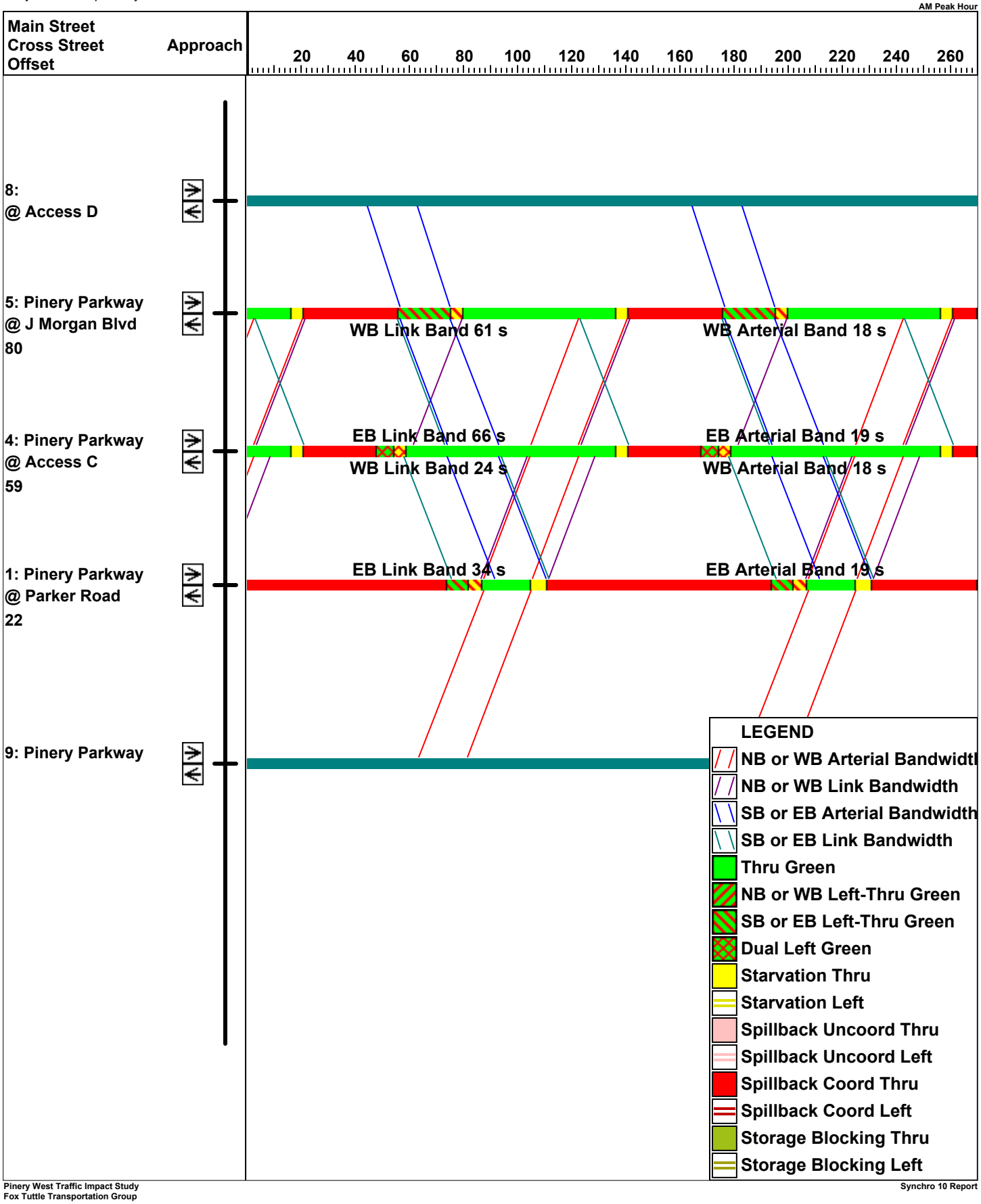
Intersection	
Int Delay, s/veh	1

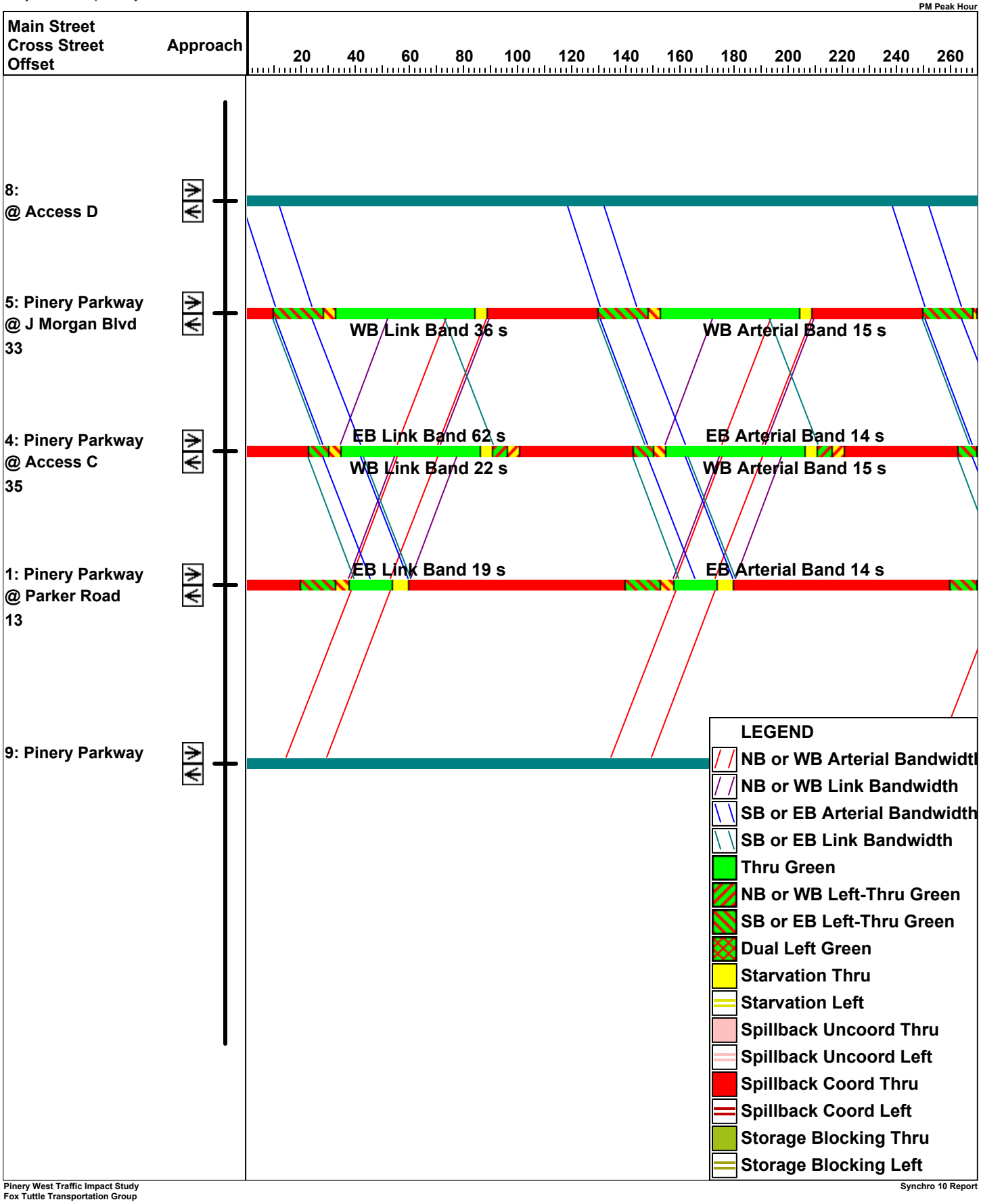
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	625	15	50	600	0	85
Future Vol, veh/h	625	15	50	600	0	85
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	-	0
Veh in Median Storage, #	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	679	16	54	652	0	92

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	695	0	-	348
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.14	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.22	-	-	3.32
Pot Cap-1 Maneuver	-	-	897	-	0	648
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	897	-	-	648
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	11.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	648	-	-	897	-
HCM Lane V/C Ratio	0.143	-	-	0.061	-
HCM Control Delay (s)	11.5	-	-	9.3	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.5	-	-	0.2	-


Main Street
Cross Street
Offset
Approach
20
40
60
80
100
120
140
160
180
200
220
240
260
8:
@ Access D
5: Pinery Parkway
@ J Morgan Blvd
80
WB Link Band 61 s
WB Arterial Band 18 s
4: Pinery Parkway
@ Access C
59
EB Link Band 66 s
WB Link Band 24 s
EB Arterial Band 19 s
WB Arterial Band 18 s
1: Pinery Parkway
@ Parker Road
22
EB Link Band 34 s
EB Arterial Band 19 s
9: Pinery Parkway
LEGEND
NB or WB Arterial Bandwidth
NB or WB Link Bandwidth
SB or EB Arterial Bandwidth
SB or EB Link Bandwidth
Thru Green
NB or WB Left-Thru Green
SB or EB Left-Thru Green
Dual Left Green
Starvation Thru
Starvation Left
Spillback Uncoord Thru
Spillback Uncoord Left
Spillback Coord Thru
Spillback Coord Left
Storage Blocking Thru
Storage Blocking Left


Main Street
Cross Street
Offset
Approach
20
40
60
80
100
120
140
160
180
200
220
240
260
8:
@ Access D
5: Pinery Parkway
@ J Morgan Blvd
33
WB Link Band 36 s
WB Arterial Band 15 s
4: Pinery Parkway
@ Access C
35
EB Link Band 62 s
WB Link Band 22 s
EB Arterial Band 14 s
WB Arterial Band 15 s
1: Pinery Parkway
@ Parker Road
13
EB Link Band 19 s
EB Arterial Band 14 s
9: Pinery Parkway
LEGEND
NB or WB Arterial Bandwidth
NB or WB Link Bandwidth
SB or EB Arterial Bandwidth
SB or EB Link Bandwidth
Thru Green
NB or WB Left-Thru Green
SB or EB Left-Thru Green
Dual Left Green
Starvation Thru
Starvation Left
Spillback Uncoord Thru
Spillback Uncoord Left
Spillback Coord Thru
Spillback Coord Left
Storage Blocking Thru
Storage Blocking Left

PINERY VILLAGE FILING NO. 2

A PORTION OF PLANNING AREAS 41, 42, 43, & OPEN SPACE H-1, AND LOT 2 & TRACT E, PINERY VILLAGE FILING NO. 1
LOCATED IN THE SOUTHEAST QUARTER OF SECTION 3 AND THE NORTHEAST QUARTER OF SECTION 10,
TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
COUNTY OF DOUGLAS, STATE OF COLORADO.
87.848 ACRES - 3 COMMERCIAL LOTS - 7 TRACTS SB2021-049

LEGAL DESCRIPTION

A PARCEL OF LAND SITUATED IN THE SOUTHEAST QUARTER OF SECTION 3 AND THE NORTHEAST QUARTER OF SECTION 10, TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF DOUGLAS, STATE OF COLORADO, MORE PARTICULARLY DESCRIBED AS FOLLOWS;

COMMENCING AT THE CENTER-SOUTH ONE-SIXTEENTH CORNER OF SAID SECTION 3, WHENCE THE NORTH LINE OF THE SOUTH HALF OF THE SOUTHEAST QUARTER OF SAID SECTION 3 BEARS NORTH 89°32'31"EAST, A DISTANCE OF 2635.68 FEET WITH ALL BEARINGS HEREON REFERENCED TO SAID LINE;

THENCE ALONG SAID NORTH LINE, NORTH 89°32'31"EAST, A DISTANCE OF 40.73 FEET TO THE NORTHEAST CORNER OF PINERY VILLAGE FILING NO. 1 AS RECORDED AT RECEPTION NO. 2020006468 IN THE OFFICIAL RECORDS OF THE DOUGLAS COUNTY CLERK AND RECORDER'S OFFICE, AND THE **POINT OF BEGINNING**;

THENCE CONTINUING ALONG SAID NORTH LINE, NORTH 89°32'31" EAST, A DISTANCE OF 1,817.24 FEET TO THE WESTERLY RIGHT-OF-WAY OF PARKER ROAD, RECORDED IN BOOK 1805 AT PAGE 1143, OF SAID RECORDS;

THENCE ALONG SAID WESTERLY RIGHT-OF-WAY THE FOLLOWING FOUR (4) COURSES:

1. SOUTH 01°44'50" WEST, A DISTANCE OF 1,329.43 FEET;
2. SOUTH 19°39'08" WEST, A DISTANCE OF 211.40 FEET;
3. SOUTH 01°44'27" WEST, A DISTANCE OF 749.39 FEET;
4. SOUTH 18°46'51" EAST, A DISTANCE OF 86.02 FEET TO THE BOUNDARY OF SAID PINERY VILLAGE FILING NO. 1;

THENCE ALONG SAID BOUNDARY THE FOLLOWING SIXTEEN (16) COURSES;

1. SOUTH 01°44'50" WEST, A DISTANCE OF 316.60 FEET TO THE BEGINNING OF A NON-TANGENT CURVE CONCAVE NORTHERLY HAVING A RADIUS OF 35.00 FEET, THE RADIUS POINT OF SAID CURVE BEARS NORTH 23°37'47" WEST;
2. SOUTHWESTERLY ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 23°34'56", AN ARC LENGTH OF 14.41 FEET;
3. SOUTH 89°57'09" WEST, A DISTANCE OF 1,163.73 FEET;
4. NORTH 45°19'53" WEST, A DISTANCE OF 42.44 FEET;
5. NORTH 00°37'01" WEST, A DISTANCE OF 528.99 FEET;
6. SOUTH 89°45'03" WEST, A DISTANCE OF 66.50 FEET;
7. NORTH 00°37'01" WEST, A DISTANCE OF 780.33 FEET;
8. NORTH 00°36'54" WEST, A DISTANCE OF 116.93 FEET;
9. SOUTH 89°39'16" WEST, A DISTANCE OF 330.91 FEET;
10. NORTH 06°01'28" EAST, A DISTANCE OF 235.83 FEET;
11. NORTH 17°28'32" EAST, A DISTANCE OF 468.15 FEET;
12. NORTH 03°50'12" EAST, A DISTANCE OF 121.74 FEET;
13. NORTH 16°22'12" WEST, A DISTANCE OF 279.83 FEET;
14. NORTH 37°38'54" WEST, A DISTANCE OF 83.00 FEET;
15. NORTH 68°29'08" WEST, A DISTANCE OF 133.51 FEET;
16. NORTH 00°32'20" WEST, A DISTANCE OF 24.94 FEET TO THE **POINT OF BEGINNING**.

CONTAINING AN AREA OF 87.848 ACRES, (3,826,658 SQUARE FEET), MORE OR LESS.

DEDICATION STATEMENT

THE UNDERSIGNED, BEING ALL THE OWNERS, MORTGAGEES, BENEFICIARIES OF DEEDS OF TRUST AND HOLDERS OF OTHER INTERESTS IN THE LANDS DESCRIBED HEREIN, HAVE LAID OUT, SUBDIVIDED AND PLATTED SAID LANDS INTO LOTS, TRACTS, STREETS AND EASEMENTS AS SHOWN HEREON UNDER THE NAME AND SUBDIVISION OF **PINERY VILLAGE FILING NO. 2**. THE UTILITY EASEMENTS SHOWN HEREON ARE HEREBY DEDICATED FOR PUBLIC UTILITIES AND CABLE COMMUNICATION SYSTEMS AND OTHER PURPOSES AS SHOWN HEREON. THE ENTITIES RESPONSIBLE FOR PROVIDING THE SERVICES FOR WHICH THE EASEMENTS ARE ESTABLISHED ARE HEREBY GRANTED THE PERPETUAL RIGHT OF INGRESS AND EGRESS FROM AND TO ADJACENT PROPERTIES FOR INSTALLATION, MAINTENANCE AND REPLACEMENT OF UTILITY LINES AND RELATED FACILITIES. THE RIGHT-OF-WAY DEDICATION KNOWN AS PINERY CENTER BOULEVARD, AND TRACT F RIGHTS-OF-WAY, AS SHOWN HEREON ARE DEDICATED AND CONVEYED TO DOUGLAS COUNTY, COLORADO, IN FEE SIMPLE ABSOLUTE, WITH MARKETABLE TITLE, FOR PUBLIC USES AND PURPOSES. UTILITY EASEMENTS, DRAINAGE AND BLANKET ACCESS EASEMENTS, TEMPORARY ACCESS EASEMENT, AND DRAINAGE EASEMENTS ARE DEDICATED AND CONVEYED TO DOUGLAS COUNTY, COLORADO, FOR PUBLIC USES AND PURPOSES.

OWNER

PINERY OWNER, LLC, A COLORADO LIMITED LIABILITY COMPANY

BY: _____

STATE OF COLORADO)
)SS
COUNTY OF DOUGLAS)

ACKNOWLEDGED BEFORE ME THIS ___ DAY OF _____, 20__
BY _____ AS _____
OF PINERY OWNER, LLC, A COLORADO LIMITED LIABILITY COMPANY

WITNESS MY HAND
AND OFFICIAL SEAL

MY COMMISSION
EXPIRES: _____ _____
NOTARY PUBLIC

OWNER

PINERY COMMERCIAL METROPOLITAN DISTRICT NO. 1,

BY: _____

STATE OF COLORADO)
)SS
COUNTY OF DOUGLAS)

ACKNOWLEDGED BEFORE ME THIS ___ DAY OF _____, 20__
BY _____ AS _____
OF PINERY COMMERCIAL METROPOLITAN DISTRICT NO. 1,

WITNESS MY HAND
AND OFFICIAL SEAL

MY COMMISSION
EXPIRES: _____ _____
NOTARY PUBLIC

OWNER

PINERY COMMERCIAL METROPOLITAN DISTRICT NO. 2,

BY: _____

STATE OF COLORADO)
)SS
COUNTY OF DOUGLAS)

ACKNOWLEDGED BEFORE ME THIS ___ DAY OF _____
BY _____ AS _____
OF PINERY COMMERCIAL METROPOLITAN DISTRICT NO. 2,

WITNESS MY HAND
AND OFFICIAL SEAL

MY COMMISSION
EXPIRES: _____ _____
NOTARY PUBLIC

ACCEPTANCE CERTIFICATE

THE DEDICATION OF TRACTS A, B, C, D, E, AND G ARE HEREBY ACCEPTED FOR OWNERSHIP AND MAINTENANCE BY THE PINERY COMMERCIAL METROPOLITAN DISTRICT NO. 2;

THE PINERY COMMERCIAL METROPOLITAN DISTRICT NO. 2:

BY: _____

STATE OF COLORADO)
)SS
COUNTY OF DOUGLAS)

ACKNOWLEDGED BEFORE ME THIS ___ DAY OF _____, 20__
BY _____, AS _____
OF THE PINERY COMMERCIAL METROPOLITAN DISTRICT NO. 2

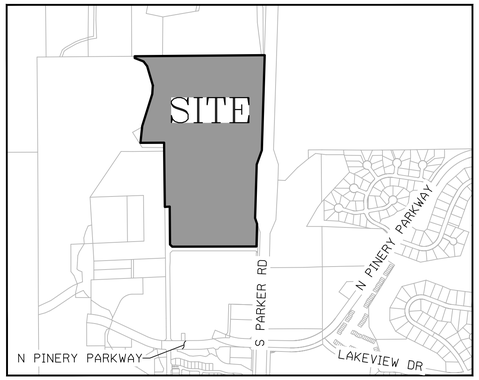
WITNESS MY HAND
AND OFFICIAL SEAL

MY COMMISSION
EXPIRES: _____ _____
NOTARY PUBLIC

PLANNING COMMISSIONERS CERTIFICATE

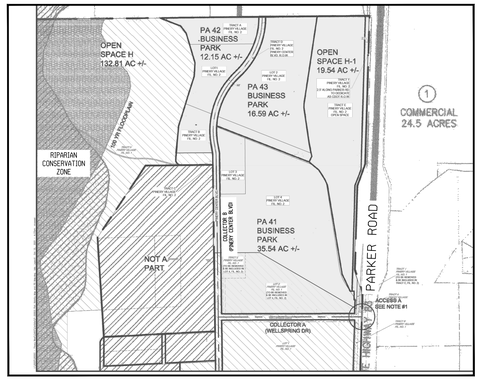
THE MINOR DEVELOPMENT FINAL PLAT (SB2021-049) WAS REVIEWED BY THE PLANNING COMMISSION ON _____ __, 20__

_____ _____
PLANNING DIRECTOR, ON BEHALF OF THE PLANNING COMMISSION DATE



VICINITY MAP

SCALE 1" = 1,000'



PLANNED DEVELOPMENT

SCALE = NOT TO SCALE

TITLE VERIFICATION

WE, FIRST AMERICAN TITLE INSURANCE COMPANY, DO HEREBY CERTIFY THAT WE HAVE EXAMINED THE TITLE OF ALL LAND PLATTED HEREON AND THAT TITLE TO SUCH LAND IS IN THE DEDICATOR(S) FREE AND CLEAR OF ALL LIENS, TAXES AND ENCUMBRANCES.

FIRST AMERICAN TITLE INSURANCE COMPANY

BY: _____

TITLE: _____

DATE: _____

STATE OF COLORADO)
)SS
COUNTY OF _____)

ACKNOWLEDGED BEFORE ME THIS _____ DAY OF _____, 20__

BY _____ AS _____

OF FIRST AMERICAN TITLE INSURANCE COMPANY

WITNESS MY HAND AND OFFICIAL SEAL

MY COMMISSION EXPIRES: _____ _____
NOTARY PUBLIC

BOARD OF COUNTY COMMISSIONERS CERTIFICATE

THIS PLAT WAS APPROVED FOR FILING BY THE BOARD OF COUNTY COMMISSIONERS OF DOUGLAS COUNTY,

COLORADO, ON THE _____DAY OF _____ , 20__, SUBJECT TO ANY CONDITIONS SPECIFIED HEREON.

PINERY CENTER BOULEVARD, AND TRACT F, UTILITY EASEMENTS, DRAINAGE AND BLANKET ACCESS EASEMENTS, TEMPORARY ACCESS EASEMENT, AND DRAINAGE EASEMENTS ARE ACCEPTED.

ALL EXPENSES INCURRED WITH RESPECT TO IMPROVEMENTS FOR ALL UTILITY SERVICES, PAVING, GRADING, LANDSCAPING, CURBS, GUTTER, SIDEWALKS, ROAD LIGHTING, ROAD SIGNS, FLOOD PROTECTION DEVICES, DRAINAGE STRUCTURES, AND ALL OTHER IMPROVEMENTS THAT MAY BE REQUIRED SHALL BE THE RESPONSIBILITY OF THE SUBDIVIDER AND NOT DOUGLAS COUNTY.

THIS ACCEPTANCE DOES NOT GUARANTEE THAT SOIL CONDITIONS, SUBSURFACE GEOLOGY, GROUNDWATER CONDITIONS OR FLOODING CONDITIONS OF ANY LOTS SHOWN HEREON ARE SUCH THAT A BUILDING PERMIT, WELL PERMIT OR SEWAGE DISPOSAL PERMIT WILL BE ISSUED.

_____
CHAIR, BOARD OF COUNTY COMMISSIONERS

LAND USE TABLE

TRACT	AREA (SQ.FT)	AREA (AC ±)	USE	OWNED BY / MAINTAINED BY
LOT 1	212,152	4.870	COMMERCIAL	OWNER
LOT 2	656,732	15.076	COMMERCIAL	OWNER
LOT 3	1,417,710	32.546	COMMERCIAL	OWNER
ROW DEDICATION	139,327	3.199	RIGHT-OF-WAY	DOUGLAS COUNTY
TRACT A	162,913	3.740	OPEN SPACE / DRAINAGE	THE PINERY COMMERCIAL METROPOLITAN DISTRICT NO. 2
TRACT B	113,415	2.604	OPEN SPACE / DRAINAGE	THE PINERY COMMERCIAL METROPOLITAN DISTRICT NO. 2
TRACT C	537	0.012	OPEN SPACE / DRAINAGE	THE PINERY COMMERCIAL METROPOLITAN DISTRICT NO. 2
TRACT D	128,796	2.957	REGIONAL TRANSPORTATION DISTRICT (RTD)	THE PINERY COMMERCIAL METROPOLITAN DISTRICT NO. 2
TRACT E	988,789	22.699	OPEN SPACE / DRAINAGE	THE PINERY COMMERCIAL METROPOLITAN DISTRICT NO. 2
TRACT F	3,333	0.077	RIGHT-OF-WAY	DOUGLAS COUNTY
TRACT G	2,954	0.068	LIFT STATION	THE PINERY COMMERCIAL METROPOLITAN DISTRICT NO. 2
LOT TOTAL	2,286,595	52.492		
TRACT TOTAL	1,400,737	32.157		
ROW (STREET) TOTAL	139,327	3.199		
TOTAL	3,826,658	87.848		

(SEE ADDITIONAL TRACT NOTES THIS SHEET)

SHEET INDEX

SHEET 1 COVER SHEET

SHEET 2 OVERALL SHEET

SHEETS 3-4 LOT AND EASEMENT DETAIL SHEETS

GENERAL NOTES

1. ANY PERSON WHO KNOWINGLY REMOVES, ALTERS OR DEFACES ANY PUBLIC LAND SURVEY MONUMENT OR LAND BOUNDARY MONUMENT OR ACCESSORY COMMITS A CLASS TWO (2) MISDEMEANOR PURSUANT TO STATE STATUTE 18-4-508, COLORADO REVISED STATUTE.
2. PER C.R.S. 38-51-106, "ALL LINEAL UNITS DEPICTED ON THIS LAND SURVEY PLAT ARE U.S. SURVEY FEET. ONE METER EQUALS 39.37/12 U.S. SURVEY FEET, EXACTLY ACCORDING TO THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY."
3. THE FIELD WORK FOR THIS SURVEY WAS PERFORMED BY AN AZTEC CONSULTANTS, INC. SURVEY CREW AND COMPLETED ON APRIL 01, 2021.
4. BASIS OF BEARINGS - BEARINGS SHOWN HEREON ARE GRID BEARINGS DERIVED FROM GPS OBSERVATION BASED UPON THE COLORADO COORDINATE SYSTEM OF 1983 CENTRAL ZONE (NAD 83, 2011) REFERENCED TO THE NORTH LINE OF THE SOUTH HALF OF THE SOUTHEAST QUARTER OF SECTION 3, TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE 6TH PRINCIPAL MERIDIAN BEING MONUMENTED AS SHOWN HEREON, TAKEN TO BEAR NORTH 89°32'31" EAST, A DISTANCE OF 2,635.68 FEET.
5. FIRST AMERICAN TITLE INSURANCE COMPANY COMMITMENT NO. NCS-927312-CO, EFFECTIVE 10/21/2020 AT 5:00 P.M. WAS RELIED UPON FOR RECORD INFORMATION REGARDING RIGHTS-OF-WAY, EASEMENTS AND ENCUMBRANCES. THIS SURVEY DOES NOT REPRESENT A TITLE SEARCH BY AZTEC CONSULTANTS INC. TO DETERMINE OWNERSHIP, RIGHTS-OF-WAY, EASEMENTS OR OTHER MATTERS OF PUBLIC RECORD.
6. BASED ON A GRAPHICAL REPRESENTATION OF FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP (FIRM) NO. 08035C0184G, WITH AN EFFECTIVE DATE OF MARCH 16, 2016, THE SUBJECT PROPERTY LIES WITHIN ZONE "AE" AREAS WHERE BASE FLOOD ELEVATIONS HAVE BEEN DETERMINED, WITHIN ZONE "X" OTHER AREAS, AND WITHIN "ZONE X" BEING DEFINED AS "AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
7. TRACTS A, B, C, D, E & G SHALL BE OWNED AND MAINTAINED BY THE PINERY COMMERCIAL METROPOLITAN DISTRICT NO. 2, ITS SUCCESSORS AND ASSIGNS, FOR OPEN SPACE.
8. DRAINAGE EASEMENTS ARE HEREBY GRANTED TO DOUGLAS COUNTY ACROSS TRACTS A, B, C, E, AND THE DRAINAGE EASEMENTS ON LOTS 1 & 2 IN PINERY VILLAGE FILING NO. 2 (THE "SUBDIVISION") FOR THE PURPOSE OF ACCESSING, MAINTAINING AND REPAIRING STORM WATER MANAGEMENT IMPROVEMENTS, INCLUDING BUT NOT LIMITED TO INLETS, PIPES, CULVERTS, CHANNELS, DITCHES, HYDRAULIC STRUCTURES, RIPRAP, DETENTION BASINS, FOREBAYS, MICROPOOLS AND WATER QUALITY FACILITIES (COLLECTIVELY, THE "FACILITIES"). IN THE EVENT THE PINERY COMMERCIAL METROPOLITAN DISTRICT NO. 2, ITS SUCCESSORS, AND ASSIGNS ("SYSTEM OWNER") FAILS TO SATISFACTORILY MAINTAIN SAID FACILITIES, A BLANKET ACCESS EASEMENT OVER THE SUBDIVISION IS ALSO GRANTED TO DOUGLAS COUNTY, BUT ONLY FOR THE PURPOSE OF ACCESSING THE FACILITIES IN THE EVENT THAT THE DRAINAGE EASEMENTS DO NOT PROVIDE ADEQUATE ACCESS. THE MAINTENANCE AND REPAIR OF THE FACILITIES LOCATED IN THE SUBDIVISION, AS SHOWN ON THE CONSTRUCTION PLANS ACCEPTED BY DOUGLAS COUNTY OR ON THE PLAT FOR THE SUBDIVISION, SHALL BE THE RESPONSIBILITY OF THE SYSTEM OWNER IN THE EVENT SUCH MAINTENANCE AND REPAIR ARE NOT PERFORMED BY THE SYSTEM OWNER TO THE SATISFACTION OF DOUGLAS COUNTY, THEN DOUGLAS COUNTY SHALL HAVE THE RIGHT, BUT NOT THE OBLIGATION TO ENTER SAID SUBDIVISION AFTER A TEN (10) DAY PRIOR WRITTEN NOTICE TO THE SYSTEM OWNER. UNLESS THERE IS AN EMERGENCY, IN WHICH CASE DOUGLAS COUNTY SHALL GIVE NOTICE AS SOON AS PRACTICABLE, TO PERFORM ALL NECESSARY WORK, THE COST OF WHICH SHALL BE PAID BY THE SYSTEM OWNER UPON BILLING. IN THE EVENT THE SYSTEM OWNER FAILS TO REIMBURSE DOUGLAS COUNTY WITHIN THIRTY (30) DAYS AFTER SUBMISSION OF THE BILL FOR THE COSTS INCURRED, DOUGLAS COUNTY SHALL HAVE THE RIGHT TO ENFORCE SUCH OBLIGATION BY APPROPRIATE LEGAL ACTION. IT IS THE SYSTEM OWNER'S RESPONSIBILITY TO CONSTRUCT, MAINTAIN, AND REPAIR THE FACILITIES IN A MANNER CONSISTENT WITH ALL APPLICABLE PLANS APPROVED OR ACCEPTED BY DOUGLAS COUNTY.
9. PERMANENT STRUCTURES, IMPROVEMENTS, OBJECTS, BUILDINGS, WELLS, WATER METERS AND OTHER OBJECTS THAT MAY INTERFERE WITH THE UTILITY FACILITIES OR USE THEREOF (INTERFERING OBJECTS) SHALL NOT BE PERMITTED WITHIN SAID UTILITY EASEMENTS AND THE UTILITY PROVIDERS, AS GRANTEES, MAY REMOVE ANY INTERFERING OBJECTS AT NO COST TO SUCH GRANTEES, INCLUDING, WITHOUT LIMITATION, VEGETATION. PUBLIC SERVICE COMPANY OF COLORADO (PSCO) AND ITS SUCCESSORS RESERVE THE RIGHT TO REQUIRE ADDITIONAL EASEMENTS AND TO REQUIRE THE PROPERTY OWNER TO GRANT PSCO AN EASEMENT ON ITS STANDARD FORM.
10. A TEMPORARY ACCESS EASEMENT IS GRANTED TO DOUGLAS COUNTY AT THE NORTH END OF NORTH PINERY PARKWAY FOR TEMPORARY USE UNTIL FUTURE CONNECTION TO THE NORTH IS ESTABLISHED.
11. THE SANITARY EASEMENT LABELED AS "PCMD" SHALL BE DEDICATED TO THE PINERY COMMERCIAL METROPOLITAN DISTRICT NO. 2 FOR A SANITARY FORCE MAIN.

ADDITIONAL TRACT AND EASEMENTS NOTES:

1. TRACT A, AS SHOWN HEREON IS DEDICATED TO THE PINERY COMMERCIAL METROPOLITAN DISTRICT NO. 2 FOR OPEN SPACE AND DRAINAGE PURPOSES.
2. TRACT B, AS SHOWN HEREON IS DEDICATED TO THE PINERY COMMERCIAL METROPOLITAN DISTRICT NO. 2 FOR OPEN SPACE AND DRAINAGE PURPOSES.
3. TRACT C, AS SHOWN HEREON IS DEDICATED TO THE PINERY COMMERCIAL METROPOLITAN DISTRICT NO. 2 FOR OPEN SPACE AND DRAINAGE PURPOSES.
4. TRACT D, AS SHOWN HEREON SHALL BE OWNED AND MAINTAINED BY THE PINERY COMMERCIAL METROPOLITAN DISTRICT NO. 2, ITS SUCCESSORS AND ASSIGNS, FOR THE REGIONAL TRANSPORTATION DISTRICT (RTD) FACILITY, AND SHALL BE DEDICATED TO RTD WITHIN 30 DAYS OF REQUEST FOR RTD'S OWNERSHIP AND MAINTENANCE.
5. TRACT E, AS SHOWN HEREON IS DEDICATED TO THE PINERY COMMERCIAL METROPOLITAN DISTRICT NO. 2 FOR OPEN SPACE AND DRAINAGE PURPOSES.
6. TRACT F, AS SHOWN HEREON IS DEDICATED TO DOUGLAS COUNTY FOR FUTURE IMPROVEMENTS TO STATE HIGHWAY 83, RIGHT-OF-WAY, ACCESS, AND UTILITY PURPOSES.
7. TRACT G, AS SHOWN HEREON IS DEDICATED TO THE PINERY COMMERCIAL METROPOLITAN DISTRICT NO. 2 FOR SANITATION LIFT STATION, BUILDING, OPERATION, AND MAINTENANCE PURPOSES.
8. THE 20' LANDSCAPE EASEMENTS SHOWN HEREON SHALL BE OWNED AND MAINTAINED BY THE PINERY COMMERCIAL METRO DISTRICTS #1 AND #2, ITS SUCCESSORS AND ASSIGNS

SURVEYOR'S CERTIFICATE

I, MICHAEL J. NOFFSINGER, A DULY REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF COLORADO, DO HEREBY CERTIFY THAT THIS PLAT TRULY AND CORRECTLY REPRESENTS THE RESULTS OF A SURVEY MADE ON APRIL 28, 2021, BY ME OR UNDER MY DIRECT SUPERVISION AND THAT ALL MONUMENTS EXIST AS SHOWN HEREON; THAT MATHEMATICAL CLOSURE ERRORS ARE LESS THAN 1:50,000 (SECOND ORDER); AND THAT SAID PLAT HAS BEEN PREPARED IN FULL COMPLIANCE WITH ALL APPLICABLE LAWS OF THE STATE OF COLORADO DEALING WITH MONUMENTS, SUBDIVISIONS OR SURVEYING OF LAND, ALL SURVEYING REGULATORY RULES, REQUIREMENTS, AND STANDARDS OF PRACTICE, AND ALL APPLICABLE PROVISIONS OF THE DOUGLAS COUNTY SUBDIVISION RESOLUTION. THIS CERTIFICATION IS BASED ON MY KNOWLEDGE, INFORMATION AND BELIEF AND IS NOT A GUARANTY OR WARRANTY, EITHER EXPRESSED OR IMPLIED.

I ATTEST THE ABOVE ON THIS _____ DAY OF _____, 20__

FOR REVIEW

MICHAEL J. NOFFSINGER, LICENSED PROFESSIONAL LAND SURVEYOR COLORADO P.L.S. NO. 38367
FOR AND ON BEHALF OF AZTEC CONSULTANTS, INC.

NOTICE: ACCORDING TO COLORADO LAW, YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF THE CERTIFICATION SHOWN HEREON.

NOTICE: PER THE STATE OF COLORADO BOARD OF LICENSURE FOR ARCHITECTS, PROFESSIONAL ENGINEERS, AND PROFESSIONAL LAND SURVEYORS RULE 1.6.B.2 THE WORD "CERTIFY" AS USED HEREON MEANS AN EXPRESSION OF PROFESSIONAL OPINION AND DOES NOT CONSTITUTE A WARRANTY OR GUARANTEE, EXPRESSED OR IMPLIED. THE SURVEY REPRESENTED HEREON HAS BEEN PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION IN ACCORDANCE WITH APPLICABLE STANDARDS OF PRACTICE AND IS BASED UPON MY KNOWLEDGE, INFORMATION AND BELIEF.

CLERK AND RECORDERS CERTIFICATE

STATE OF COLORADO)
COUNTY OF DOUGLAS)

I HEREBY CERTIFY THAT THIS PLAT WAS FILED IN MY OFFICE ON THIS __ DAY OF _____ 20__,

A.D., AT _____ A.M./P.M. AND WAS RECORDED AT RECEPTION NO. _____

_____
DOUGLAS COUNTY CLERK AND RECORDER

AZTEC CONSULTANTS, INC.
300 East Mineral Ave., Suite 1
Littleton, Colorado 80122
Phone: (303) 713-1898
Fax: (303) 713-1897
www.aztecconsultants.com

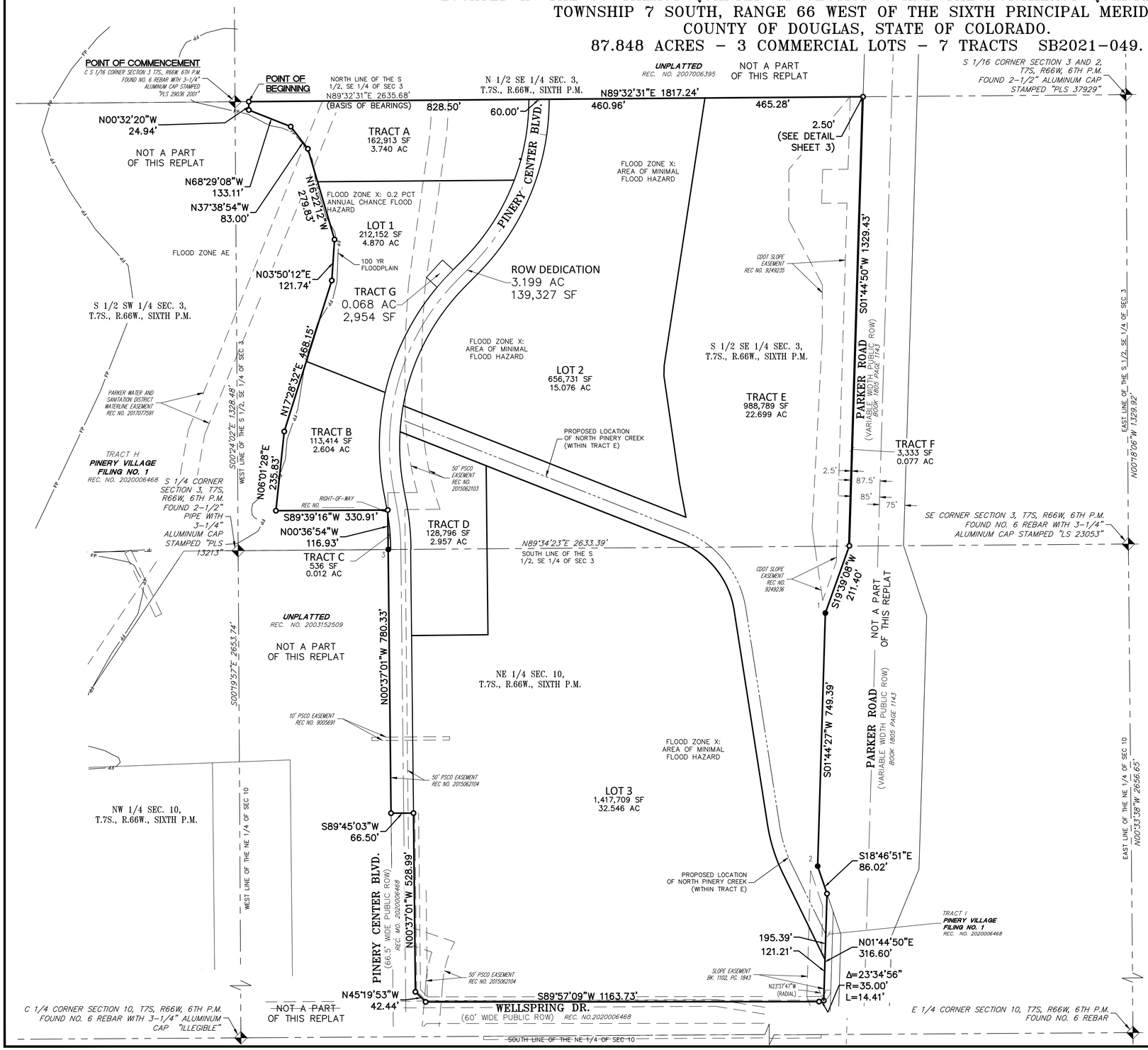
AzTec Proj. No.: 54820-23 Drawn By: RDR

DEVELOPER
PINERY OWNER, LLC
2040 14TH STREET, SUITE 210
BOULDER, CO 80302

DATE OF PREPARATION:	2026-02-17
SCALE:	NA
SHEET 1 OF 4	

PINERY VILLAGE FILING NO. 2

A PORTION OF PLANNING AREAS 41, 42, 43, & OPEN SPACE H-1, AND LOT 2 & TRACT E, PINERY VILLAGE FILING NO. 1
LOCATED IN THE SOUTHEAST QUARTER OF SECTION 3 AND THE NORTHEAST QUARTER OF SECTION 10,
TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
COUNTY OF DOUGLAS, STATE OF COLORADO.
87.848 ACRES - 3 COMMERCIAL LOTS - 7 TRACTS SB2021-049.



MONUMENT SYMBOL LEGEND

- ○ SET NO. 5 X 18" REBAR WITH 1-1/4" ORANGE PLASTIC CAP STAMPED "AZTEC LS 38367"
- 1 ● FOUND 4"X4" CONCRETE WITH NO. 5
- 2 ● FOUND 5" DIAMETER CONCRETE WITH 3" BRASS CAP STAMPED "CDOT ROW"
- 3 ● FOUND NO. 5 REBAR WITH 1-1/4" YELLOW PLASTIC CAP STAMPED "LS5112"
- (ROW) RIGHT-OF-WAY
- FP LIMITS OF FLOOD PLAIN

LINETYPE LEGEND

- SECTION LINES
- SUBJECT PARCEL (BOUNDARY)
- SUBJECT PARCEL (LOT LINE)
- ADJOINING PROPERTY BOUNDARIES
- PROPOSED CENTERLINE OF NORTH PINERY CREEK. (ALSO SEE LABEL)
- PROPOSED EASEMENT (SEE LABEL FOR TYPE & FACILITY)
- EXISTING EASEMENT (SEE LABEL FOR TYPE, FACILITY, & RECEPTION NUMBER)
- FP FLOODPLAIN

N

0' 75' 150' 300'
SCALE: 1" = 150'

FOR REVIEW

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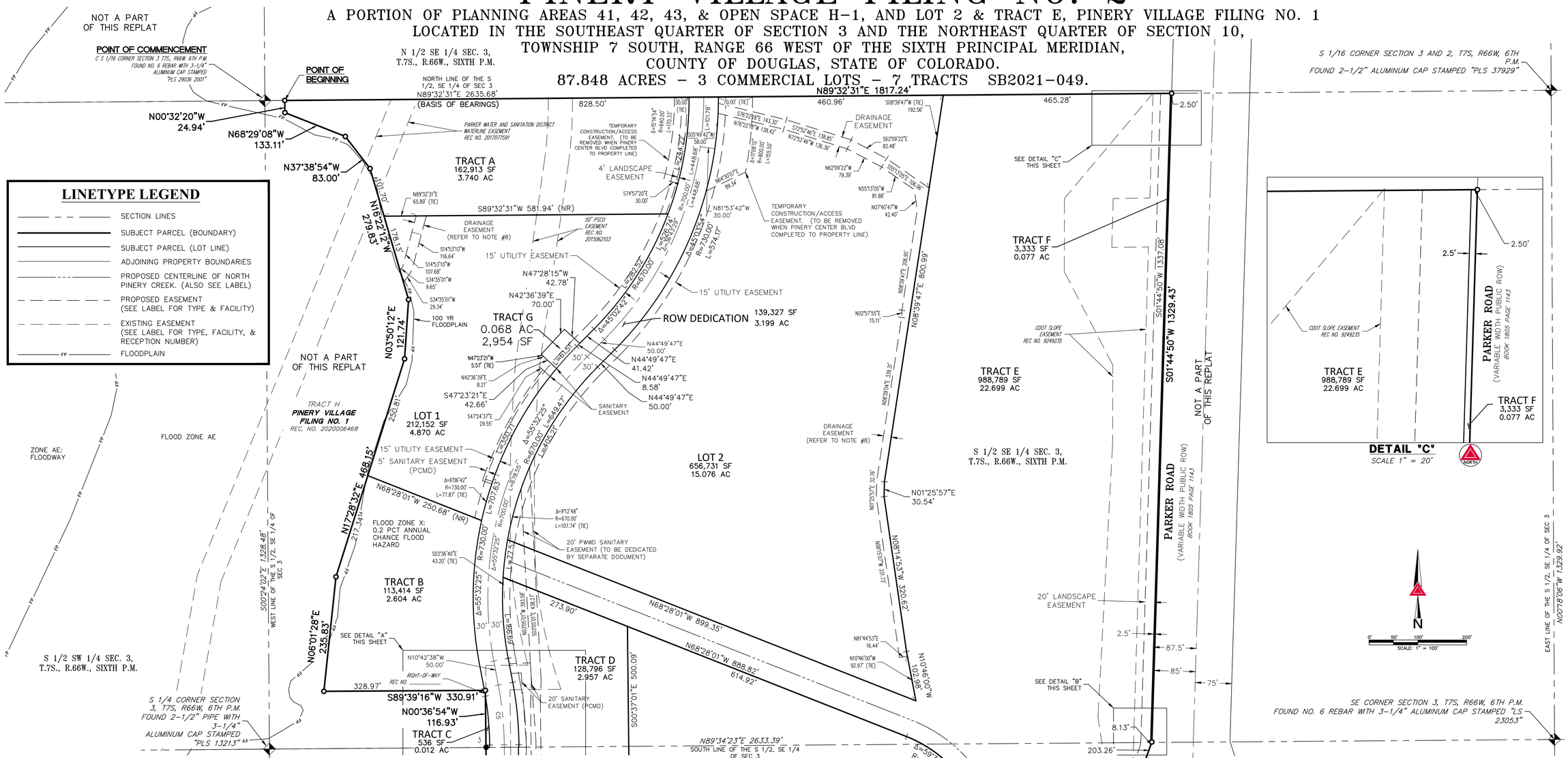
AzTec Proj. No.: 54820-23 Drawn By: RDR

DEVELOPER
PINERY OWNER, LLC
2040 14TH STREET, SUITE 210
BOULDER, CO 80302

DATE OF PREPARATION:	2026-02-17
SCALE:	1"=150'
SHEET 2 OF 4	

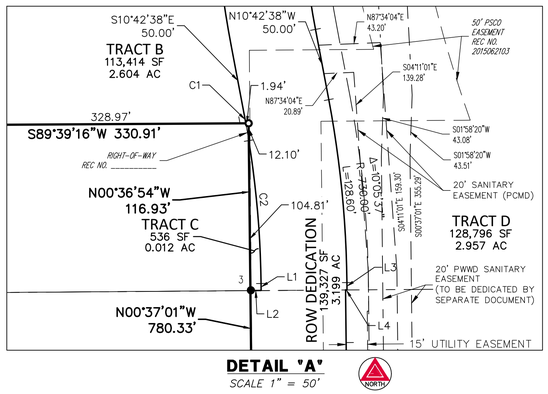
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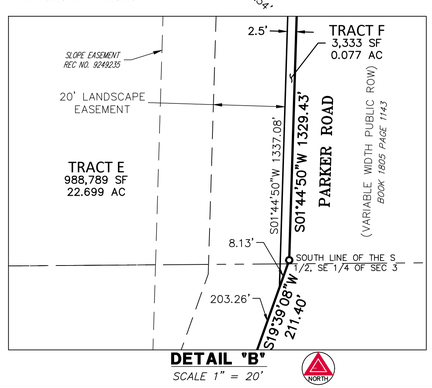


DETAIL "A"
SCALE 1" = 50'

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(ROW) RIGHT-OF-WAY
U.E. UTILITY EASEMENT
PWWD PINERY WATER & WASTE WATER DISTRICT
—"— LIMITS OF FLOOD PLAIN
(NR) NON RADIAL
CDOT COLORADO DEPT. OF TRANSPORTATION



DETAIL "B"
SCALE 1" = 20'

CURVE TABLE			
CURVE	DELTA	RADIUS	LENGTH
C1	0°27'56"	670.00'	5.44'
C2	8°34'46"	670.00'	100.33'
C3	1°43'29"	666.00'	20.05'
C4	5°16'14"	666.00'	61.27'
C5	10°05'37"	700.00'	123.32'

LINE TABLE		
LINE	BEARING	LENGTH
L1	S00°37'01"E	4.88'
L2	N89°34'30"E	7.50'
L3	N00°37'01"W	5.08'
L4	N89°34'30"E	1.00'
L9	N33°28'57"E	20.80'

FOR REVIEW

FOR AND ON BEHALF OF AZTEC CONSULTANTS, INC

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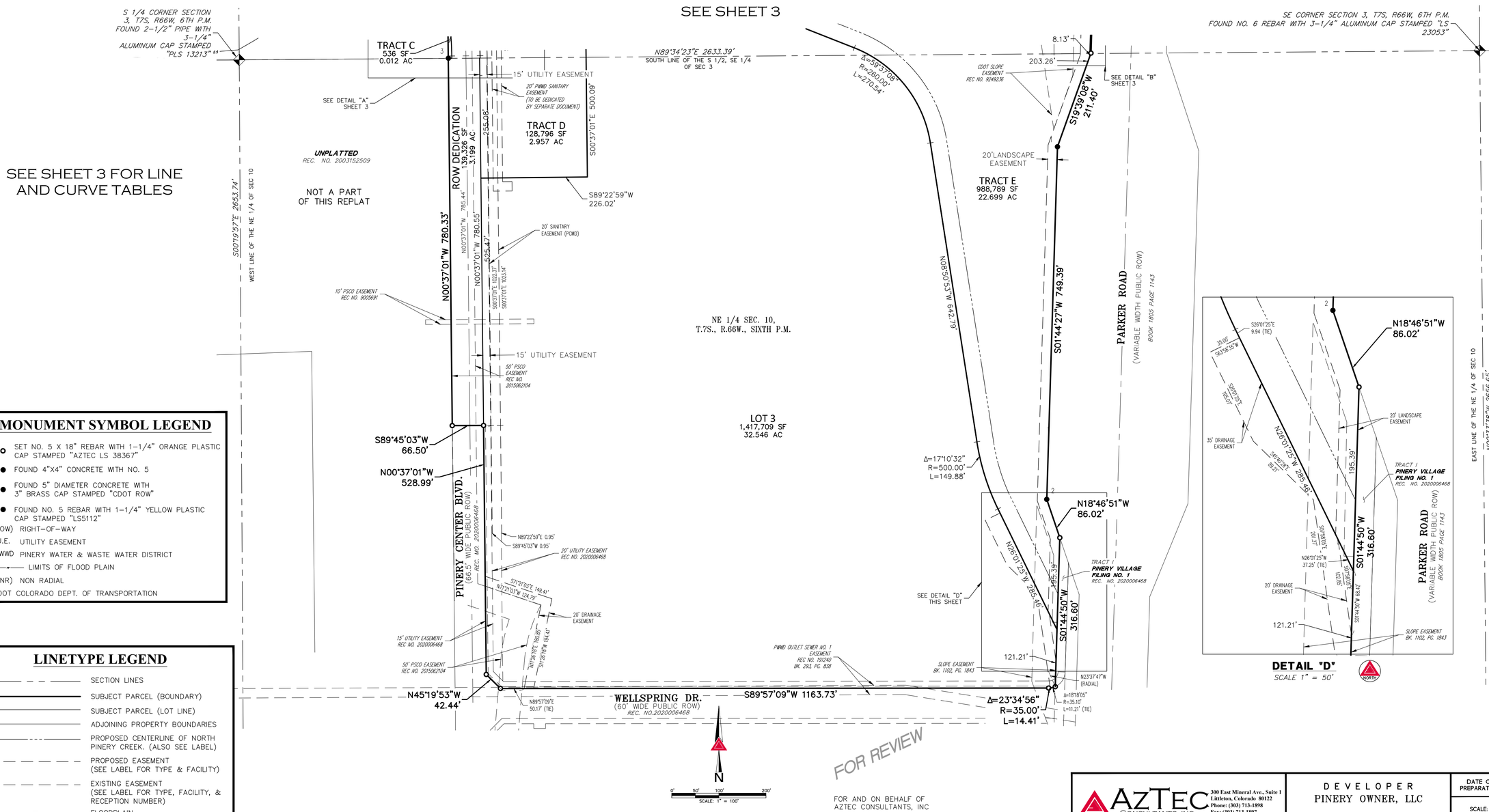
DEVELOPER
PINERY OWNER, LLC
2040 14TH STREET, SUITE 210
BOULDER, CO 80302

DATE OF PREPARATION:	2026-02-17
SCALE:	1"=100'

SHEET 3 OF 4

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AzTec Proj. No.: 54820-23 Drawn By: RDR

DEVELOPER
PINERY OWNER, LLC
2040 14TH STREET, SUITE 210
BOULDER, CO 80302

DATE OF PREPARATION:	2026-02-17
SCALE:	1"=100'
SHEET 4 OF 4	

MEETING DATE: April 14, 2026

STAFF PERSON RESPONSIBLE: Matthew Dziubanski, Chief Building Official and Tim Pendleton, Deputy Chief Building Official

DESCRIPTION: Resolution to Amend the Douglas County Building Codes by Adopting the 2024 International Codes, the 2026 National Electrical Code, the Colorado Model Electric Ready and Solar Ready Code, with Amendments, and the Douglas County Wildfire Resiliency Code.

SUMMARY: This Resolution amends previously adopted Resolution No. R-023-067 to update the County's Building Codes to the 2024 editions of the International Codes and incorporate related state-mandated requirements. The updates align Douglas County with current construction standards, neighboring jurisdictions, and maintain our Insurance Services Office rating while continuing to support safe building practices and minimizing economic impacts to the development community.

RECOMMENDED ACTION: Approval of Resolution

REVIEW:

Kristina Mann	Approve	3/9/2026
Jeff Garcia	Approve	3/13/2026
Christie Guthrie	Approve	3/13/2026
Doug DeBord	Approve	3/19/2026

ATTACHMENTS:

Cover Page
BOCC Staff Report Building Code- 2026
Final- Amendments 2024 Code Adoption- Attachmet A and B
Resolution - Adoption of 2024 I Codes and State Codes MC & MD edits
BOCC Staff Report Addendum- 2026
CAHB CWRC Code Recommendations
HBA Support Letter

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Final- Amendments 2024 Code Adoption- Attachmet A and B
Resolution - Adoption of 2024 I Codes and State Codes MC & MD edits

DOUGLAS COUNTY
COLORADO

2024 Building Code Adoption with Amendments Staff Report

DATE: MARCH 6, 2026

TO: DOUGLAS COUNTY BOARD OF COUNTY COMMISSIONERS

FROM: MATTHEW DZIUBANSKI, CHIEF BUILDING OFFICIAL
TIM PENDLETON, DEPUTY CHIEF BUILDING OFFICIAL

SUBJECT: ADOPTION OF THE 2024 INTERNATIONAL BUILDING CODES, 2026 NATIONAL ELECTRICAL CODE, AND COLORADO MODEL ELECTRIC READY AND SOLAR READY CODE WITH AMENDMENTS ALONG WITH THE DOUGLAS COUNTY WILDFIRE RESILIENCY CODE.

PLANNING COMMISSION HEARING:	**March 02, 2026 @ 6:00 PM**
BOARD OF COUNTY COMMISSIONERS HEARING:	**March 24, 2026 @ 2:30 PM**

I. EXECUTIVE SUMMARY

The Building Division is proposing an update to the County's adopted building codes to reflect the most current editions of the International Codes and applicable state-mandated requirements. Douglas County is currently enforcing the 2021 editions of the International Codes, the 2023 National Electrical Code, and the 2018 International Energy Conservation Code. To maintain consistency with industry standards, preserve the County's Insurance Services Office (ISO) rating, and align with neighboring jurisdictions, the Building Division is proposing adoption of the 2024 editions of the International Building Code, International Residential Code, International Plumbing Code, International Mechanical Code, International Fuel Gas Code, International Swimming Pool and Spa Code, and International Energy Conservation Code, (collectively the "2024 International Codes"), along with the 2026 National Electrical Code, with amendments.

In addition, the County is required to adopt the Colorado Model Electric Ready and Solar Ready Code and a Wildfire Resiliency Code pursuant to state legislation. The Wildfire Resiliency Code will be applicable to areas of unincorporated Douglas County that are outside the boundaries of a fire protection district.

These codes and amendments maintain consistency with other local regulations and support the County's goal to improve the quality and safety of the built environment while minimizing economic impact on builders, costs that are ultimately shared by homeowners and building owners.

II. REQUEST

Approval of a Resolution to amend the current Douglas County Building Codes by adopting the 2024 International Codes and the 2026 National Electrical Code, with amendments, along with the Colorado Model Electric Ready and Solar Ready Code, with amendments, and the Douglas County Wildfire Resiliency Code.

III. PUBLIC NOTICE

Notice of the public hearing before the Board of County Commissioners was published in the Douglas County News-Press in accordance with statutory requirements.

IV. PLANNING COMMISSION

On March 2, 2026, the Planning Commission considered this item at its meeting. No public comments were received. Following discussion, the Planning Commission voted 7–0 to recommend approval of the proposed code adoption, with modifications to the definitions of "Additions" and "Major Renovations" contained in the Colorado Model Electric Ready and Solar Ready Code. The recommended modifications increase the threshold for Additions from 500 square feet to more than 50 percent of the building's gross floor area and increase the threshold for Major Renovations from 50 percent to more than 80 percent of the building's gross floor area.

V. STAFF ASSESSMENT

The adoption of the 2024 International Codes and 2026 National Electrical Code along with the Colorado Model Electric Ready and Solar Ready Code and the Douglas County Wildfire Resiliency Code will help maintain consistency throughout Douglas County, coinciding with recent adoptions by other local jurisdictions. The newer codes provide a safer built environment for both residential and commercial structures, and accommodate new materials, design trends and construction methods. The timely adoption of building codes is also a direct positive factor in the community's rating by the ISO.

ATTACHMENTS

- Attachment A – Amendments to the 2024 IBC, IRC, IPC, IMC, IFGC, ISPSC, and IECC; 2026 NEC; and Exhibits A through F
- Attachment B - Douglas Couty Wildfire Resiliency Code

ATTACHEMENT A

CODE AMENDMENTS
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- Amendments to the 2024 International Building Code 19
- Amendments to the 2024 International Plumbing Code 21
- Amendments to the 2024 International Mechanical Code 22
- Amendments to the 2024 International Fuel Gas Code 22
- Amendments to the 2024 International Swimming Pool and Spa Code 24
- Amendments to the 2024 International Energy Conservation Code 24
- Amendments to the 2026 National Electrical Code 25

Exhibit B

- Wildfire Mitigation Standards 26

Exhibit C

- Standard for Water Supplies for Rural Firefighting 40

Exhibit D

- Installation Standard IS-22-98 - Installation standards for potable water storage tanks and cisterns for domestic use 49

Exhibit E

- 2024 IBC Appendix Q Solar Photovoltaic Power Systems Access, Pathways and Spacing Requirements 53

Exhibit F

- Colorado Model Electric Ready and Solar Ready Code 58

Exhibit A

AMENDMENTS COMMON TO ALL ADOPTED INTERNATIONAL CODES

Any references made to the below listed codes within the adopted codes are not valid in Douglas County except as noted above.

International Private Sewage Disposal Code	**Not adopted**
International Property Maintenance Code	**Not adopted**
ICC Electrical Code	**Not adopted**
International Zoning Code	**Not adopted**
International Wildland-Urban Interface Code	**Not adopted**
International Existing Building Code	**Not adopted**

The International Building Code, International Residential Code, International Plumbing Code, International Mechanical Code, International Fuel Gas Code, International Energy Conservation Code, and the International Swimming Pool and Spa Code are published by the International Code Council, Inc., 4051 W. Flossmoor Road, Country Club Hills, IL 60478.

10.0 FEES **Add new section and subsections**

10.1 Payment of fees
A permit shall not be valid until the fees, prescribed by law, have been paid, nor shall an amendment to a permit be issued until the additional fee, if any, has been paid.

10.1.1 Related fees
The payment of the fee for the construction, alteration, removal, or demolition for work done in connection to, or concurrently with the work authorized by a building permit, shall not relieve the applicant or holder of the permit from the payment of other fees that are prescribed by law.

10.2 Valuation of work
The determination of value or valuation shall be established by the Building Official utilizing building valuation data printed in the Building Safety Journal, published by the International Code Council, as a guide and using a modifier of one (1), or the applicant shall provide an estimated project valuation at the time of application. Permit valuations shall include the total value of work, including materials and labor, for which the permit is being issued, such as electrical, gas, mechanical, plumbing equipment, and permanent systems. If, in the opinion of the Building Official, the valuation is underestimated on the application, the permit shall be denied unless the applicant can provide detailed estimates to meet the approval of the Building Official. Final building permit valuation shall be set by the Building Official.

10.3 Schedule of permit fees
On new or altered structures, gas, mechanical, plumbing or roofing requiring a permit, a fee for each permit shall be paid in accordance with Table 10.3 (1997 edition of the Uniform Building Code, Table 1-A).

10.3.1 Plan review fee
The plan review fee shall be 65% of the permit fee. In cases of stock plans, the plan review fee shall be 10% of the permit fee.

10.3.2 Electrical permit fee
Fees for electrical only permits shall be assessed per Table 10.3.2

Table 10.3.2
ELECTRICAL PERMIT FEE SCHEDULE

If an electrical permit is not obtained prior to installation, the inspection fee may be twice the amount as prescribed by Colorado Revised Statute §12-115-121.3

Section A. RESIDENTIAL: In unincorporated Douglas County a single Residential Building Permit Fee covers all building, electrical, mechanical, and plumbing work included on the approved plans.

Section B. ALL OTHER FEES including some residential installations that are not based on square footage (not in a living area, i.e., garage, shop, and photovoltaic, etc.). Fees in this section are calculated from the total cost to customer, including electrical materials, components, and labor – whether provided by the contractor or the property owner. Use this formula for a service connection, a temporary meter, and all commercial installations. Such fees shall be computed as follows:

Valuation of Installation: (based on cost to customer of labor, materials, and components):

FEE

1) Not more than $2,000.....**$ 57**
2) $2,001 and above..... **$ 5 per thousand OR FRACTION thereof PLUS $ 57**

Example: The cost of the installation is $8,150 (round up to $9,000)
The base fee is calculated from section (2) above: 9 x $5= $45 *PLUS $*57 =$102

The total fee is: $102

C. Reinspection fee for all of the above..... **$ 47**
D. Add Fee for Extra inspections..... **$ 50**
E. Add Fee for Residential Constr. Meter (for work under Sect. A) … **$ 45**

10.3.3 Wildfire mitigation assessment fee
A fee of $120.00 shall be assessed to new structures located in wildfire hazard areas as determined by the Wildfire Hazard Overlay Map that require an on-site assessment and final inspection.

10.3.4 Driveway permit fee *(Detached single-family residences only)*A permit fee of $40.00 shall be required for vehicular access to residential dwellings, or buildings accessory thereto, in rural areas generally not served by combination curb, gutter, and sidewalk.

10.3.5 Drainage, Erosion, and Sediment Control (DESC) permit fee
(Detached single-family residents only)
A DESC permit fee is required on all new single-family residential construction and new construction of accessory structures (e.g., additions, barns, arenas, detached garages, etc.) on existing single-family home sites. Fees for each DESC permit shall be determined in accordance with Table 10.3.5.

10.3.5.1 DESC plan review fee *(Detached single-family residences only)*
The DESC plan review fee shall be 65% of the DESC permit fee.

Table 10.3.5
DESC Permit Fee Schedule

Project Valuation	Permit Fee
$0 to $25,000.00	$25.00
$25,001.00 to $50,000.00	$35.00
$50,001.00 to $100,000.00	$50.00
$100,001.00 to $900,000.00	$50.00 for the first $100,000.00 plus $32.00 for each additional $100,000.00 of the valuation, or fraction thereof
$900,001.00 and up	$338.00

10.3.6 Zoning fee

10.3.6.1 One and two-family dwellings or townhouses as defined in the IRC
A review fee of $50.00 is required per single family/townhouse as each unit is permitted individually. Additionally, a fee of $30.00 will be assessed for permits for accessory structures.

10.3.6.2 Commercial and multi-family buildings as defined in the IBC
A review fee of $50.00 is required for each commercial structure as each unit is permitted individually. Apartment and condominium buildings will be assessed a $50.00 fee per building. Additionally, a fee of $30.00 will be assessed for permits for accessory structures.

10.3.7 Re-inspection fee
When an inspection has been requested for work that has not been completed, or for identified deviancies that have not been corrected, a re-inspection fee may be assessed.

Re-inspection fees may be assessed when: the inspection record card is not posted or otherwise available on the work site, the approved plans are not readily available to the inspector, for failure to provide access on the date for which the inspection is requested, or for deviating from approved plans.

When re-inspection fees have been assessed, no additional inspections will be performed until the required fees have been paid. Re-inspection fees shall be in accordance with Table 10.3.

10.3.8 Investigation fee
Investigation fees shall be determined in accordance with Table 10.3.

10.3.8.1 Work commencing before permit issuance
Investigation fees may be assessed for work regulated by this Resolution that commences prior to a valid permit being issued. An investigation fee may amount to two times the calculated permit fee.

10.3.9 Elevator/escalator inspection fee
A conveyance inspection fee in accordance with the Douglas County Administrative Fee Schedule shall be paid for each separate elevator/escalator installed in the county. These fees shall cover annual safety inspections and witness inspections as required by the State. Notice of the fee shall be given to each conveyance owner by the Building Division for the specific inspection service provided.

10.3.10 Use Tax A Use Tax on construction and building materials shall be collected at time of permit issuance for most types of permits, in accordance with Resolution R-994-147 and approval by registered electors at general election, and as modified by subsequent statutorily authorized public approval processes.

10.4 Refunds
The Building Official may authorize the refunding of fees for the following:

1. The full amount of any fee paid hereunder which was erroneously paid or collected.

2. Not more than 80% of the permit fee paid when no work has been done under a permit issued in accordance with this code.

3. Not more than 80% of the plan review fee paid when an application for a permit for which a plan review fee has been paid is withdrawn or canceled before any plan review effort has been expended.

The Building Official shall not authorize a refund of any fee paid, except upon written application filed by the original permittee, not later than 180 days after the date of fee payment.

Table 10.3

(1997 Uniform Building Code, Table 1-A)

Total Valuation	Building Permit Fee
$1.00 to $500.00	$23.50
$501.00 to $2,000.00	$23.50 for the first $500.00 plus $3.05 for each additional $100.00, or fraction thereof, to and including $2,000.00
$2,001.00 to $25,000.00	$69.25 for the first $2,000.00 plus $14.00 for each additional $1,000.00, or fraction thereof, to and including $25,000.00
$25,001.00 to $50,000.00	$391.25 for the first $25,000.00 plus $10.10 for each additional $1,000.00, or fraction thereof, to and including $50,000.00
$50,001.00 to $100,000.00	$643.75 for the first $50,000.00 plus $7.00 for each additional $1,000.00, or fraction thereof, to and including $100,000.00
$100,001.00 to $500,000.00	$993.75 for the first $100,000.00 plus $5.60 for each additional $1,000.00, or fraction thereof, to and including $500,000.00
$500,001.00 to $1,000,000.00	$3,233.75 for the first $500,000.00 plus $4.75 for each additional $1,000.00, or fraction thereof, to and including $1,000,000.00
$1,000,001.00 and up	$5,608.75 for the first $1,000,000.00 plus $3.65 for each additional $1,000.00, or fraction thereof

Other inspections and fees:

1. Inspections outside normal business hours……..... $47.00 per hour [A]
   (minimum charge of two hours)
2. Re-inspection fees…… $47.00 per hour [A]
   (minimum charge of one hour)
3. Inspections for which no fee is specifically indicated……..... $47.00 per hour [A]
   (minimum charge of one-half hour)
4. Additional plan review required by changes, additions or revisions to plans……... $47.00 per hour [A]
   (minimum charge of one-half hour)
5. For use of outside consultants for plan checking and inspections, or both…… Actual costs [B]
6. Investigation fees……..... $47.00 per hour [A]
   (minimum charge of two hours)

A. $47.00 per hour fee or the total hourly cost to the jurisdiction will be charged, whichever is greatest. The cost shall include supervision, overhead, equipment, hourly wages, and fringe benefits of the employees involved.

B. Actual costs include administrative and overhead costs.

20.0 CONTRACTOR REGISTRATION Add new section and subsections

20.1 General

No contractor shall hire, employ, contract with, or engage another person to perform any construction work unless the person so hired, employed, contracted with, or engaged to perform construction work is registered with Douglas County Building Division.

Exceptions:

1. A homeowner is not required to register and is exempt from this Section.
2. Construction trades other than mechanical, electrical, and plumbing performing work under a registered general contractor are not required to be registered.

A contractor shall be responsible for all work included under the scope of the contractors' registration regardless of whether such work is done by the contractor directly or by a sub-contractor which is exempt pursuant to this Section.

It shall be the duty of any applicant for electrical or plumbing registration to furnish copies of the State contractor's license, master's license and to send updates as new State licenses are issued, or if licensed tradespersons are replaced. No permits for electrical wiring or plumbing work may be issued to any applicant unless such State license is properly verified and registered.

Permits will only be issued to a registered contractor or their authorized representative.

20.2 Definitions

CONTRACTOR

A contractor is any person, firm, co-partnership, corporation, association, or other organization, or any combination thereof, who builds, constructs, alters, adds to, or repairs any building or structure either on its own property, or who supervises or advises on any such activity, or hires and pays subcontractors.

HOMEOWNER

The owner of the property who elects to act as an owner-builder for their residential dwelling or accessory structure, as defined in the International Residential Code (IRC). A homeowner may secure a permit on only one residential dwelling in a twelve (12) month period with the intent of occupying the structure upon completion. Any person who builds two or more residences in unincorporated Douglas County in any twelve (12) month period shall be deemed to be a contractor, who must then comply with Section 20.0.

20.3 Class of registration

It shall be unlawful to perform work which is not authorized under the scope or limits of work for which such registration was issued. Registration classifications are as follows:

20.3.1 Building contractor – CLASS "A"

This registration shall entitle the holder to contract for the construction, alteration, tenant finish, or repair of any type or size of structure permitted by the International Building Code (IBC) or International Residential Code (IRC).

20.3.2 Building contractor – CLASS "B"
This registration shall entitle the holder to contract for the construction, alteration, or repair of multi-family/townhouses with three or more units per structure as permitted by the IBC or IRC.

20.3.3 Building contractor – CLASS "C"
This registration shall entitle the holder to contract for the construction, alteration, or repair of single-family homes and duplexes as permitted by the IRC.

20.3.4 Building contractor – CLASS "D"
This registration shall entitle the holder to contract for the construction, alteration and repair of, but not limited to, garages, barns, basement finishes, alterations, decks, remodels, and low voltage wiring as permitted by the IRC.

20.3.5 Mechanical contractor – CLASS "MA"
This registration shall entitle the holder to perform work on heating, ventilation, air conditioning, and refrigerating systems.

20.3.6 Electrical contractor
Any person, firm, co-partnership, corporation, association, or combination thereof that undertakes or offers to undertake for another the planning, layout, supervision, installation or repair of wiring apparatus and equipment for electrical light, heat, and power. Pursuant to C.R.S. 12-23-105, electrical contractors are licensed by the State of Colorado and are only required to register with Douglas County. Electrical contractors are exempt from the fee requirements of this Section.

20.3.7 Plumbing contractor
Any person, firm, co-partnership, corporation, association, or combination thereof that undertakes or offers to undertake for another the planning, layout, supervision, installation, modification, or repair of plumbing systems. Pursuant to C.R.S. 12-58-105, plumbing contractors are licensed by the State of Colorado and as such are only required to register with Douglas County. Plumbing contractors are exempt from the fee requirements of this Section.

20.3.8 Roofing contractor
This registration shall entitle the holder to contract for the replacement and repairs of existing roofs as permitted by the IBC or IRC.

20.4 Contractor registration fee schedule

Contractor's registration fees shall be as follows:
Class "A" Contractor……..$250.00
Class "B" Contractor……..$200.00
Class "C" Contractor……..$150.00
Class "D" Contractor……..$150.00
Mechanical Contractor……... $150.00
Roofing Contractor…….....$150.00

Electric Contractor……..... Exempt
Plumbing Contractor…….. Exempt

Exception:

Fees for all types of registrations will be waived until further action by the Board of County Commissioners, effective July 1, 2013, per Douglas County Resolution (R-012-068).

20.5 Probationary registration

The Building Official may issue a probationary registration where the Building Official determines that qualifications must be established prior to issuance of a regular registration.

20.6 Expiration of registration and regulations

All registrations shall expire one (1) year from the date of issuance. Registrations with State issue licenses shall expire thirty (30) days after the State license expires, unless otherwise provided. No permits may be obtained, nor may work already under permit be continued, until the registration has been renewed. Applicants for registration renewals shall meet all current requirements for a new registration.

20.7 Insurance requirements

Prior to registration, the contractor shall file with the Building Official a Certificate of Liability insurance and Worker's Compensation insurance. The insurance certificate must be signed by an agent of an insurance company stating that the policy, or policies, required by this Section have been issued to the contractor. The policy, or policies, shall state the name of the company, effective date of such policies, and the expiration date of policy or policies. Each policy of insurance shall contain an endorsement to the effect that the insurance carrier shall notify the Douglas County Building Division of the effective date of a reduction or cancellation of the policy. The cancellation or reduction of insurance below the required amount of coverage shall be cause for automatic suspension of the contractor's registration until coverage is reinstated. All policies shall be kept in effect for the period of the registration.

Single occurrence liability insurance shall have the following minimum coverage amount:

Class "A" Contractor…… $1,000,000.00
Class "B" Contractor…… $1,000,000.00
Class "C" Contractor…… $500,000.00
Class "D" Contractor……..... $300,000.00
Electrical Contractor……. $300,000.00
Plumbing Contractor……. $300,000.00
Mechanical Contractor……. $300,000.00
Roofing Contractor……. $300,000.00

20.8 Registration suspension and revocation

The Building Official may suspend or revoke the registration of any registered contractor for good cause, as described in this Section. Upon suspension or revocation, the Building Official shall provide written notice to the registered contractor by delivery to the business

mailing address provided by the contractor at time of registration. The notice of suspension or revocation shall include information regarding the appeals process for the suspension or revocation, including the right of the contractor to appear before the Board of Appeals and show cause why the registration should not be suspended or revoked. At the hearing before the Board of Appeals, the contractor shall have the right to present their case by oral and documentary evidence, to submit rebuttal evidence, as may be required for a full and true disclosure of the facts.

Suspension or revocation of a contractor's registration shall not be construed to release the contractor from liabilities and obligations of completing his contract. During the period prior to the hearing before the Board of Appeals, the contractor shall not be allowed to submit an application for any other projects.

The Board of Appeals, after review of the evidence presented, shall have the power to suspend, revoke or reinstate a contractor's registration for good cause shown. Good cause includes, but is not limited, to the following:

1. Violating any provisions of the Douglas County Building Code including any codes which are adopted by reference.

2. Failure to comply with any lawful order of the Building Official or any other authorized representative of the Building Division pertaining to the administration of the building code and those codes adopted by reference.

3. Using a contractor's registration to obtain a permit required under this code for any other person, corporation, or legal entity.

4. Failure to reveal any material fact in the application for a contractor's registration or permit, or the supplying of information which is untrue or misleading as to any material fact in the application, for a contractor's registration or permit.

5. Failure to obtain a proper permit for any work for which a permit is required.

The Board of Appeals (BOA) may reinstate a registration for any contractor whose registration has been revoked, provided a majority of the BOA votes in favor of such reinstatement for such reason as the BOA may deem sufficient. In such case where the contractor's registration has been revoked and the contractor is petitioning the BOA for reinstatement, the petitioner shall follow the established policies for requesting such hearing and pay all applicable fees.

30.0 BOARD OF REVIEW **Add new section and subsections**

30.1 General

In order to hear and decide appeals of orders, decisions, or determinations made by the Building Official relative to the application and interpretation of this code, there shall be and is hereby created a Board of Review (BOR). The Building Official shall be an ex-

officio member of, and shall act as secretary to said BOR, but shall have no vote on any matter before the BOR. The BOR shall operate as and perform the duties of the Board of Review, pursuant to Section 30-28-206, C.R.S. the BOR shall be appointed by the Douglas County Board of County Commissioners and any member of the BOR may be removed for cause by the Douglas County Board of County Commissioners. The BOR shall consist of no less than three members nor more than five members. The member's terms shall be of such length and such arrangement that the term of at least one member shall expire each year. Vacancies shall be filled for an unexpired term in the same manner as in the case of original appointments. The Douglas County Board of County Commissioners shall provide for general rules to cover the organization, procedure, and jurisdiction of the BOR. The BOR may adopt supplemental rules of procedure not inconsistent with Article 28, Title 30, C.R.S. or such general rules. The BOR shall render all decisions and finding, in writing, to the appellant. A duplicate copy shall be sent to the Building Official.

30.2 Limitations on authority
Pursuant to Section 30-28-206, C.R.S., the BOR, in appropriate cases and subject to a determination as to the suitability of alternate materials and methods of construction, may make special exceptions to the terms of the Building Code in harmony with its purpose and intent. The BOR shall have no authority to waive requirements of this Code or provide product approvals.

30.3 Qualifications
The BOR shall consist of members who are qualified by experience and training to pass on matters pertaining to building construction and are not employees of the jurisdiction.

30.4 Code amendments
Pursuant to Section 30-28-206(2), C.R.S., the BOR is authorized to formulate suggested amendments to the Douglas County Building Code for consideration by the Douglas County Board of County Commissioners.

30.5 Administration
The Building Official shall take immediate action in accordance with the decision of the BOR.

30.6 Fees
The fee for a hearing before the Board of Review shall be $250.00. The fee is non-refundable.

40.0 NOISE MITIGATION **Add new section and subsections**

40.1 Interior Noise Level
All new structures, and the alteration or repair of existing structures, that are located in the Centennial Airport Review Area (CARA) as defined in Section 19 of the Douglas County Zoning Resolution and as amended, requiring noise mitigation, shall comply with this following.

An acoustical engineer, registered with the State of Colorado, shall certify that construction practices and/or materials of the structure will achieve an interior noise level below DNL 45 dBA. The acoustical professional shall submit documentation of the proposed measures to the Building Official before permitting.

Field testing to show compliance with the following Outdoor-Indoor Transmission Class (OITC) ratings shall be formed in accordance with the current ASTM standard.
OITC ratings of wall, floor, roof, window, and door assemblies shall be a value of 32 or greater.

40.2 Penetrations
All membrane or through penetrations in the construction assemblies for piping, electrical devices, recessed cabinets, bathtubs, soffits, heating, combustion, ventilation, or exhaust ducts shall be sealed, lined, insulated or otherwise treated to maintain the required ratings.

50.0 SITE SANITATION **Add new section and subsections**

50.1 Sanitation facilities required
Every building site during construction, remodeling, or demolition activities, shall be furnished with approved sanitation facilities for workers in accordance with Section 311 of the International Plumbing Code and an appropriate enclosure or other means approved by Douglas County to contain trash and debris.

50.2 Location
Sanitary facilities and approved trash enclosures shall be located within 300 feet of the building site. Sanitary facilities and trash enclosures shall not be located within the public right-of-way. Failure to comply with this section may cause suspension of inspections until compliance is achieved.

AMENDMENTS TO THE 2024 INTERNATIONAL RESIDENTIAL CODE (IRC)

Note: Refer to the section "Amendments common to all adopted International Codes" for more information.

Appendix BD Home Day Care Occupancy **Adopt Appendix**

Wildfire Mitigation Standards **Adopt as an appendix**
Attached hereto, as Exhibit "B"

Water Supply Standard for Rural Firefighting **Adopt as an appendix**
Attached hereto, as Exhibit "C"

Installation Standard IS-22-98 **Adopt as an appendix**
Installation standards for potable water storage tanks and cisterns for domestic use
Attached hereto, as Exhibit "D"

R101.1 Title [NAME OF JURISDICTION] **Replace**
Douglas County Building Division **Insert**

R105.2(5) Work exempt from permit (Building) Delete words "and driveways"

R105.2(11-14) Work exempt from permit (Building) Add new exceptions

11. Manufactured metal shipping containers used as tool and storage sheds with a floor area not larger than 200 square feet and are:
    11.1. Not used for storage of hazardous materials, or
    11.2. Not modified, connected, or stacked on top of each other.

12. Shade structures such as fabric shade sails or fabric covered awnings; and detached, free standing pergolas that do not exceed 200 square feet and are not subject to a uniformly distributed snow load; and detached ornamental garden structures and greenhouses accessory to a dwelling that do not exceed 200 square feet.

13. Replacement windows and doors where no structural modification of the rough opening is required, and the replacement window is of the same operating style as the existing window or a style that provides for an equal or greater window opening area than the existing window. This exemption shall not apply within areas subject to the Douglas County Wildfire Resiliency Code.

14. The replacement or repair of roofing less than one square (100 square feet).

All work exempted by this Section R105.2 must comply with applicable zoning requirements and the regulations of other agencies having authority.

Work exempted from permit under Section R105.2 shall comply with the Douglas County Wildfire Resiliency Code when applicable.

R105.3 Application for permit (8) and (9) Add new subsection requirements

8. Proof of ownership of the property shall be submitted with the building permit application. When access is not from a public road, proof of legal and physical access shall be submitted with the application. If legal access is in question, the Building Official may confer with the County Attorney to determine the legality of the proposed access. If physical access is in question, referral comments may be sought from the Douglas County Department of Public Works and the Fire Protection District serving the property. The Building Official shall then determine whether legal access is available and whether physical access is safe, reasonable, and adequate. If the Building Official determines that the physical access is not safe, reasonable, or adequate, he may recommend whatever improvements would be necessary to provide safe and reasonable access.

9. A soils test of the building site prepared by a professional engineer registered by the State of Colorado shall be submitted with the application for a building permit. A professional engineer registered by the State of Colorado shall design the foundation in accordance with the soils report. Concrete foundations shall comply with ACI 318. When the building site is located in a hillside area, or in the opinion of the Building Official, is located in an area subject to geological hazards or steep slopes, the Building

Official may require an engineering geologist, working within their field of expertise, to submit specific recommendations regarding the building site and the proposed location and design.

R108 Fees **Delete section in its entirety**

R109.1.1 Foundation inspection **Addition to the end of the subsection**

Inspections shall be performed by a Colorado licensed professional engineer or architect that is registered in the State of Colorado. A sealed written report shall be provided to the Building Official of the results for these inspections by a Colorado licensed professional engineer or architect that is registered in the State of Colorado.

R112 Means of Appeals **Delete section in its entirety**

R202 Definitions

Accessory Structure **Amend to read as follows**

Accessory Structure. A structure that is not over two stories in height, the use of which is customarily accessory to and incidental to that of the dwelling(s), or other allowed use, and that is located on the same lot.

Table R301.2(1) Climatic and geographic design criteria **Delete chart and substitute**

TABLE R301.2(1)

Climatic & Geographic Design Criteria

Topo effects	Seismic category	Subject to damage from: Weathering	Frost line depth	Termites	Ice barrier underlay	Flood hazards	Wind-borne debris
Exposure C	B	Severe	36"	Slight to moderate	Yes above 7,000'	per FEMA	No

Manual J Design Criteria

Elevation	Altitude correction factor	Coincident wet bulb	Indoor winter dry bulb temp	Air freezing index	Outdoor winter dry bulb temp	Design temp cooling	Heating temp difference
Varies	Varies	59°	70°	867	-3°	75°	73°
Latitude	**Daily range**	**Indoor summer rel. humidity**	**Indoor winter rel. humidity**	**Indoor summer dry bulb temp**	**Outdoor summer dry bulb temp**	**Mean annual temp**	**Cooling temp difference**
39.5° N	H	30%	50%	75°	90°	48°	15°

TABLE R301.2(2)
Wind and Snow Load Design Criteria

USGS Elevation Ranges (feet)*	Snow load (psf)	Wind Speed
5152-5999	30	115 Ultimate Wind Speed Exposure C
6000-6499	35	
6500-6999	40	
7000-7499	45	130 Ultimate Wind Speed Exposure C
7500-7999	50	
8000-8499	55	
8500-8999	60	
9000-9499	65	
Ground Snow Load = Roof Snow Load	**Reductions for Snow Loads are Not Allowed**	

*At top of foundation

R302.13 Fire protection of floors. **Delete section in its entirety**

R310.1 Emergency escape and rescue openings required **Delete exception (2)**

R309.1 Townhouse automatic fire sprinkler systems **Delete in its entirety and substitute**

An automatic residential fire sprinkler system *may* be installed in townhouses in accordance with Section P2904 or NFPA 13D.

R309.2 One and two-family dwellings automatic fire sprinkler systems **Delete section in its entirety and add**

Owner occupied lodging houses, bed and breakfast with five or fewer guest rooms and 10 or fewer total occupants permitted to be constructed in accordance with the International Residential Code shall be equipped with an automatic residential fire sprinkler system designed and installed in accordance with Section P2904 or NFPA 13D.

R311.2.2 Alterations, repairs and additions **Delete exception 2 and 3**

R311.3 Location **Delete in its entirety and substitute**

Carbon monoxide alarms in dwelling units shall be installed outside each separate sleeping area within 15 feet of each bedroom's entrance. Where a fuel-burning appliance is located within a bedroom or its attached bathroom, a carbon monoxide alarm shall be installed within the bedroom.

R319.4.1 Minimum size **Add exception (2)**

Exception 2. In basements of existing R-3 (one- or two-family dwellings) occupancies, where existing egress window wells are retained, window wells may have a minimum horizontal projection of 24 inches (610mm) and must be the full width of the window. If a ladder is required in the window well, the ladder must be installed such that it does not interfere with or is in front of the operable side of the window.

R401.2 Requirements **Addition to the end of the subsection**

Based on soils reports for lots within the Dipping Bedrock Overlay District, as identified by the Colorado Geological Survey, the Building Official may require additional testing to determine the proper foundation design. Such additional testing may include, but are not limited to, testing for initial water content, initial dry density, grain size distribution, Atterberg Limits (liquid limit and plasticity index), percent swell and test load surcharge, swell pressure, penetration resistance (blow counts), and unconfined compressive strength.

R401.3 Drainage **Delete in its entirety and substitute**

Single-family detached dwelling units and accessory structures thereto, shall comply with the Douglas County Drainage, Erosion and Sediment Control (DESC) manual.

R402.1 Wood foundations **Delete in its entirety**

R403.3 Frost-protected shallow foundations **Delete in its entirety**

R905.7 Wood shingles. **Delete in its entirety**

R905.8 Wood Shakes. **Delete in its entirety**

R908.7 Drip edge flashing for asphalt shingle roof **Add New Subsection**

Drip edge flashing shall be provided at eaves and rake edges of shingle roofs. Adjacent segments of drip edge shall be overlapped a minimum of 2 inches. Drip edges for eaves shall extend a minimum of 1.5 inches below the roof sheathing and extend up the roof deck a minimum of 4 inches. Drip edges for gables shall extend a minimum of .25 inches below the roof sheathing and extend up the roof deck a minimum of 2 inches. Drip edges shall be mechanically fastened to the roof deck at a maximum of 12 inches on center with fasteners as specified in Section R905.2.5. Underlayment shall be installed over the drip edge along eaves and under the drip edge on rakes/gables. Unless specified differently by the shingle manufacturer, shingles are permitted to be flush with the drip edge.

R908.1 General **Addition to the end of the subsection**

Roof drainage shall comply with the requirements of Section R801.3.

R908.4 Roof recover **Addition to exception (2)**

Exception 2. Where the existing roof covering is asphalt shingle, slate, clay, cement, or asbestos-cement tile.

Chapter 11 Energy efficiency **Delete Chapter in its entirety and substitute**

IRC Sections N1101 through N1113 (R505) in Chapter 11 are deleted in their entirety and replaced with a new section N1101 to read as follows:

SECTION 1101
GENERAL REQUIREMENTS

N1101.1 Scope. This chapter regulates the energy efficiency for the design and construction of buildings regulated by this code.

N1101.2 Criteria. Buildings shall be designed and constructed in accordance with the 2024 International Energy Conservation Code (IECC) as amended and adopted by Douglas County. The climate zone for unincorporated Douglas County is established as Zone 5B.

G2406.2(303.3) (3) and (4) Prohibited locations **Delete in their entirety**

G2417.4.1 (406.4.1) Test pressure **Delete section in its entirety and substitute**

Test pressure and duration Low pressure gas piping systems not exceeding six (6) inches of water column shall be tested at ten (10) pounds per square inch on a thirty (30) pounds per square inch gauge using air, CO2, or Nitrogen for not less than fifteen (15) minutes with no perceptible drop in pressure. For welded piping, and for piping carrying gas at pressures in excess of fourteen (14) inches (356 mm) water column pressure, the test pressure shall not be less than sixty (60) pounds per square inch (413.4 kPa) and shall be continued for not less than thirty (30) minutes with no perceptible drop in pressure.

G2417.4.2 (406.4.2) Test duration **Delete in its entirety**

G2425.8 (501.8) (7) Appliances not required to be vented **Delete in its entirety**

G2433.1 (603.1) General **Delete in its entirety and substitute**
Log lighters are prohibited.

G2445 (621) Unvented room heaters **Delete section in its entirety and substitute**
Unvented room heaters and unvented fireplaces are prohibited within a dwelling.

Clarification: IRC Sections G2425.8, G2445 and IFGC Sections 501.8(8), and 621 are deleted in their entirety and amended to prohibit the use of unvented room heaters and specifically unvented or ventless fireplaces. These are defined as appliances that have no flue collar or flue pipe associated with them and are designed to discharge all products of combustion through the front or face of the appliance and into the room or space being heated. It is the intent of the Building Official to prohibit the installation of these appliances inside dwellings or to provide heat to habitable spaces. However, these appliances may be installed in accordance with their listings and manufacturers specifications, outside or on patios with or without covers, with at least one open side that communicates directly with the atmosphere.

Chapters 34 through 43. **Delete Chapters in their entirety and substitute** Chapters 34 through 43 are deleted in their entirety and replaced by a new Chapter 34, General Requirements, which shall read as follows:

CHAPTER 34
GENERAL REQUIREMENTS

E3401.1 Scope. This chapter governs all electrical components, equipment and systems used in buildings and structures regulated by this code.

E3401.2 Criteria. All electrical components, equipment and systems shall be designed and constructed in accordance with the provisions of NFPA 70 (National Electric Code, NEC), as amended and adopted by Douglas County.

AMENDMENTS TO THE 2024 INTERNATIONAL BUILDING CODE (IBC)

Note: Refer to the section "Amendments common to all adopted International Codes" for more information.

Appendix C - Group U Agricultural Buildings **Adopt Appendix**

Wildfire Mitigation Standards **Adopt as an appendix**
Attached hereto, as "Exhibit B"

Water Supply Standard for Rural Firefighting **Adopt as an appendix**
Attached hereto, as "Exhibit C"

Appendix Q– Solar Photovoltaic Power Systems **Adopt as a new appendix**
Attached hereto, as "Exhibit E"

101.1 Title [NAME OF JURISDICTION] **Replace**
Douglas County Building Division **Insert**

101.4.4 Property Maintenance **Delete in its entirety**

105.2(2) Work exempt from permit (Building) **Delete item 2 and substitute**

2. Fences, other than swimming pool barriers, not over 7 feet high, unless electrically energized. All electrified fences shall require permitting and compliance with this code, the adopted National Electrical Code and International Fire Code as amended and adopted by Douglas County.

Work exempted from permit under Section 105.2 shall comply with the Douglas County Wildfire Resiliency Code when applicable.

105.3(8) Application for permit **Add a new section**

Soils testing shall be performed, and a Soils Report of the building site prepared by a professional engineer registered by the State of Colorado shall be submitted with the

application for a building permit. A professional engineer registered by the State of Colorado shall design the foundation in accordance with the Soils Report. When the building site is located in a hillside area or, in the opinion of the Building Official, is located in an area subject to geological hazards or steep slopes, the Building Official may require an engineering geologist, working within their field of expertise, to submit specific recommendations regarding the building site and the proposed location and design. Such recommendations shall include, but are not limited to, the relationships of site grading, structural integrity, site vegetation characteristics (or potential), location of septic drain fields, and protection of adjacent property.

109 Fees — **Delete section and all subsections to fees in their entirety**

110.3.1 Footing and foundation inspection — **Add to end of subsection**

Inspections shall be performed by a Colorado registered professional engineer. A sealed written report shall be provided to the Building Official of the results for these inspections by a Colorado registered professional engineer.

111.1 Change of occupancy — **Add new exception**

2. Certificates of occupancy are not required for buildings and structures permitted under Section 312 Utility and Miscellaneous Group U.

113 Means of Appeals — **Delete this section in its entirety**

310.4.2 Lodging Houses. — **Delete in its entirety and substitute**

Owner-occupied lodging houses with five or fewer guest rooms and 10 or fewer total occupants shall be permitted to be constructed in accordance with the International Residential Code, provided an automatic sprinkler system is installed in accordance with IRC Section P2904 or that meets the requirements of NFPA 13D.

1608.2 Ground snow loads — **Delete in its entirety and substitute**

Snow loads for portions of Douglas County outside of the Pike National Forest boundary shall be 30 pounds per square foot for an elevation up to 6,000 feet and shall increase 5 pounds per square foot for every 500-foot increment above 6,000 feet. Snow loads for all elevations above 8,000 feet shall be determined based on the Snow Load Design Data for Colorado recommendations prepared by the Structural Engineer's Association of Colorado. No reduction for ground snow load to flat roof snow load ($p_g = p_f$).

1609.3 Basic design wind speed — **Delete in its entirety and substitute**

Risk Category II - Figure 1609.3(1) equals 115 miles per hour
Risk Category III - Figure 1609.3(2) equals 120 miles per hour
Risk Category IV - Figure 1609.3(3) equals 120 miles per hour
Risk Category I - Figure 1609.3(4) equals 105 miles per hour

1609.4.3 Exposure categories **Delete in its entirety and substitute**

The design wind exposure category for unincorporated Douglas County shall be Exposure C.

1612.3 Establishment of flood hazard areas **Delete in its entirety and substitute**

All flood hazard areas in unincorporated Douglas County shall be defined and governed by the Douglas County Zoning Resolution, Section 18, Floodplain – Overlay District.

1803.2.1 Investigations required **Add new subsection**

Based on soils reports for lots within the Dipping Bedrock Overlay District, as identified by the Colorado Geological Survey, the Building Official may require additional testing to determine the proper foundation design. Such additional testing may include, but is not limited to, testing for initial water content, initial dry density, grain size distribution, Atterberg Limits (liquid limit and plasticity index), percent swell and test load surcharge, swell pressure, penetration resistance (blow counts), and unconfined compressive strength.

1809.5 Frost protection **Addition as first sentence**

Frost depth for all areas of Douglas County shall be a minimum of 36 inches.

3111.1 General **Delete in its entirety and substitute**

Solar photovoltaic panels/modules shall comply with the requirements of this code, the 2026 National Electrical Code (or a subsequently adopted electrical code), and IBC Appendix Q (added herein).

AMENDMENTS TO THE 2024 INTERNATIONAL PLUMBING CODE (IPC)

Note: Refer to the section "Amendments common to all adopted International Codes" for more information.

Appendix E Sizing of Water Piping Systems **Appendix E hereby adopted**

101.1 Title [NAME OF JURISDICTION] **Replace**
Douglas County Building Division **Insert**

112 Means of Appeals **Delete in its entirety**

113 Board of Appeals **Delete in its entirety**

114.4 Violation penalties **Delete in its entirety**

115.4 Failure to comply **Delete section and substitute**

Any person who shall continue any work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be subject to penalties as prescribed by law.

305.4.1 Sewer depth **Delete in its entirety**

308.7.2 Hanger rods **Add a new subsection**

308.7.2 Hanger Rods
Hanger rods shall be sized per Table 308.7.2(1)

Table 308.7.2(1)
Minimum Hanger Rod Size

Pipe and Tube Size (inches)	Rod Size (inches)
1/2 - 4	3/8
5 - 8	1/2
10 - 12	5/8

903.1.1 Roof extension unprotected **Delete in its entirety and substitute**
All open vent pipes that extend through a roof shall be terminated at least twelve (12) inches above the roof.

1003.2.1 Municipalities or special districts **Add a new subsection**
Regulations by the municipalities or special districts for wastewater into which the grease trap or interceptor effluent is transported and/or treated may supersede the requirements of Section 1003.

AMENDMENTS TO THE 2024 INTERNATIONAL MECHANICAL CODE (IMC)

Note: Refer to the section "Amendments common to all adopted International Codes" for more information.

101.1 Title [NAME OF JURISDICTION] **Replace**
Douglas County Building Division **Insert**

112 Means of Appeals **Delete in its entirety**

113 Board of Appeals **Delete in its entirety**

114.4 Violation penalties **Delete in its entirety**

115.4 Failure to comply **Delete section and substitute**
Any person who shall continue any work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be subject to penalties as prescribed by law.

AMENDMENTS TO THE 2024 INTERNATIONAL FUEL GAS CODE (IFGC)

Note: Refer to the section "Amendments common to all adopted International Codes" for more information.

101.1 Title [NAME OF JURISDICTION] **Replace**
Douglas County Building Division **Insert**

103.1 [INSERT NAME OF DEPT] **Replace**
Douglas County Building Division **Insert**

112 Means of Appeals **Delete in its entirety**

113.4 Violation penalties **Delete in its entirety**

114.4 Failure to comply **Delete section and substitute**
Any person who shall continue any work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be subject to penalties as prescribed by law.

303.3(3) and (4) Prohibited locations **Delete in their entirety**

404.12 Minimum burial depth **Delete and substitute**
Underground piping systems shall be installed at a minimum depth of eighteen (18) inches (457 mm) below grade.

404.12.1 Individual outdoor appliances **Delete in its entirety**

406.4.1 Test pressure **Delete and substitute**

406.4.1 Test pressure and duration
Low pressure gas piping systems not exceeding six (6) inches of water column shall be tested at ten (10) pounds per square inch on a thirty (30) pounds per square inch gauge using air, CO2, or Nitrogen for not less than fifteen (15) minutes with no perceptible drop in pressure. For welded piping, and for piping carrying gas at pressures in excess of fourteen (14) inches (356 mm) water column pressure, the test pressure shall not be less than sixty (60) pounds per square inch (413.4 kPa) and shall be continued for not less than thirty (30) minutes with no perceptible drop in pressure.

406.4.2 Test duration **Delete in its entirety**

501.8 (8) Appliances not required to be vented **Delete in its entirety**

603.1 General **Delete in its entirety and substitute**
Log lighters are prohibited.

621 Unvented room heaters **Delete section in its entirety and substitute**
Unvented room heaters and unvented fireplaces are prohibited within dwellings. (See clarification in the IRC amendments).

AMENDMENTS TO THE 2024 INTERNATIONAL SWIMMING POOL AND SPA CODE (ISPSC)

Note: Refer to the section "Amendments common to all adopted International Codes" for more information.

101.1 Title [NAME OF JURISDICTION] Douglas County Building Division — **Replace / Insert**

109 Fees — **Delete section and all subsections to fees in their entirety**

112 Means of Appeals — **Delete section in its entirety**

114.4 Failure to comply — **Delete section and substitute**

Any person who shall continue any work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be subject to penalties as prescribed by law.

AMENDMENTS TO THE 2024 INTERNATIONAL ENERGY CONSERVATION CODE (IECC)

Note: Refer to the section "Amendments common to all adopted International Codes" for more information.

101.1 Title [NAME OF JURISDICTION] Douglas County Building Division — **Replace / Insert**

106 Fees — **Delete section and all subsections to fees in their entirety**

109 Means of Appeals — **Delete section in its entirety**

110.4 Failure to comply — **Delete section and substitute**

Any person who shall continue any work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be subject to penalties as prescribed by law.

C103.6.3 Systems operation control — **Delete subsection in its entirety**

R202 Definitions — **Delete in their entirety and substitute**

RESIDENTIAL BUILDING

For this code, includes single-family as defined in the IRC, R-3 buildings, as well as R-2 and R-4, buildings three stories or less in height above grade.

EQUIPMENT ROOM
A space that contains either electrical equipment, mechanical equipment, machinery, water pumps, or hydraulic pumps that are a function of the buildings' services.

R401.3 Certificate **Delete the first two sentences and substitute**

A permanent certificate shall be completed by the builder or permit holder and be posted on the return air plenum of the furnace where it is readily accessible. Where a return air plenum is not available, the certificate shall be posted in the area housing the mechanical equipment.

AMENDMENTS TO THE 2026 NATIONAL ELECTRICAL CODE (NEC)

The National Electrical Code is published by the National Fire Protection Association, 1 Batterymarch Park, Quincy, Massachusetts, 02169

Article 210.23 (B) - 15- and 20-amp branch circuits; Addition to the end of the subsection: In dwelling units, the general-purpose branch circuits for receptacles and lighting shall be limited to no more than (10) openings on a 15-amp circuit and no more than (12) openings on a 20-amp circuit. Branch circuits for lighting only shall not exceed 80% of the branch circuit rating. The calculated load shall be determined on the maximum allowable wattage of the fixtures.

Article 210.52 (B) 3- Kitchen Receptacles Requirements; Modify the first sentence to read: Receptacles installed in a kitchen to serve countertop surfaces shall be supplied by not fewer than two small appliance circuits, **these circuits shall have no more than four openings,** either or both of which shall also be permitted to supply receptacle outlets in the same kitchen or other rooms specified in 210.52 (B) (1).

Article 215.4(A) 2 Informational Note #2 – Delete and substitute

Article 215.4(A) 2 Service Conductors and Feeder Conductors, as defined in Article 100, shall be sized to prevent a voltage drop exceeding 3 percent at the furthest termination and will provide reasonable efficiency of operation.

Exhibit B

WILDFIRE MITIGATION STANDARDS

General

(a). Purpose. The provisions of this standard are intended to promote public safety and welfare by reducing the risk of fire-induced damages to property and the environment.

(b). Scope. This standard applies to all property, buildings and structures located within wildfire hazard areas as determined by the Wildfire Overlay District Map, site-specific analysis, and wildfire hazard assessment. Buildings or conditions in existence at the time of the adoption of this standard are allowed to have their use or occupancy continued, if such condition, use, or occupancy was legal at the time of the adoption of this standard.

(c). Design and Construction. The design and construction of buildings and structures located within the boundaries of a Wildfire Hazard Area shall be in accordance with the standard set forth below.

Chapter 1 Introduction

1-1 **Scope.** This standard presents minimum planning criteria for the protection of life and property from wildfire. It includes information on safe procedures and best practices at the wildland-urban interface or intermix.

1-2 **Purpose**. The purpose of this standard is to provide criteria for fire agencies, land use planners, architects, developers, forestry consultants and local government for development in areas that may be threatened by wildfire.

1-3 **Definitions**. For the purpose of this standard, the following terms have the meanings shown below:

Access Routes. Principal vehicular ingress and egress to a structure or through a development, crossing more than one parcel, including public and private roads, streets, and lanes, that extend to and intersect with a publicly maintained road, street, or lane.

Accessory Building or Structure. Any building or structure used incidentally to another building or structure or other allowed use, and which is located on the same lot or parcel.

Aerial Fuels. Standing and supported live and dead combustibles not in direct contact with the ground and consisting mainly of foliage, twigs, branches, stems, cones, bark, and vines.

Approved. Acceptable to the "authority having jurisdiction."

Aspect. Direction towards which the slope faces.

Authority Having Jurisdiction. The "authority having jurisdiction" shall be the Building Official and the Douglas County Office of Emergency Management. When matters of joint interest are involved, the Building Official or the Douglas County Office of Emergency Management may request referral comments from other organizations, offices, or individuals.

Brush. Shrubs and scrub vegetation or other vegetative growth heavier than grass but not full tree size.

Building. Any structure used or intended for supporting any use or occupancy.

Classified Roof. A roof constructed with a roof covering that is listed as meeting the requirements for Class A, B, or C roof covering materials (see NFPA 256, Standard Methods of Fire Tests of Roof Coverings).

Combustible. Any material that, in the form in which it is used and under the condition anticipated, will ignite and burn.

Defensible Space. An area either natural or man-made, where material capable of allowing a fire to spread unchecked has been treated, cleared, or modified to slow the rate and intensity of an advancing wildfire and to create an area for fire suppression operations to occur.

Development. Any human made change to improved or unimproved real estate, including but not limited to buildings, structures, grading, excavation or any alteration to land, buildings or structures which falls under the purview of Douglas County's adopted regulations.

Dwelling Unit. Any building or structure or portion thereof that contains living facilities with provisions for sleeping, eating, cooking, and sanitation for not more than one family.

Fire Hydrant. A valved connection on a piped water supply system having one or more outlets and that is used to supply hose and fire department pumpers with water.

Fuel Break. An area, usually a long strip strategically located, wherein vegetative fuels are reduced in volume and maintained to cause a reduction of fire intensity if ignited by a wildland fire.

Fuel Loading. The volume of fuel in a given area, generally expressed in tons per acre.

Fuel Modification. The removal of fuels, increased spacing of individual plants, or reduction of fuel loading.

Fuels. All combustible materials within the wildland-urban Interface or wildland-urban intermix, including, but not limited to, vegetation and structures.

Ground Fuels. Any native or landscape vegetation not considered a tree and generally in contact with the ground, including, but not limited to, duff layer and loose surface litter.

Home Ignition Zone. The structure itself and everything around it up to a minimum of 100 feet unless limited by property boundaries.

Listed. Equipment or materials included in a list published by an organization acceptable to the "authority having jurisdiction" and concerned with product evaluation, that maintains periodic inspection of production of listed equipment or materials and whose listing states either that the equipment or material meets appropriate standards or has been tested and found suitable for use in a specified manner.

Noncombustible. A material that, in the form in which it is used and under the conditions anticipated, will not aid combustion, or add appreciable heat to an ambient fire. Materials tested in accordance with Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750º C (1382º F), ASTM E 136, and conforming to the criteria contained in Section 7 of the referenced standard shall be considered non-combustible.

Occupancy. The purpose for which a building, or part thereof, is used or intended to be used.

Residential Driveway. A vehicular access for private use that serves one lot or parcel connecting a house, garage, or other allowed use, to the public or private road.

Residential Shared Driveway. A vehicular access for private use that may serve no more than three lots or parcels for the purpose(s) of ingress and egress to buildings, structures, or other allowed use.

Roadway. Any surface improved, designed, or ordinarily used for vehicular travel other than a private residential driveway or residential shared driveway as defined in this Standard.

Slope. Upward or downward incline or slant, usually calculated as a percent of slope [rise or fall per 100 feet of horizontal distance].

Standard. This Exhibit B, Douglas County Wildfire Mitigation Standards.

Structure. That which is built or constructed, an edifice or building of any kind, or any piece of work artificially built up or composed of parts joined together in some definite manner.

Traveled Way. The portion of a roadway that provides for vehicular travel in all permitted directions.

Turnaround. A portion of a roadway or driveway unobstructed by parking, that allows for a safe reversal of direction for emergency equipment.

Turnouts. A widening in a roadway or driveway of sufficient length and width to allow vehicles to pass one another.

Wildland/Urban Interface. An area where development and wildland fuels meet at a well-defined boundary.

Wildland-Urban Intermix. An area where development and wildland fuels meet with no clearly defined boundary.

Wildfire. An unplanned and unwanted fire requiring suppression action; an uncontrolled fire, usually spreading through vegetative fuels but often threatening structures.

Chapter 2 Wildland-Urban Interface and Wildland-Urban Intermix Analysis

2-1 General. The analysis of the wildland-urban interface or wildland-urban intermix will help identify and document local problem areas and guide the application of standards and establishment of priorities relative to fire danger.

2-1.1 Scope. The provisions of this chapter establish general requirements for wildfire hazard assessment, inspection, and analysis for development, new and existing buildings, structures, and premises located within the wildfire hazard area, as determined by the Wildfire Hazard Overlay District Map.

2-1.2 Objective. The objective of this chapter is to establish minimum requirements to reduce the likelihood of life and property loss due to wildland fire, reduce exposures from adjacent structures and to prevent structure fires from spreading to wildland fuels. The wildfire hazard assessment, inspection and analysis shall assess all applicable wildfire hazards and risks as they relate to the natural and built environments. Results of the assessment will establish minimum requirements for project development as it relates to land use applications, including 35 acre and larger developments and building permits.

2-2 Analysis. The authority having jurisdiction shall perform a wildland fire hazard assessment of all developments, existing or planned, to determine the amount of wildfire mitigation necessary. The analysis developed under the authority of this section shall be the basis for the implementation of fire conscious design and construction criteria. The analysis shall be based on a project-specific wildfire hazard assessment that includes considerations of location, topography, aspect, and vegetative fuel loading, as well as any existing developments.

2-3 Analysis Components. The analysis shall consider the following components:

(a) Wildland-urban interface or wildland-urban intermix boundaries

(b) Slope & Aspect

(c) Climatic Conditions

(d) Structure Building Materials

(e) Vegetative Fuels

(f) Neighborhood Scale Hazard Potential

2-4 Assessing Fuel Hazards. For purposes of this sub-paragraph, "fuel" means any combustible material, including petroleum-based products, cultivated landscape plants, grasses, weeds, and wildland vegetation. The amount of fuel modification necessary shall consider the flammability of the structure as affected by building material, building standards, location, and types of vegetation. Fuels shall be maintained and spaced in a condition so that a wildfire burning under average weather conditions would be unlikely to ignite the structure. Fuels modification will be supported by available science, risk models and best practices, and shall be at the discretion of the Authority Having Jurisdiction.

2-4.1 Assessment Relating to the Land-Use Process. Development determined to be subject to the provisions of the Wildfire Hazard Overlay District and identified by wildfire mitigation staff as a significant wildfire hazard, must provide a Wildfire Mitigation or Forest Management Plan to be submitted by a professional forester, reviewed, and approved by Douglas County staff, and executed prior to the issuance of building permits within the development.

2-4.2 Assessment Relating to the Building Permitting Process. Each construction project permitted through the Building Division is subject to review under the adopted regulations. Any property undergoing development within the wildfire hazard area, as identified by the boundaries of the Wildfire Hazard Overlay District Map, whether new construction or modification to existing development, will require a wildfire hazard assessment from the Douglas County Office of Emergency Management. The assessment will examine the area within the first 100 feet from the edge of the built environment or to the property line, whichever comes first. The intensity of fuels management may vary within the 100-foot perimeter of the structure, with more intense fuel reductions being utilized between 5 and 30 feet around the structure, and an ember-resistant zone being required within 5 feet of the structure.

Chapter 3 Fuel Modification Planning

3-1 General. This chapter will provide guidance in the mitigation measures associated with fuel hazards and special hazard conditions. Fuel modifications shall be the primary mitigation measure. New subdivisions or developments shall complete the hazardous fuel reduction and mitigation work outlined in the Douglas County approved forest management or wildfire mitigation plan submitted by the applicant, if required, prior to the issuance of building permits for structures within the development. The Douglas County Office of Emergency Management shall determine whether a wildfire mitigation or forest management plan is required based on current forest conditions

3-2 Evaluation Factors. As prescribed in Chapter 2 of this standard, a comprehensive assessment of the fuel hazard shall be made. Factors that shall be considered in the assessment include:

(a) Fuel-type identification

(b) Fuel loading (volume)

(c) Size of fuel bed (acres)

(d) Slope and aspect

3-2.1 Fuel-type Identification. All fuel, natural vegetation, as well as other flammable materials existing within the area shall be identified and rated as its potential to increase the hazard. The ease of ignition and ability to assist in the spread of fire are important factors.

3-2.2 Fuel Loading. The volume of fuels, both presently existing and likely to be present under expected development, shall be estimated and included on maps.

3-2.3 Slope. Percent of slope and aspect shall be determined and indicated during the assessment process.

3-2.4 Fuel Modification. The purpose of the fuel modification effort shall be to reduce the volume of vegetative fuel to protect structures from approaching wildfire as well as to reduce the potential for a structure fire from spreading to the wildland. The fuel modification shall be initially provided by the developer prior to building permit issuance for buildings or structures, through the implementation of a Douglas County approved wildfire mitigation or forest management plan and shall be maintained by the property owner. Additional fuel modification may be required when buildings or structures are proposed through the building permit process to create defensible space management zones around buildings or structures. The permit process will require the applicant to create and maintain defensible space of 100 feet from each side and from the front and rear of the structure or to the property line, whichever comes first.

3-2.5 Maintenance of Defensible Space.

Responsibility. Persons owning, leasing, controlling, operating, or maintaining buildings or structures are responsible for maintenance of defensible space. Fuels shall be maintained and spaced in a condition so that a wildfire burning under average weather conditions would be unlikely to ignite the structure including, but not limited to removing non-fire resistive vegetation and keeping leaves, needles and other dead vegetative material regularly removed from roofs of buildings and the area immediately adjacent to structures.

Trees. Prune tree branches extending to within 10 feet of any structure to maintain a minimum horizontal clearance of 10 feet. Prune tree branches within the defensible space to remove limbs located less than 10 feet above the ground surface adjacent to trees. Prune portions of tree branches that extend within 10 feet of the outlet of a chimney to maintain a minimum horizontal clearance of 10 feet.

3-3 Defensible Space Management Zones.

Zone 1 is the area of maximum modification and treatment. It consists of an area of 5 feet around the structure in which all flammable native vegetation is removed. These 5 feet are generally measured from the outside edge of the building or structure's eaves and any attached structures, such as decks.

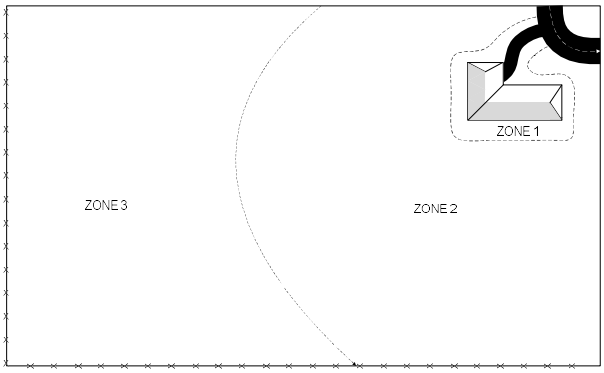


Figure 3-3: Forested property showing the three fire-defensible zones around a home or other structure.

Zone 2 is an area of fuel reduction. It is a transitional area between zones 1 and 3. The defensible zone, or home ignition zone (HIZ) consisting of the home or structure itself, zone 1 and zone 2, shall extend at least 100 feet from the structure unless limited by property boundaries. Within this zone, the continuity and arrangement of vegetation is modified. The intensity of fuels management may vary within the 100-foot perimeter of the structure, with more intense fuel reductions being utilized between 5 and 30 feet around the structure. Examples of fuel modifications include but are not limited to removal of stressed, diseased, dead, or dying trees and shrubs; thinning and pruning the remaining larger trees and shrubs; extending thinning along either side of the driveway all the way to the main access road. These actions help eliminate the continuous fuel surrounding a structure while enhancing safety and the aesthetics of the property.

Zone 3 is an area of traditional forest management and is of no particular size. It extends from the edge of the defensible space zone to the property boundaries.

3-3.1 Modification of Fuel Types. Where consistent with ecological factors, less fire-prone, native vegetation shall be encouraged.

3-3.2 Reduction of Fuel Loading. Trees and brush shall be cleared away from structures for a distance that is in accordance with section 3-3 to prevent ignition of either the structure or the vegetation, should the other burn. Vegetation existing away from the immediate area of the structure shall be thinned and pruned to prevent a fire from being carried toward or away from the structure. Annual grasses shall be mowed to 6 inches or less in accordance with Figure 6. Ground litter shall be removed annually. Over-mature, dead, and dying trees shall be evaluated as to their potential to ignite and to carry fire. All trees determined to contain such potential shall be removed.

3-3.3 Mitigation of Slope and Aspect Impact. Slope and aspect greatly affect the potential for carrying fire, and very little opportunity exists to modify them directly. Where the degree of slope or aspect is determined to affect the hazards, fuels will require a greater degree of modification or fuel breaks shall be required.

3-3.4 Building Envelope Siting. Building envelope siting shall comply with Chapter 3 of this standard. If proper building envelope siting cannot be or is not met as required by Chapter 3, the Building Official, in his or her sole discretion, may approve alternative mitigation methods to include, but not be limited to, private fire protection systems, classified siding, Class "A" roofing, or triple pane windows.

Delete Chapter 4 in its entirety

Chapter 5 Emergency Water Supplies

Where, in any specific case, the amount of water storage for rural fire fighting conflicts with International Fire Code, the Standard for Water Supplies for Rural Firefighting, attached hereto as Exhibit "C" shall govern.

5-1 General. This chapter describes the process by which provisions for emergency water supplies shall be evaluated, designed, constructed, and maintained.

5-2 Notification. The authority having jurisdiction shall be notified in writing before any water system is constructed, altered, or removed and before site development or construction of any structure commences so that fire protection can be evaluated and ample water supply capabilities pertinent to such construction can be established.

5-3 Evaluation of Water Supply Needs.

5-3.1 Authority. The fire protection agency having jurisdiction shall evaluate all buildings, proposed and existing, to obtain information required for computing minimum water supply. Information obtained from plans or on-site surveys and determinations made and recorded shall reflect the water supply category required. The computation of minimum water supplies for other than municipal, domestic, or fixed fire protection systems shall be in accordance with NFPA 1142 or other approved method.

5-3.2 Design, Construction, and Maintenance. Based upon the water supply evaluation, the authority having jurisdiction shall approve the design, construction, and maintenance of water supplies and distribution systems to ensure that the fire protection concerns have been addressed and adequate water supplies and access thereto have been provided.

5-4 Minimum Water Supply Requirements. Water shall be available to provide a minimum fire flow of two hundred fifty (250) gallons per minute for a two (2) hour duration in accordance with Exhibit C of this Resolution.

5-5 Static Water Supplies. The design and construction of and access to static water supplies shall be in accordance with NFPA 1142 or other approved method.

5-6 Signage of Water Supplies. When required by the authority having jurisdiction, each fire hydrant or access to water shall be identified as follows:

(a) A reflectorized marker, with a minimum dimension of three (3) inches, shall be located on the driveway address sign signifying the hydrant location and on a fire-retardant post located near the fire hydrant, and;

(b) A fire-retardant reflectorized sign with the words "DRAFT WATER" or "PRESSURE WATER" having letters a minimum of four (4) inches in height, with ½-inch stroke, reflectorized and contrasting to the background color, shall be located near the hydrant or access to water.

(c) The signpost shall be within three (3) feet of said fire hydrant or access to water, with the sign no less than three (3) feet nor greater than five (5) feet above the ground and visible from the driveway.

Chapter 6 Structural Design and Construction

6-1 General. All proposed buildings or structures in the wildland-urban interface or the wildland-urban intermix shall be designed and constructed to comply with the requirements of this chapter and with this standard. All buildings and structures located in the National Forest shall be required to comply with the requirements of this chapter and with this standard. Agricultural properties, not located in a subdivision, shall have the applicability of this standard determined upon application for a building permit.

6-1.1 Minimum Requirements. Structures and developments in or adjacent to wildland fire hazard areas shall be located, designed, and constructed in a manner to minimize the possibility of ignition from a wildfire and to minimize the spread of a structural fire to the wildland.

6-2 Roofing. Only listed roof covering tested and rated in accordance with UL 790, NFPA 256, Standard Methods of Fire Tests of Roof Coverings; ASTM E 108, Standard Test Methods for Fire Tests of Roof Coverings; or equivalent, shall be used. Subdivision covenants, conditions, and restrictions shall not require the use of roof covering materials that do not meet this Standard.

6-2.1 Wood Shakes and Wood Shingles. Wood shakes and wood shingles are prohibited within the boundaries of the Wildfire Hazard Overlay District.

6-2.2 Replacement or Repair of Roof Coverings. The roof covering on buildings or structures in existence prior to the adoption of this standard that are replaced or have 100 square feet or more replaced in a 12-month period shall be replaced entirely with a roof covering required for new construction in accordance with Chapter 7 of this Standard.

6-3 Vents. Vents for attic and subfloor ventilation shall be screened with a corrosion-resistant, noncombustible wire mesh with the mesh not to exceed nominal 1/8 inches in size.

6-4 Exterior Vertical Walls. Exterior vertical walls shall be constructed of at least ½-inch nominal sheathing or equivalent material and shall extend from the top of the foundation to the roof line.

6-5 Chimneys and Flues.

6-5.1 Outlet Screen. Every chimney, flue, or vent shall be provided with an approved spark arrester consisting of 12-gauge welded or woven wire mesh not exceeding ½ inch.

6-5.2 Construction. Chimney or flue outlets shall be constructed with 10-foot clearance from all vegetation and obstructions.

6-6 Manufactured Homes. Manufactured homes shall meet all applicable construction and safety standards. Permanently located mobile and manufactured homes with an open space beneath shall be provided with full skirting constructed of noncombustible material or a fire resistive assembly having a minimum fire resistive rating of 20 minutes.

6-6.1 Enclosed space beneath the mobile or manufactured homes. Any enclosed space beneath the mobile or manufactured home shall be vented according to 7-3.

6-7 Location of LP Fuel Storage Tanks. Location of LP fuel storage tanks shall be in accordance with the International Fire Code.

Chapter 7 Public Fire Prevention and Fire Safety Information and Education

7-1 Information and Education Plan. The authority having jurisdiction shall prepare a year-round fire prevention and fire safety public information/education plan. The plan, at a minimum, shall identify and analyze:

(a) Specific hazards

(b) Risks

(c) Fire causes

(d) Applicable prevention and safety programs

(e) Target audiences

(f) Activities.

The plan shall utilize a variety of communication techniques to achieve desired objectives.

Chapter 8 Referenced Publications

8-1 The following documents or portions thereof are referenced within this standard and shall be considered part of the requirements of this document.

8-1.1 NFPA Publications.

National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101.

NFPA 1144, Standard for Reducing Structure Ignition Hazards from Wildland Fire 2018 edition

NFPA 1141, Standard for Fire Protection in Planned Building Groups, 2017 edition

NFPA 1142, Standard on Water Supplies for Suburban and Rural Fire Fighting, 2022 edition

8-1.2 International Code Council

International Wildland-Urban Interface Code 2024 edition

8-1.2 Colorado State Forest Service

Standard for Creating and Maintaining the Home Ignition Zone - 2021

Commentary on Defensible Space Zone Prescriptions

Descriptions

Zone 1

The size of Zone 1 is 5 feet, measured from the edges of the structure.

Remove all native vegetation from Zone 1 to reduce fire hazards. If you do keep a tree, consider it part of the structure, and extend the distance of the entire defensible space accordingly. Isolate the tree from any other surrounding trees. Prune it to at least 10 feet above the ground. Remove any branches that interfere with the roof or are within 10 feet of the chimney. Remove all “ladder fuels” from beneath the tree. Ladder fuels are vegetation with vertical continuity that allows fire to burn from ground level up into the branches and crowns of trees. Ladder fuels are potentially very hazardous but are easy to mitigate. No ladder fuels can be allowed under tree canopies. In all other areas, prune all branches of shrubs or trees up to a height of 10 feet above ground (or 1/2 the height, whichever is the least).

Zone 2

Zone 2 is an area of fuel reduction designed to reduce the intensity of any fire approaching a building or structure. Follow these management steps.

Thin trees and large shrubs so there are at least 10 feet between crowns. Crown separation is measured from the furthest branch of one tree to the nearest branch on the next tree (Figure 3).

On steep slopes, allow more space between tree crowns. (See Figure 4 for minimum required spacing for trees on steep slopes.) Remove all ladder fuels from under these remaining trees. Carefully prune trees to a height of at least 10 feet.

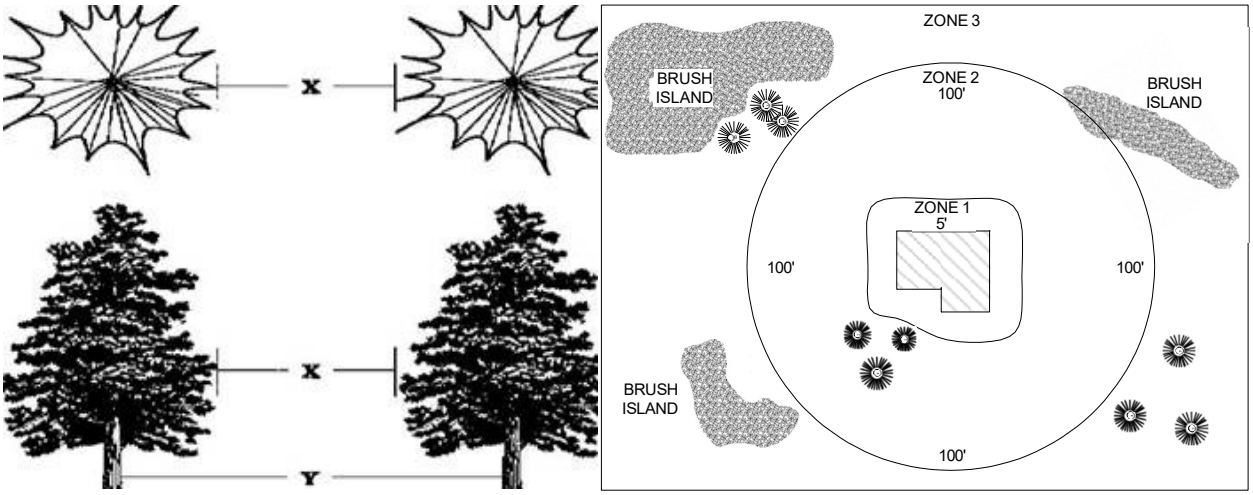


Figure 1: X = crown spacing; Y = stem spacing. Do not measure between stems for crown spacing, measure between the edges of tree crowns.

Small clumps of 2 to 3 trees may be occasionally left in Zone 2. Leave more space between the crowns of these clumps and surrounding trees.

Because Zone 2 forms an aesthetic buffer and provides a transition between zones, it is necessary to blend the requirements for Zones 1 and 3. Thin the portions of Zone 3 adjacent to Zone 2 more heavily than the outer portions.

Zone 3

This zone is of no specified size. It extends from the edge of the defensible space to the property lines.

Forest management in Zone 3 is an opportunity to increase the health and growth rate of the forest in this zone. Keep in mind that root competition for available moisture limits tree growth and ultimately the health of the forest.

A greater number of wildlife trees can remain in Zone 3. Make sure that dead trees pose no threat to power lines or vehicular access.

Mowing is not necessary in Zone 3.

Any approved method of slash treatment is acceptable for this zone, including chipping or lop-and-scatter.

Grasses

Keep dead, dry or curing grasses mowed to less than 6 inches. Defensible space size where grass is the predominant fuel can be reduced. Use Figure 4 when applying this practice.

Figure 2: Minimum tree crown and shrub clump spacing

% Slope	Tree Crown Spacing	Brush and Shrub Clump Spacing
0 -10 %	10′	2 1/2 x shrub height
11 - 20%	15′	3 x shrub height
21 - 40%	20′	4 x shrub height
> 40%	30′	6 x shrub height

Figure 3: Minimum tree spacing for Zone 3.

Tree Diameter Average Stem Spacing Between Trees

(In inches)	**(In feet)**
3	10
4	11
5	12
6	13
7	14
8	15
9	16
10	17
11	19
12	21
13	23
14	24
15	26
16	28
17	29
18	31
19	33
20	35
21	36
22	38
23	40
24	42

Figure 4: Minimum defensible space size for grass fuels.

% Slope	Defensible space size (uphill, downhill, sidehill)
0 - 20 %	30’ Feet
21 - 40%	50’ Feet
> 40%	70’ Feet

Exhibit C

STANDARD FOR WATER SUPPLIES FOR RURAL FIRE FIGHTING

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Appendix B

Dry Hydrant Manual, A Guide for Developing Alternative Water Sources for Rural Fire Protection; Chestatee- Chattahoochee Resource Conservation & Development Council of Gainesville, Georgia.

NOTICE: An asterisk (*) following the number or letter designating a paragraph indicates explanatory material on that paragraph in Appendix A.

Section 1 Administration

1-1 Scope.
This standard defines the minimum requirements for fire protection water supplies necessary for the protection of property in rural areas of Douglas County. This standard applies to new parcels in rural areas in which adequate and reliable water supplies do not exist and shall apply to all portions of unincorporated Douglas County. Douglas County subdivision regulations may require greater amounts of water storage. Where, in any specific case, the amount of water storage for rural fire fighting conflicts with the International Fire Code for Group R- 3 occupancies, the requirements of this chapter shall govern.

1-2 Purpose.
This standard specifies minimum requirements for water supply for firefighting purposes to protect property from fire in areas where water must be transported from a river, lake, canal, stream, pond, cistern, or other similar source of water that is available as a suction supply for fire department use. A hydrant served by a water distribution system shall be permitted to be the source of supply for water that is transported to the rural fire area.

It is the intent of this standard to provide and maintain water supplies for firefighting purposes through the establishment of a cooperative working arrangement among the Douglas County Fire Districts, the developers of rural parcels, and the property owners.

1-3 Referenced Criteria.
The fire protection water requirements in this standard are based in part on NFPA 1142, NFPA 1144, ISO Fire Suppression Rating Schedule, and the International Fire Code. The information from these publications was evaluated and incorporated into this minimum standard in a manner which accounted for the actual fire flow and storage amounts, the ability of Douglas County Fire Districts to utilize the water, the need to account for increased and more effective operations as the fire districts strive to obtain the improved fire insurance ratings for their citizens, and the existing but sometimes unrecorded or undeveloped natural water sources within Douglas County.

1-4 Definitions.
Accessible. A condition that allows for fire department vehicles to approach and connect to a water supply. It shall be an all-weather road surface, capable of supporting a 20-ton fire apparatus, and it shall be maintained during all weather conditions to assure unimpeded vehicular access every day of the year.

Authority Having Jurisdiction (AHJ). The Douglas County Building Official shall be the "authority having jurisdiction".

Cistern. A water storage tank, usually underground and designed with positive pressure, designed to contain a designated volume of water and to permit the removal of water at no less than 1,000 gallons per minute.

Dry Barrel Hydrant. An outlet, for suction supply of fire protection water, connected to a cistern, which is designed with positive pressure and / or requires freeze protection. Dry barrel hydrants shall have a five (5) inch National Standard Thread (NST) outlet and be adapted for the

local fire district suction hose. Dry barrel hydrants shall meet the requirements of American Water Works Association (AWWA C502-85 Standard for Dry Barrel Hydrants).

Dry Hydrant. An outlet for suction supply of fire protection water connected to a natural body of water or cistern, which is designed without positive pressure or does not require freeze protection. Dry hydrants shall have a five (5) inch National Standard Thread (NST) outlet and be adapted for local fire district suction hose. Dry hydrants shall meet the requirements of the dry hydrant section of this standard and the Dry Hydrant Manual in Appendix B.

Fire Flow. The total amount of water expressed in volume at a prescribed rate (in gallons per minute) applied to suppress a fire and protect exposures.

ISO. The Insurance Service Office.

Natural Body of Water. A river, lake, canal, stream, or pond which, if upon evaluation is deemed acceptable during drought or freezing weather, could be utilized as a reliable and adequate source of water for fire protection.

Section 2 Rural Water Supply Standard for One and Two-Family Dwellings

2-1* General.

The standard requires a water supply system which is capable of providing two hundred fifty (250) gallons per minute (GPM) fire flow, with water storage sufficient to maintain the fire flow for a duration of two (2) hours. The water storage shall not be more than two (2) miles travel distance from the vehicular entrance to any parcel served by the water storage site. The water storage facility shall be funded and installed by the developer/owner prior to construction of any structure within the development.

2-1.1 Water Supply Evaluation Criteria.

The Fire Districts within Douglas County shall perform a survey of all developed water supplies suitable for fire protection use within their respective jurisdictions. This information shall be compiled into a usable format and shall be kept in the office of the Building Official for Douglas County. All Fire Districts shall be responsible for providing updated information to the Building Official, to maintain a current County Water Supply Report.

When reviewing proposed developments, the Building Official shall consult with the Fire District for a joint review of existing water for fire protection, utilizing the County Water Supply Report. This review shall evaluate water supplies within the Fire District's jurisdiction as well as those located within the two (2) miles travel distance within neighboring jurisdictions. All currently recognized water supplies shall be credited when determining the need for and the placement of new water storage sites.

2-1.2 Application.

This standard shall apply to all new rural developments that contain or create four (4) or more residential parcels. Developments legally in existence at the time of the adoption of this standard, or new developments that contain or create less than four (4) residential parcels, and

additions or modifications to existing homes, are not required to provide minimum water supplies or upgrade existing water supplies to meet this standard.

2-1.3 Design Approval.
One (1) set of installation drawings, manufacturer's installation instructions, and a site plan shall be submitted to the Building Official for approval, and all permits required by Douglas County shall be obtained. All water storage systems shall be installed according to manufacturer's installation instructions. The Fire District and the Building Official may inspect the installation at any time.

2-2* Cistern Design.

2-2.1 Tank Size.
The minimum tank capacity shall not be less than thirty thousand (30,000) gallons. Two smaller tanks may be utilized in areas which may present unique installation problems. If two smaller tanks are installed, they must be connected to allow proper filling as well as discharge, and the combined capacity of both tanks shall not be less than thirty thousand (30,000) gallons.

2-2.2 Tank Material.
All water supply tanks shall be constructed of steel, fiberglass, plastic, or engineered concrete and shall be approved by the manufacturer to be appropriate for non-potable water storage. Steel tanks shall be coated and shall be provided with cathodic protection. Fiberglass and plastic tanks shall be constructed in accordance with appropriate ASTM Standards. Tanks and associated piping and appurtenances shall be new and have been used for no other purpose.

2-2.3 Outlet Piping.
All discharge piping shall be a minimum of six (6) inch diameter PVC Schedule Forty (40). Drain, waste and vent (DWV) pipe and fittings are not acceptable.

2-2.4 Fittings.
All fittings shall be of the type and schedule to be compatible with the piping being used.

2-2.5 Tank Access.
Tanks shall have a manhole or other approved means of access for tank inspection and repair. This access shall be capable of being closed and secured for purposes of safety.

2-2.6 Tank Fill Valve.
A tank fill valve shall be installed on the supply line from the well and shall be controlled by an approved tank level sensor that will ensure that the tank remains full.

2-2.7 Suction Supply Outlet.
All water supply cisterns shall have a minimum of one outlet that meets the size and design requirements of the local fire district. Cisterns designed with positive pressure and systems with

discharge pipes that require freeze protection shall have at least one Dry Barrel Hydrant. Cisterns designed without positive pressure shall have at least one Dry Hydrant.

2-2.8 Tank to Outlet Line Valve.
All water storage tanks designed with positive pressure shall have a valve between the tanks and the outlet pipe. This valve shall be capable of being manually operated from ground level.

2-2.9 Tank Installation.
Tanks shall be installed in accordance with manufacturer's recommendations. The tank shall be installed in a manner, which will prevent freezing and surface erosion.

2-2.10 Pipe Installation.
Piping shall be installed in accordance with manufacturer's recommendations. Piping shall be installed in a manner which will prevent freezing and surface erosion.

2-2.11 Water Supply Easement.
An easement shall be recorded to allow the Fire District to repair, use, and maintain the water storage facility.

2-2.12 Water Use Agreement.
An agreement shall be signed and recorded, encumbering the property, granting the Fire District the perpetual right to utilize the water for the fire protection needs of the property to be served.

2-2.13 Well.
A well, installed in accordance with the requirements of the Colorado Division of Water Resources shall be connected to a cistern to maintain the fill level. The well may be a low volume (15 GPM) and shall be connected to the tank in an appropriate manner.

2-3* Natural Bodies of Water.

2-3.1 Outlet Piping.
All discharge piping shall be a minimum of six (6) inch diameter PVC Schedule Forty (40). Drain, waste and vent (DWV) pipe and fittings are not acceptable.

2-3.2 Fittings.
All fittings shall be of the type and schedule to be compatible with the piping being used.

2-3.3 Suction Supply Outlet.
All natural bodies of water utilized for fire protection water supplies shall have a minimum of one outlet that meets the size and design requirements of the local fire district. Natural bodies of water designed with positive pressure and systems with discharge pipes which required freeze protection shall have a minimum of one Dry Barrel Hydrant. Natural bodies of water with suction outlets designed without positive pressure shall have at least one Dry Hydrant.

2-3.4 Pipe Installation.
Piping shall be installed in accordance with manufacturer's recommendations. Piping shall be installed in a manner, which will prevent freezing and surface erosion.

2-3.5 Water Supply Easement.
An easement shall be recorded to allow the Fire District to repair, use, and maintain the water supply facility.

2-3.6 Water Use Agreement.
An agreement shall be signed and recorded, encumbering the property, granting the Fire District the perpetual right to utilize the water for the fire protection needs of the property to be served.

2-4* Water Supply Access.
The water supply site shall be accessible from a public or private roadway.
A fire apparatus pullout shall be connected to the roadway and constructed to permit fire apparatus to position for water removal and to permit tenders to be filled and turned around. The pullout shall be designed as a forty-five (45) foot radius or twenty (20) foot by sixty (60) foot rectangular area with the water supply hydrant outlet located at the apex of the radius or the centerline of a rectangle. The outlet shall be located not more than eight (8) feet or less than six (6) feet from the edge of the all-weather surface. Two steel posts (bollards) shall be placed at the edge of the all-weather surface to protect the hydrant.

2-5* Testing and Maintenance.

2-5.1 Testing.
Acceptance testing shall be performed jointly by the Building Official and the Fire District whenever possible, prior to the construction of any structures within the development served by the water storage facility. Acceptance testing shall include vacuum test of draft piping, pressure testing at fifty (50) pounds per square inch for pipes in those systems designed with head pressure, and a flow test.

After acceptance, each water storage location shall be checked periodically, and reports kept by the Fire District. Fire Districts should establish a program for testing and maintenance of water supply facilities within their jurisdiction.

2-5.2 Maintenance.
The Fire District shall be responsible to ensure the operational readiness of the water supply facility. The Fire District may choose to delegate the cost and responsibility of the water system maintenance to an organization other than the Fire District. In such case the Fire District shall stipulate to a maintenance agreement, which must be reviewed and approved by Douglas County, that ensures the operational readiness and continued maintenance of each water supply facility.

Section 3 Rural Water Supply Standard for Buildings Other Than One and Two-Family Dwellings

3-1 General.
The required fire flow for buildings other than one and two-family dwellings shall be in accordance with the International Fire Code as amended.

3-2 Application.
Fire flow requirements may be modified when agreed upon by the fire code official and the building official. The Douglas County Standard for Water Supplies for Rural Fire Fighting, NFPA 1141, NFPA 1142, ISO Fire Suppression Rating Schedule or other approved method may be utilized to determine fire flow requirements.

APPENDIX "A"

A-2-1 General.
The application of this standard will, over a period of time, ensure adequate fire suppression water supplies for a large portion of Douglas County. The standard uses a systems approach to fire protection water supply requirements by encouraging a uniform application of these requirements. The installation of standard water supplies, in developed areas of the county, enhances the operation of mutual and auto aide companies in routine and conflagration fires. The use of a uniform standard by all fire districts can diminish the review problems encountered by fire personnel, planners, and developers.

Fire Flow.
The minimum fire flow requirement is two hundred fifty (250) GPM based on the Fire Districts ability to transport water using their equipment. The ability to increase the fire flow from two hundred fifty (250) GPM to five hundred (500) GPM or more can be accomplished by utilizing auto aid or additions of tenders by the Fire District.

The two hundred fifty (250) GPM is recognized by ISO as the minimum fire flow necessary for credit as a protected property (Class 9) and a strong argument can be made for all Douglas County Fire Districts ability to apply the available fire flow to the fire. An analysis of response times for arriving engines and tankers can demonstrate the initial ability to utilize a fire flow of two hundred fifty (250) GPM. As other apparatus arrives from more distant locations, including auto aide water hauling tenders, increases in fire flow can be expected and utilized.

Water Storage.
Water for fire protection can utilize either stored water in an underground tank (cistern) or by access to a natural body of water. The minimum amount of water storage is thirty thousand (30,000) gallons, which translates into two (2) hours of the minimum fire flow.

The storage of two (2) hours of fire flow is an accepted fire service standard (IFC Appendix B) and is substantiated by the minimum requirements of the insurance standard. The resulting cistern size of thirty thousand (30,000) gallons works well in a system approach to suppression water. Natural Bodies of Water offer an excellent source for fire protection.

The initial use of the closest water source to develop two hundred fifty (250) GPM may be supplemented by more distant sources by auto aid water hauling tenders. The use of more water storage sites may become a necessary requirement to relieve congestion at a single water storage site used to fill tenders at a set rate.

Travel Distance.
The maximum travel distance shall be two (2) miles from the water source (cistern or natural body of water) to each parcel. The travel distance is computed using ISO formulas for time and distance based on average speed of thirty-five (35) miles per hour. Since rural operations often involve standard operations, which account for long driveways, the driveways are not included. The maximum travel distance of two miles limits the total travel to four miles round trip and places the thirty thousand (30,000) gallon cisterns every four miles. The limit of four travel miles, round trip, encourages developers to ensure an effective roadway network with connections that maximizes the effectiveness of each water storage site.

A-2-2 Cistern Design.
Cisterns shall be built to hold thirty thousand (30,000) gallons and installed with a low volume well, less than fifteen (15) gallons per minute to maintain the water level once the cistern is full. An all-weather road shall accommodate access to engines and tenders and provide a hydrant (wet or dry) with standardized NST connections installed with head pressure whenever possible. The well can be utilized for domestic water supply to a building site, which is encouraged. The daily use of the well helps to ensure it's in service operation and does not compromise the ability to maintain the water level in the cistern. The developer must grant an easement on the building site, which best serves, the area as the cistern location. An agreement for reimbursement of cost to operate the well for large usage can be arranged with the homeowner, while incidental "topping off" is paid for by the daily user of the well.

A-2-3 Natural Bodies of Water.
The use of natural bodies of water requires a field survey which:

- Measures the potential for fire protection water availability every date of the year
- Measures the useful depth of the water as a function of draftable height to the pump intake
- Studies flow characteristics during each of the annual weather seasons for a stream or river source
- Addresses the ability to install an accessible hydrant

The Dry Hydrant Manual referenced in Appendix B provides detailed checklists for the field survey and the draftable limits in feet as function of elevation as designated by the Colorado State Forest Service.

A-2-4 Water Supply Access.
The access specified in Section 2-4 can be accomplished by utilizing different designs provided that the design accommodates an unobstructed area, located outside of the traffic lanes, and permits fire engine connection to the outlet and clearance to accommodate tender approach hose connection, and turn around. See examples in Figures 1 through 3.

A-2-5 Testing and Maintenance.
It is important for the Fire District not only to require the proper placement and design of water storage facilities, but also to ensure the continued operational effectiveness. As additional water supplies are installed, the Fire District must formulate a plan to address the future maintenance of the facilities. The standard allows the Fire District many options to meet this end. For example, the Fire District may choose to allow the well serving a facility to be utilized for the domestic needs of the parcel on which the storage facility is located. By doing so, the Fire District has ensured the continued daily function of the well at no cost to the Fire District and has provided an economic incentive to the developer and/or property owner. The balance of the water supply system should be relatively cost effective as little or no maintenance is required on a properly designed and installed system. The standard will allow and encourage creative and individual methods for Fire Districts to address the maintenance requirements of a growing number of water supply facilities located within their jurisdiction.

APPENDIX "B"

Dry Hydrant Manual, A Guide for Developing Alternative Water Sources for Rural Fire Protection; Chestatee-Chattahoochee Resource Conservation & Development Council of Gainesville, Georgia. Copies are available by contacting the Franktown District of the Colorado State Forest Service; P.O. Box 485; Franktown, Colorado 80116. Telephone (303) 660-9625. Copies are also available at the Douglas County Building Division.

Exhibit D

INSTALLATION STANDARDS FOR POTABLE WATER STORAGE TANKS AND CISTERNS FOR DOMESTIC USE IS - 22 – 98

This standard shall govern the installation of potable water storage tanks and underground cisterns for domestic water use in dwellings. This standard includes both interior and exterior underground installations and establishes minimum standards for installation. Interior installations are recommended because they are more suitable for periodic inspection and maintenance by the homeowner.

This standard shall be utilized only when a reliable source of water is not available. In areas where wells are the primary source of water, a well test shall be performed to indicate the gallons per minute flow from the well. If the well fails to produce water or the flow is deemed inadequate by the authority having jurisdiction, only then shall this standard be utilized.

This standard shall apply to all new dwellings and additions or alterations where bedrooms are being added. In cases where existing wells are being used, a well test must be performed to indicate the gallons per minute flow from the well.

301.1 Minimum Standards.

301.1.1 Potable water above ground storage tanks and underground cisterns shall be of materials that are listed for potable use and approved by FDA Title 21, NSF, or AWWA. Steel and concrete tanks must be properly prepared and painted on the inside using an NSF epoxy paint. Additionally, underground steel tanks must be asphaltic coated, or epoxy coated on the outside to retard rusting.

301.1.2 Concrete cisterns or vaults shall be of such design that there are no seams below the fill line of the tank or vault. Concrete cisterns or vaults shall be properly prepared and coated on the inside using an NSF approved epoxy paint.

301.1.3 All piping, fittings, and valves must meet the mandatory referenced standards included in Chapter 14 of the 2024 International Plumbing Code.

301.1.4 The minimum capacity of water storage required for a single-family dwelling shall be based upon a formula using 80 gallons of water per day, per person. Homes served by wells producing less than .5 gallons per minute shall be sized for a minimum 5-day supply. Homes served by wells producing .5 gallons per minute and greater shall be sized for 3-day supply. The number of persons shall be based on a bedroom count assuming that the first bedroom will count for two people and additional bedrooms counting for one person (i.e., 3-bedroom house counts for 4 people and requires 960 gallons storage if gpm is .5 gpm or greater and 1600 gallons of storage if less than .5 gallons). The actual storage capacity of the pressure tank and the water heater may be taken into consideration for the total amount of water storage required.

301.1.5 Buried tanks shall be placed upon and completely surrounded with pea gravel or other manufacturer's approved material and shall not be less than 12 inches in thickness at any point.

301.1.6 All tanks shall be placed in a fashion to permit periodic maintenance, inspection, and repair. This shall include, but not be limited to:

1) Minimum 22 inches manway access into the cistern.

2) Vent piping to the atmosphere must be brass-screened mesh #24 and terminate not less than 36 inches above grade.

3) All connections of wet piping to the cistern shall be made with approved flexible couplings permitting independent movement of the tank due to seismic activity or shrink/swell movement of the soils.

301.1.7 Cisterns shall be located at least 25 feet from buildings, 50 feet away from sewer lines or septic tanks, and at least 100 feet from sewage disposal field.

301.1.8 No structure or traffic path may be constructed over a buried tank system unless required and must be approved by the tank manufacturer.

301.2 All installations shall conform to applicable codes and regulations adopted by the jurisdiction and shall be reviewed for compliance and approved by the Building Official prior to commencement of work.

301.3 Water storage cisterns and associated piping shall not be used for bonding of the electrical system. An alternative method of bonding, compatible with the most current edition of the National Electrical Code shall be used.

301.4 All such systems and associated piping shall be cleaned and sanitized prior to being placed into service.

301.5 All storage vessels shall be new and have been used for no other purpose.

301.6 All systems shall be capable of being filled from an outside source.

301.7 All systems shall be tested for leaks by filling the system with water. No system shall be tested using air pressure (hydrostatic). The test shall incorporate the use of either the vent pipe or fill pipe as a water column with no increase or decrease of more than one inch in the water column over a 24-hour period.

302.1 Interior Water Storage.

302.1.1 Interior spaces where water storage tanks are located shall be a conditioned space to prevent freezing. Tanks and piping shall be accessible for removal, replacement,

inspection, and repair. Interior spaces where tanks are located shall be provided with a floor drain. Pumps, pressure vessels, controls, and associated equipment shall be listed by an approved testing agency and approved by the Building Official.

302.1.2 Tanks shall be securely mounted into position. Vertical, upright positioned tanks exceeding 5 feet in height shall be provided with at least two wall mounted supports, one at the top and one at the bottom of the tank.

303.1 Exterior Buried Cisterns.

303.1.1 Exterior buried vessels shall be positioned at least one foot below frost line. The average frost line in Douglas County has been established at 36 inches. A minimum 22" diameter manway and extension with gasketed, bolted cover shall extend to 6 inches above grade for service and maintenance.

303.1.2 Penetrations of the cistern walls, connections, or joints of any kind in any buried cistern for piping and manways shall incorporate the use of flanged, bolted connections.

Explanatory Notes.

Tanks and cisterns are an acceptable means of providing water to a residence where the water well may be a low producing well or in cases where wells have become non-producing. This should not be considered an alternative to being served by a water district or other reliable source of water.

Locating storage tanks within a conditioned space should be strongly considered to eliminate the need for frost protection. The system can be installed in a multiple tank configuration, which allows the owner or occupant the opportunity to clean and provide maintenance on one tank at a time without taking the entire potable water system out of service. Inside translucent polyethylene tank systems can be more easily monitored for visual volume and quality of the water that is being used. Any type of system will eventually accumulate silt particles in the bottom of the tank over a period of time. Exterior buried systems will be much more difficult to clean and maintain and likely will have a higher silt accumulation over a period of time when compared to inside installations.

Water quality should be checked at regular intervals. Water should be tested for bacteria and other harmful waterborne agents. Bacteria or minerals can usually be removed or destroyed with proper treatment technology should such a situation be identified after testing.

Individuals may find that the minimum amount of water storage required by regulation is insufficient and may want to install a larger capacity storage tank. Consideration should also be taken into account that you may see a reduction in the quality of water that has been stored for too long a period of time.

Another issue that should be considered is pump protection for low producing wells. Well pumps can be wired into protective switches that shut off the pump when the pump is running free (i.e., not pumping water because there is no water to pump). Such a condition can shorten the life of a

pump and replacement of a well pump usually involves pulling the pump, which can be expensive, even with a shallow well.

Exhibit E

2024 IBC Appendix Chapter Q

Section Q-1205 Solar Photovoltaic Power Systems

Q-1205.1 General. Solar photovoltaic (PV) systems shall be installed in accordance with the *International Building Code* or *International Residential Code*. The electrical portion of solar PV systems shall be installed in accordance with NFPA 70. Rooftop-mounted solar photovoltaic systems shall be installed in accordance with Sections 1205.2 through 1205.4.3. Ground-mounted solar photovoltaic systems shall comply with Section 1205.5.

Q-1205.2 Access and pathways. Roof access, pathways and spacing requirements shall be provided in accordance with Sections 1205.2.1 through 1205.3.3. Pathways shall be over areas capable of supporting fire fighters accessing the roof. Pathways shall be located in areas with minimal obstructions, such as vent pipes, conduit, or mechanical equipment.

Exceptions:

(1) Detached, non-habitable Group U structures including, but not limited to, detached garages serving Group R-3 buildings, parking shade structures, carports, solar trellises, and similar structures.

(2) Roof access, pathways and spacing requirements need not be provided where the *fire code official* has determined that rooftop operations will not be employed.

(3) Building-integrated photovoltaic (BIPV) systems where the BIPV systems are *approved*, integrated into the finished roof surface, and are *listed* in accordance with a national test standard developed to address Section 690.12(B)(2) of NFPA way of portions of the PV system during fire-fighting operations shall expose a fire fighter to electrical shock

Q-1205.2.1 Solar photovoltaic (PV) systems for Group R- 3 buildings. Solar photovoltaic (PV) systems for Group R-3 buildings shall comply with Sections 1205.2.1.1 through 1205.2.3.

Exceptions:

1. These requirements shall not apply to structures designed and constructed in accordance with the *International Residential Code*.
2. These requirements shall not apply to roofs with slopes of 2 units vertical in 12 units horizontal (16.7-percent slope) or less.

Q-1205.2.1.1 Pathways to ridge. Not fewer than two 36- inch-wide (914 mm) pathways on separate roof planes, from lowest roof edge to ridge, shall be provided on all buildings. Not fewer than one pathway shall be provided on the street or driveway side of the roof. For each roof plane with a photovoltaic array, not fewer than one 36-inch-wide (914 mm) pathway from lowest roof edge to ridge shall be provided on the same roof plane as the photovoltaic array, on an adjacent roof plane or straddling the same and adjacent roof planes.

Q-1205.2.1.2 Setbacks at ridge. For photovoltaic arrays occupying 33 percent or less of the plan view total roof area, a setback of not less than 18 inches (457 mm) wide is required on both sides of a horizontal ridge. For photovoltaic arrays occupying more than 33 percent of the

plan view total roof area, a setback of not less than 36 inches (457 mm) wide is required on both sides of a horizontal ridge.

Q-1205.2.1.3 Alternative setbacks at ridge. Where an *automatic sprinkler system* is installed within the *dwelling* in accordance with Section 903.3.1.3, setbacks at the ridge shall conform to one of the following:

1. For photovoltaic arrays occupying 66 percent or less of the plan view total roof area, a setback of not less than 18 inches (457 mm) wide is required on both sides of a horizontal ridge.
2. For photovoltaic arrays occupying more than 66 percent of the plan view total roof area, a setback of not less than 36 inches (914 mm) wide is required on both sides of a horizontal ridge.

Q-1205.2.2 Emergency escape and rescue openings. Panels and modules installed on Group R-3 buildings shall not be placed on the portion of a roof that is below an emergency escape and rescue opening. A pathway of not less than 36 inches (914 mm) wide shall be provided to the emergency escape and rescue opening.

Q-1205.2.3 Building-integrated photovoltaic (BIPV) systems. Where building-integrated photovoltaic (BIPV) systems are installed in a manner that creates areas with electrical hazards to be hidden from view, markings shall be provided to identify the hazardous areas to avoid. The markings shall be reflective and be visible from grade.

Exception: BIPV systems *listed* in accordance with Section 690.12(B)(2) of NFPA 70, where the removal or cutting away of portions of the BIPV system during fire-fighting operations have been determined to not expose a fire fighter to electrical shock hazards.

Q-1205.3 Other than Group R-3 buildings. Access to systems for buildings, other than those containing Group R-3 occupancies, shall be provided in accordance with Sections 1205.3.1 through 1205.3.3.

Exception: Where it is determined by the *fire code official* that the roof configuration is similar to that of a Group R-3 occupancy, the residential access and ventilation requirements in Sections 1205.2.1.1 through 1205.2.1.3 are a suitable alternative.

Q-1205.3.1 Perimeter pathways. There shall be a mini- mum 6-foot-wide (1829 mm) clear perimeter around the edges of the roof.

Exception: Where either axis of the building is 250 feet (76 200 mm) or less, the clear perimeter around the edges of the roof shall be permitted to be reduced to a minimum width of 4 feet (1219 mm).

Q-1205.3.2 Interior pathways. Interior pathways shall be provided between array sections to meet the following requirements:

1. Pathways shall be provided at intervals not greater than 150 feet (45 720 mm) throughout the length and width of the roof.
2. A pathway not less than 4 feet (1219 mm) wide in a straight line to roof standpipes or ventilation hatches.

3. A pathway not less than 4 feet (1219 mm) wide around roof access hatches, with not fewer than one such pathway to a parapet or roof edge.

Q-1205.3.3 Smoke ventilation. The solar installation shall be designed to meet the following requirements:

1. Where non-gravity-operated smoke and heat vents occur, a pathway not less than 4 feet (1219 mm) wide shall be provided bordering all sides.
2. Where gravity-operated dropout smoke and heat vents occur, a pathway not less than 4 feet (1219 mm) wide on not fewer than one side.
3. Smoke ventilation options between array sections shall be one of the following:
   - 3.1. A pathway not less than 8 feet (2438 mm) wide.
   - 3.2. A pathway not less than 4 feet wide bordering 4-foot by 8-foot venting cutouts every 20 feet (6096mm) on alternating sides of the pathway.

Q-1205.4 Buildings with rapid shutdown. Buildings with rapid shutdown solar photovoltaic systems shall have permanent labels in accordance with Sections 1205.4.1 through 1205.4.3.

Q-1205.4.1 Rapid shutdown type. The type of solar photovoltaic system rapid shutdown shall be labeled with one of the following:

1. For solar photovoltaic systems that shut down the array and the conductors leaving the array, a label shall be provided. The first two lines of the label shall be uppercase characters with a minimum height of 3/8 inch (10 mm) in black on a yellow background. The remaining characters shall be uppercase with a minimum height of 3/16 inch (5 mm) in black on a white background. The label shall be in accordance with Figure 1205.4.1(1) and state the following:

   SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN. TURN RAPID SHUTDOWN SWITCH TO THE "OFF" POSITION TO SHUT DOWN PV SYSTEM AND REDUCE SHOCK HAZARD IN ARRAY.

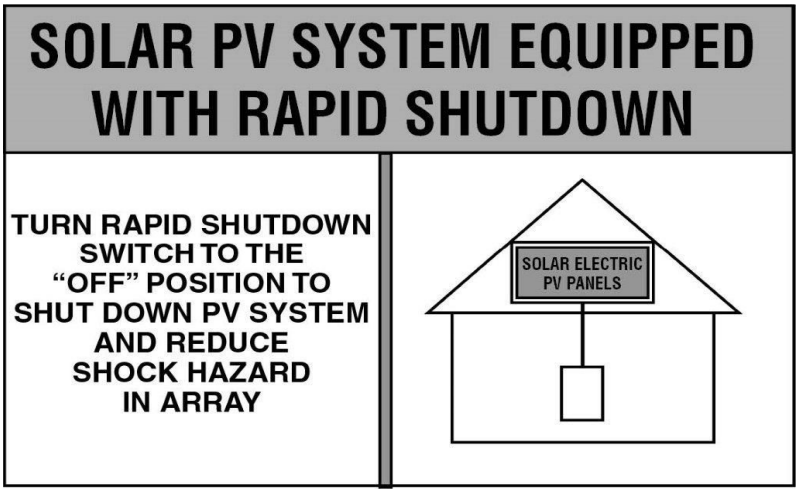


FIGURE 1205.4.1(1)
LABEL FOR SOLAR PV SYSTEMS THAT REDUCE SHOCK HAZARD WITHIN ARRAY AND SHUT DOWN CONDUCTORS LEAVING ARRAY

2. For photovoltaic systems that only shut down conductors leaving the array, a label shall be provided. The first two lines of the label shall be uppercase characters with a minimum height of 3/8 inch (10 mm) in white on a red background and the remaining characters shall be capitalized with a minimum height of 3/16 inch (5 mm) in black on a white background. The label shall be in accordance with Figure 1205.4.1(2) and state the following:

THIS SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN. TURN RAPID SHUTDOWN SWITCH TO THE "OFF" POSITION TO SHUT DOWN CONDUCTORS OUTSIDE THE ARRAY. CONDUCTORS WITHIN ARRAY REMAIN ENERGIZED IN SUNLIGHT.

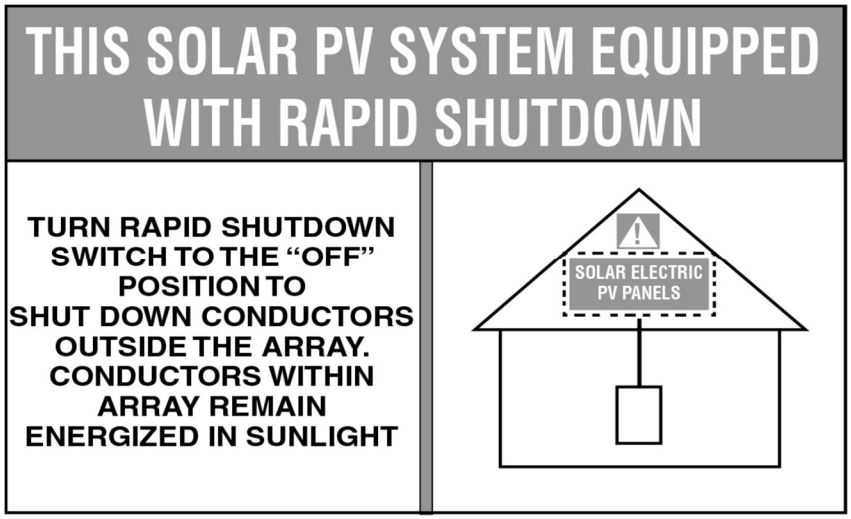


FIGURE 1205.4.1(2)
LABEL FOR SOLAR PV SYSTEMS THAT ONLY SHUT DOWN CONDUCTORS LEAVING ARRAY

Q-1205.4.1.1 Diagram. The labels in Section 1205.4.1 shall include a simple diagram of a building with a roof. Diagram sections in red signify sections of the solar photovoltaic system that are not shut down when the rapid shutdown switch is turned off.

Q-1205.4.1.2 Location. The rapid shutdown label in Section 1205.4.1 shall be located not greater than 3 feet (914 mm) from the service disconnecting means to which the photovoltaic systems are connected and shall indicate the location of all identified rapid shutdown switches if not at the same location.

Q-1205.4.2 Buildings with more than one rapid shutdown type. Solar photovoltaic systems that contain rapid shutdown in accordance with both Items 1 and 2 of Section 1205.4.1 or solar photovoltaic systems where only portions of the systems on the building contain rapid shutdown, shall provide a detailed plan view diagram of the roof showing each different photovoltaic system and a dotted line around areas that remain energized after the rapid shutdown switch is operated.

Q-1205.4.3 Rapid shutdown switch. A rapid shutdown switch shall have a label located not greater than 3 feet (914 mm) from the switch that states the following:

Q-1205.5 Ground-mounted photovoltaic panel systems. Ground-mounted photovoltaic panel systems shall be installed in accordance with this section. Setback requirements shall not apply to ground-mounted, free-standing photovoltaic arrays.

Q-1205.5.1 Vegetation control. A clear, brush-free area of 10 feet (3048 mm) shall be required around the perimeter of the ground-mounted photovoltaic arrays. A noncombustible base of gravel or a maintained vegetative surface or a noncombustible base, *approved* by the *fire code official*, shall be installed, and maintained under the photovoltaic arrays and associated electrical equipment installations.

Exhibit **F**



Colorado Model Electric Ready and Solar Ready Code

Published: June 1, 2023



Chapter 1 Scope and Administration

SECTION 101 SCOPE AND GENERAL REQUIREMENTS.

101.1 Title. This code shall be known as the **Electric Ready and Solar Ready Code** of Douglas County Building Division and shall be cited as such. It is referred to herein as "this code".

101.2 Scope. This code applies to all buildings and dwelling units, and the buildings' sites and associated systems and equipment.

101.3 Intent. This code shall regulate the design and construction of buildings to prepare new buildings for solar photovoltaic or solar thermal, electric vehicle charging infrastructure, and electrification of building systems. This code is intended to provide flexibility and balance upfront construction costs with the future cost to retrofit buildings to accommodate these systems. This code is not intended to abridge safety, health or environmental requirements contained in other applicable codes or ordinances.

101.4. Applicability. Where, in any specific case, different sections of this code specify different materials, methods of construction or other requirements, the most restrictive shall govern. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall govern.

> **101.4.1 Residential Buildings.** *Residential buildings* must comply with the Residential Chapters of this code.
>
> **101.4.2 Commercial Buildings.** *Commercial buildings* must comply with the Commercial Chapters of this code.

SECTION 102 WAIVER AND VARIANCE.

102.1 Scope. The following waivers shall be permitted to be requested if buildings meet the following requirements.

> **102.1.1 Commercial Buildings Greater than 10,000 sq. ft.** *Commercial buildings* that have a gross floor area greater than 10,000 sq. ft. shall be eligible to request a partial waiver to the requirements of this code if they meet the requirements of Section **102.2**.
>
> **102.1.2 Buildings Impacted by a Natural Disaster.** Douglas County Building Division is permitted to authorize, upon appeal in specific cases, a waiver from the requirements of this code where, owing to a declared natural disaster that has destroyed buildings or resulted in other exceptional and extraordinary circumstances as determined by Douglas County Building Division, and Douglas

County Building Division determines enforcement of the provisions of this code will result in unnecessary hardship.

102.2 Substantial Cost Differential Waiver. Douglas County Building Division shall be permitted to authorize, upon appeal, a waiver from the requirements of this code for an applicant that asserts that compliance with this code will result in a substantial cost differential. Douglas County Building Division, when authorizing such a waiver, shall be permitted to waive certain requirements of this code only until the cost differential for compliance with the remaining requirements reaches one percent or less. The burden of proof is upon the applicant to provide substantiation of a cost differential, such as quotes or other licensed design professional analyses as *approved* by Douglas County Building Division.

102.2.1 Substantial Cost Differential. For the purposes of Section **102.2**, "substantial cost differential" means costs incurred as a result of compliance with the requirements of this code would exceed one percent of total mechanical, electrical, and plumbing construction costs inclusive of materials and labor.

SECTION 103 CONSTRUCTION DOCUMENTS.

103.1 General. Construction documents and other supporting data shall be submitted in one or more sets, or in a digital format where allowed by the *code official*, with each application for a permit. The construction documents shall be prepared by a registered design professional where required by the statutes of the jurisdiction in which the project is to be constructed. Where special conditions exist, the *code official* is authorized to require necessary construction documents to be prepared by a registered design professional.

Exception: The *code official* is authorized to waive the requirements for construction documents or other supporting data if the *code official* determines they are not necessary to confirm compliance with this code.

103.2 Information on Construction Documents. Construction documents shall be drawn to scale on suitable material. Electronic media documents are permitted to be submitted where *approved* by the *code official*. Construction documents shall be of sufficient clarity to indicate the location, nature, and extent of the work proposed, and show in sufficient detail pertinent data and features of the building, systems, and equipment as herein governed. Details shall include, but are not limited to, the following as applicable:

1. Location and size of the *solar-ready zone.*
2. Structural design loads of roof dead load and roof live load.

3. Pathways for routing of conduit from the *solar-ready zone* to the electrical service panel.
4. Number and location of *EV capable light spaces.*
5. Number and location of *EV capable spaces.*
6. Number and location of *EV ready spaces.*
7. Number and location of *EVSE installed spaces.*
8. Locations of conduit and termination points serving the aforementioned parking spaces.
9. Location for condensate drainage where *combustion equipment* for space heating and water heating is installed.

103.3 Examination of Documents. The *code official* shall examine or cause to be examined the accompanying documents and shall ascertain whether the construction indicated and described is in accordance with the requirements of this code and other pertinent laws or ordinances. The *code official* is authorized to utilize a registered design professional, or other *approved* entity not affiliated with the building design or construction, in conducting the review of the plans and specifications for compliance with the code.

103.3.1 Approval of Construction Documents. When the *code official* issues a permit where construction documents are required, the construction documents shall be endorsed in writing and stamped "Reviewed for Code Compliance". Such *approved* construction documents shall not be changed, modified, or altered without authorization from the *code official*. Work shall be done in accordance with the *approved* construction documents.

One set of "Reviewed for Code Compliance" construction documents shall be retained by the *code official*. The other set shall be returned to the applicant, kept at the site of work, and shall be open to inspection by the *code official* or a duly authorized representative.

103.3.2 Previous Approvals. This code shall not require changes in the construction documents, construction, or designated occupancy of a structure for which a lawful permit has been heretofore issued or otherwise lawfully authorized, and the construction of which has been pursued in good faith within 180 days after the effective date of this code and has not been abandoned; except that the *code official* is authorized to grant one or more extensions of time for additional periods not exceeding 180 days each.

103.3.3 Phased Approval. The *code official* shall have the authority to issue a permit for the construction of part of a solar ready, EV ready, or electric ready installation before the construction documents for the entire system have been submitted or *approved*, provided that adequate

information and detailed statements have been filed complying with all pertinent requirements of this code. The holders of such permit shall proceed at their own risk without assurance that the permit for the entire solar ready, EV ready, or electric ready installation will be granted.

l03.4 Amended Construction Documents. Changes made during construction that are not in compliance with the *approved* construction documents shall be resubmitted for approval as an amended set of construction documents.

103.5 Retention of Construction Documents. One set of *approved* construction documents shall be retained by the *code official* for a period of not less than 180 days from the date of completion of the permitted work, or as required by state or local laws.

103.6 Building Documentation and Closeout Submittal Requirements. The construction documents shall specify that the documents described in this section be provided to the building owner or owner's authorized agent within 90 days of the date of receipt of the certificate of occupancy.

Exception: *Residential buildings.*

103.6.1 Record Documents. Construction documents shall be updated to convey a record of the completed work. Such updates shall include mechanical, electrical, and control drawings that indicate all changes to size, type, and location of components, equipment, and assemblies.

103.6.2 Compliance Documentation. Compliance documentation and supporting calculations shall be delivered in one document to the building owner as a part of the project record documents or manuals, or as a standalone document. This document shall include the specific energy code edition utilized for compliance determination for each system.

SECTION 104 INSPECTIONS.

104.1 General. Construction or work for which a permit is required shall be subject to inspection by the *code official*, his or her designated agent or an *approved agency*, and such construction or work shall remain visible and able to be accessed for inspection purposes until *approved*. Approval as a result of an inspection shall not be construed to be an approval of a violation of the provisions of this code or of other ordinances of the jurisdiction. Inspections presuming to give authority to violate or cancel the provisions of this code or of other ordinances of the jurisdiction shall not be valid. It shall be the duty of the permit applicant to cause the work to remain visible and/or able to be accessed for inspection purposes. Neither the *code official* nor the jurisdiction shall be liable

for expenses entailed in the removal or replacement of any material, product, system or building component required to allow an inspection to validate compliance with this code.

104.2 Required Inspections. The *code official*, his or her designated agent or an *approved agency*, upon notification, shall make the inspections set forth in Sections **104.2.1** through **104.2.4**.

104.2.1 Solar Ready. Inspections shall verify all of the following as required by this code, *approved* plans, and specifications:

1. The location and size of the *solar-ready zone* or the capacity of an installed on-site renewable energy system.
2. Electrical capacity and reserved physical space for circuit breakers in the main electrical service panel that are properly labeled.

104.2.2 Electric Vehicle Ready. Inspections shall verify all of the following as required by this code, *approved* plans, and specifications:

1. *EV* power transfer infrastructure requirements.
2. Electrical equipment associated with each parking space type, including branch circuits, conduit and/or raceway, junction boxes, receptacles, and *EVSE* are properly labeled and installed.
3. Electrical capacity and reserved physical space for circuit breakers in the main electrical service panel are properly labeled, if applicable.

104.2.3 Electric Ready. Inspections shall verify all of the following as required by this code, *approved* plans, and specifications:

1. Branch circuits, conduit and/or raceway, wiring, junction boxes, and receptacles for *future electric equipment* or appliances are properly labeled and installed, as applicable.
2. Reserved physical space for *future electric equipment* or appliances.
3. Electrical capacity and reserved physical space for circuit breakers in the main electrical service panel are properly labeled.

104.2.4 Final Inspection. The final inspection shall include verification of the installation and proper labeling of all requirements of this code.

104.3 Reinspection. A building shall be reinspected where determined necessary by the *code official*.

104.4 Approved Inspection Agencies. The *code official* is authorized to accept reports of third-party inspection agencies not affiliated with the building design or construction, provided that such agencies are *approved* as to qualifications and reliability relevant to the building components and systems that they are inspecting.

104.5 Inspection Requests. It shall be the duty of the holder of the permit or their duly authorized agent to notify the *code official* when work is ready for inspection. It shall be the duty of the permit holder to provide access to and means for inspections of such work that are required by this code.

104.6 Reinspection and Testing. Where any work or installation does not pass an initial test or inspection, the necessary corrections shall be made to achieve compliance with this code. The work or installation shall then be resubmitted to the *code official* for inspection and testing.

SECTION 105 NOTICE OF APPROVAL.

105.1 Approval. After the prescribed inspections indicate that the work complies in all respects with this code, a notice of approval shall be issued by the *code official*.

105.2 Revocation. The *code official* is authorized to suspend or revoke, in writing, a notice of approval issued under the provisions of this code wherever the certificate is issued in error, or on the basis of incorrect information supplied, or where it is determined that the building or structure, premise, or portion thereof is in violation of any ordinance or regulation or any of the provisions of this code.

SECTION 106 VALIDITY.

106.1 General. If a portion of this code is held to be illegal or void, such a decision shall not affect the validity of the remainder of this code.

SECTION 107 REFERENCED STANDARDS.

107.1 General. The codes and standards referenced in this code shall be listed in Section **107.2**, and such codes and standards shall be considered as part of the requirements of this code to the prescribed extent of each such reference.

107.2 Referenced Codes and Standards. The codes and standards referenced in this code are as follows:

1. International Building Code
    a. Chapter 3
    b. Chapter 11
2. International Energy Conservation Code
3. International Fire Code
4. International Residential Code
5. National Electrical Code Article 625
6. UL2202 and 2594

107.2.1 Conflicts. Where conflicts occur between provisions of this code and referenced codes and standards, the provisions of this code shall apply.

107.2.2 Provisions in Referenced Codes and Standards. Where the extent of the reference to a referenced code or standard includes subject matter that is within the scope of this code, the provisions of this code, as applicable, shall take precedence over the provisions in the referenced code or standard.

107.3 Applications of References. References to chapter or section numbers, or to provisions not specifically identified by number, shall be construed to refer to such chapter, section, or provision of this code.

107.4 Other Laws. The provisions of this code shall not be deemed to nullify any provisions of local, state, or federal law.

SECTION 108 STOP WORK ORDER.

108.1 Authority. Where the *code official* finds any work regulated by this code being performed in a manner contrary to the provisions of this code or in a dangerous or unsafe manner, the *code official* is authorized to issue a stop work order.

108.2 Issuance. The stop work order shall be in writing and shall be given to the owner of the property, the owner's authorized agent, or the person performing the work. Upon issuance of a stop work order, the cited work shall immediately cease. The stop work order shall state the reason for the order and the conditions under which the cited work is authorized to resume.

108.3 Emergencies. Where an emergency exists, the *code official* shall not be required to give a written notice prior to stopping the work.

108.4 Failure to Comply. Any person who shall continue any work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be subject to fines established by Douglas County Building Division.

SECTION 109 BOARD OF APPEALS.

109.1 General. In order to hear and decide appeals of orders, decisions, or determinations made by the *code official* relative to the application and interpretation of this code, there shall be and is hereby created a board of appeals. The *code official* shall be an ex officio member of said board but shall not have a vote on any matter before the board. The board of appeals shall be appointed by the governing body and shall hold office at its pleasure. The board shall adopt rules of procedure for conducting its business and shall render all decisions and findings in writing to the appellant with a duplicate copy to the *code official*.

109.2 Limitations on Authority. An application for appeal shall be based on a claim that the true intent of this code or the rules legally adopted thereunder have been incorrectly interpreted, the provisions of this code do not fully apply or an equally good or better form of construction is proposed. The board shall not have the authority to waive the requirements of this code.

109.3 Qualifications. The board of appeals shall consist of members who are qualified by experience and training and are not employees of Douglas County.

Chapter 2 Definitions

SECTION 201 GENERAL.

201.1 Scope. Unless stated otherwise, the following words and terms in this code shall have the meanings indicated in this chapter.

201.2 Interchangeability. Words used in the present tense include the future; words in the masculine gender include the feminine and neuter; the singular number includes the plural and the plural includes the singular.

201.3 Terms Defined in Other Codes. Terms that are not defined in this code but are defined in the International Building Code, International Fire Code, International Fuel Gas Code, International Mechanical Code, International Plumbing Code, International Energy Conservation Code, or International Residential Code shall have the meanings ascribed to them in those codes.

201.4 Terms not Defined. Terms not defined by this chapter or the codes listed under 201.3 shall have ordinarily accepted meanings such as the context implies.

SECTION 202 GENERAL DEFINITIONS.

ADDITIONS. An increase in occupiable gross floor area of an existing building or structure by more than 50 percent, or any increase in the number of stories or the height of a building or structure.

APPROVED. Acceptable to the *code official*.

APPROVED AGENCY. An established and recognized agency that is regularly engaged in conducting tests or furnishing inspection services, or furnishing product certification, where such agency has been approved by the *code official.*

CODE OFFICIAL. The officer or other designated authority charged with the administration and enforcement of this code, or a duly authorized representative.

COMBUSTION EQUIPMENT. For this code, any equipment or appliance used for spaceheating, service water heating, cooking, clothes drying or lighting that uses *fuel gas* or *fuel oil*.

COMMERCIAL BUILDING. For this code, all commercial buildings and R-Occupancies that are covered by the International Building Code.

CORE AND SHELL. The first phase of a commercial project that has the outer building envelope constructed and may contain interior lighting and heating and has not received a permanent Certificate of Occupancy.

DIRECT CURRENT FAST CHARGER (DCFC) EVSE. Equipment capable of fast charging on a 100A or higher 480VAC three-phase branch circuit. AC power is converted into a controlled DC voltage and current within the *EVSE* that will then directly charge the *electric vehicle*.

ELECTRIC VEHICLE (EV). An automotive-type vehicle for on-road use, including but not limited to, passenger automobiles, buses, trucks, vans, neighborhood electric vehicles, and electric motorcycles, primarily powered by an electric motor that draws current from a building electrical service, *EVSE*, a rechargeable storage battery, a fuel cell, a photovoltaic array, or another source of electric current. Off-

road, self-propelled electric mobile equipment, including but not limited to, industrial trucks, hoists, lifts, transports, golf carts, airline ground support equipment, tractors, and boats are not considered electric vehicles.

ELECTRIC VEHICLE CAPABLE LIGHT SPACE (EV CAPABLE LIGHT SPACE). A designated vehicle parking space that has conduit and/or raceway installed to support future implementation of *electric vehicle* charging installation, and has sufficient physical space adjacent to the existing electrical equipment for future electric upgrades.

ELECTRIC VEHICLE CAPABLE SPACE (EV CAPABLE SPACE). A designated vehicle parking space that has the electric panel capacity and conduit and/or raceway installed to support future implementation of *electric vehicle* charging.

ELECTRIC VEHICLE READY SPACE (EV READY SPACE). A designated vehicle parking space that has the electric panel capacity, raceway wiring, receptacle, and circuit overprotection devices installed to support future implementation of *electrical vehicle* charging.

ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE). An *electric vehicle* charging system or device that is used to provide electricity to a plug-in *electric vehicle* or *plug-in hybrid electric vehicle*, is designed to ensure that a safe connection has been made between the electrical grid and the vehicle, and is able to communicate with the vehicle's control system so that electricity flows at an appropriate voltage and current level.

ELECTRIC VEHICLE SUPPLY EQUIPMENT INSTALLED SPACE (EVSE INSTALLED SPACE). A vehicle parking space that is provided with a dedicated *EVSE* connection.

FIRST TENANT FINISH. The first tenant finish(es) in a new structure or *core and shell* building that is credited towards meeting the requirements of this Chapter.

FUEL GAS. A natural gas, manufactured gas, liquefied petroleum gas, or mixtures of these gasses.

FUEL OIL. Kerosene or any hydrocarbon oil having a flash point of not less than 100°F (38°C).

FUTURE ELECTRIC EQUIPMENT. Equipment or appliances necessary to support future all-electric space and water heating, cooking, or clothes drying.

MAJOR RENOVATIONS. Any alteration, repair, reconstruction, or combination thereof that requires a permit and affects more than 80 percent of the gross floor area of an existing building or structure, as measured within any 12-month period.

PLUG-IN HYBRID ELECTRIC VEHICLE. An *electric vehicle* having a second source of motive power.

RESIDENTIAL BUILDING. For this code, one- and two-family dwellings and townhouses as defined in the International Residential Code.

SOLAR-READY ZONE. A section or sections of the roof or building overhang designated and reserved for future installation of a solar photovoltaic system or solar thermal system.

Chapter 3 Electric Ready

PART 1 RESIDENTIAL ELECTRIC READY

SECTION RE301 SCOPE

RE301.1 General. These provisions shall be applicable for all new buildings, and major renovations and additions.

SECTION RE302 ADDITIONAL ELECTRIC INFRASTRUCTURE

RE302.1 Additional Electric Infrastructure. *Combustion equipment* in *residential buildings* must meet the requirements of Sections **RE302.2** through **RE302.6**.

Exceptions:

1. Interior fireplaces that do not serve as a primary source of heating.
2. Exterior fireplaces and firepits.

RE302.2 Combustion Equipment. *Combustion equipment* shall be provided with all of the following:

1. A dedicated, appropriately phased branch circuit sized to accommodate *future electric equipment* or appliances to serve a comparable capacity to meet the heating load.
2. An electric receptacle or junction box that meets the requirements of Section **RE302.5**, and is connected to the electrical panel through the branch circuit. Each electrical receptacle or junction box shall have reasonable access to the *combustion equipment* or dedicated physical space for *future electric equipment* with no obstructions other than the current *combustion equipment*.

3. Where *combustion equipment* is used for space or water heating, dedicated physical space shall be provided for *future electric equipment,* including an electric resistance backup coil for ducted systems, if applicable.

   Exception: Dwelling units with installed air conditioning systems are not required to provide additional dedicated physical space for an outdoor heat pump.

RE302.3 Electrical Panel Space. The electrical panel shall have a reserved space for a minimum two-pole circuit breaker for each branch circuit provided for *future electric equipment* or appliances.

RE302.4 Labeling. The junction box or receptacle and the dedicated circuit breaker space serving *future electric equipment* or appliances in the electrical panel shall be labeled for their intended use.

RE302.5 Adjacency. The electrical receptacle or junction box must be provided within 3 feet of the *combustion equipment* or appliances, or within 3 feet of the dedicated physical space for *future electric equipment* or appliances.

Exception: For *combustion equipment* dedicated to space or water heating, the electrical receptacle or junction box shall be located not more than 6 feet from the *combustion equipment* or the dedicated physical space for *future electric equipment*.

RE302.6 Condensate Drain. Where *combustion equipment* for space heating and water heating is installed, a location shall be provided for condensate drainage.

PART 2 COMMERCIAL ELECTRIC READY

SECTION CE301 SCOPE

CE301.1 General. These provisions shall be applicable for all new buildings, additions, and *first tenant finish* permits.

CE301.1.1 First Tenant Finishes. In the case that a *first tenant finish* to a commercial *core and shell* building or unfinished space is credited towards meeting the requirements of this Chapter, the *code official* shall not issue a Certificate of Occupancy to the tenant until the requirements of Section **CE302** are met.

SECTION CE302 ADDITIONAL ELECTRIC INFRASTRUCTURE

CE302.1 Additional Electric Infrastructure. *Combustion equipment* in *commercial buildings* shall meet the electric infrastructure requirements of Sections **CE302.2** or **CE302.3**.

Exceptions:

1. Interior fireplaces that do not serve as a primary source of heating.
2. Exterior fireplaces and fire pits.
3. Additions to buildings that do not provide new space-heating equipment will not be required to provide additional electrical infrastructure to the existing space-heating equipment.

CE302.2 Commercial Buildings Less than 10,000 sq. ft. and all R-Occupancies. *Commercial buildings* that have a gross floor area of less than 10,000 sq. ft., and all Roccupancies of any size, shall comply with Sections **CE302.2.1** through **CE302.2.5**.

CE302.2.1 Combustion Equipment. *Combustion equipment* shall be provided with all of the following:

1. A dedicated, appropriately phased branch circuit sized to accommodate *future electric equipment* or appliances to serve a comparable capacity to meet the heating load.

2. An electric receptacle or junction box that meets the requirements of Section **CE302.2.5**, and is connected to the electrical panel through the branch circuit. Each electrical receptacle or junction box shall have reasonable access to the *combustion equipment* or dedicated physical space for *future electric equipment* with no obstructions other than the current *combustion equipment*.

3. Where *combustion equipment* is used for space or water heating, dedicated space shall be provided for all *future electric equipment*, including an electric resistance backup coil for ducted systems if applicable.

   Exception: Buildings with installed air conditioning systems are not required to provide additional dedicated physical space for an outdoor heat pump.

CE302.2.2 Electrical Panel Space. The electrical panel shall have reserved physical space for a minimum two-pole or three-pole circuit breaker for each branch circuit provided for *future electric equipment* or appliances. The physical space in the electrical panel for each circuit breaker shall

be sized with sufficient breaker capacity to meet the electrical demand of the *future electric equipment* or appliance that is sized to serve a comparable capacity to meet the heating load.

CE302.2.3 Labeling. The junction box or receptacle and the dedicated circuit breaker space serving *future electric equipment* or appliances in the electrical panel shall be labeled for their intended use.

CE302.2.4 Adjacency. The electrical receptacle or junction box must be provided within 3 feet of the *combustion equipment* or appliances or within 3 feet of the dedicated physical space for *future electric equipment* or appliances.

> **Exception:** For *combustion equipment* dedicated to space or water heating, the electrical receptacle or junction box shall be located not more than 6 feet from the *combustion equipment* or the dedicated physical space for *future electric equipment*.

CE302.2.5 Condensate Drain. Where *combustion equipment* dedicated to space heating and water heating is installed, a location shall be provided for condensate drainage.

CE302.3 Commercial Buildings 10,000 sq. ft. or Greater. All *commercial buildings* that have a gross floor area of 10,000 sq. ft. or greater shall comply with the following requirements.

Exception: R-occupancies.

CE302.3.1 Combustion Equipment or Appliances. All *combustion equipment* shall be provided with the following:

1. A junction box that is located in the same physical space as the *combustion equipment* and is reasonably accessible, and that is connected to the electrical panel by continuous conduit and/or raceways.
2. Dedicated electrical panel space for an appropriately phased branch circuit sized to accommodate *future electric equipment* or appliances to serve a comparable capacity to meet the heating load.
3. Where *combustion equipment* is used for space and water heating, dedicated physical space shall be provided for all *future electric equipment*.

CE302.3.2 Electrical Panel Space. The electrical panel shall have reserved physical space for a minimum two-pole or three-pole circuit breaker for each branch circuit provided for *future electric equipment* or appliances. The physical space in the electrical panel for each circuit breaker shall

be sized with sufficient breaker capacity to meet the electrical demand of the *future electric equipment* or appliance that is sized to serve a comparable capacity to meet the heating load.

CE302.3.3 Labeling. The dedicated circuit breaker space serving *future electric equipment* or appliances in the electrical panel shall be labeled ”For future electric equipment”.

CE302.3.4 Physical Space. Dedicated physical space shall be provided for additional electric equipment, including but not limited to transformers and cabinets, necessary for electrical service to *future electric equipment* or appliances.

Chapter 4 Solar Ready

PART 1 RESIDENTIAL SOLAR READY.

SECTION RS401 SCOPE.

RS401.1 General. These provisions shall be applicable for new buildings, and major renovations and additions.

SECTION RS402 SOLAR READY ZONE.

RS402.1 General. New *residential buildings* with not less than 600 square feet of roof area oriented between 110 degrees and 270 degrees of true north or that is a lowsloped roof, shall comply with Sections **RS402.2** through **RS402.8**.

Exceptions:

1. New residential dwelling units with a permanently installed on-site renewable energy system that provides electricity to the dwelling unit’s electrical system.
2. A building where all areas of the roof that would otherwise meet the requirements of Section **RS402** are in full or partial shade for more than 70 percent of daylight hours annually.

RS402.2 Construction Document Requirements for Solar-Ready Zone. Construction documents shall indicate the *solar-ready zone*.

RS402.3 Solar-Ready Zone Areas. The total *solar-ready zone* area for each dwelling unit shall be not less than 300 square feet exclusive of mandatory access or setback areas as required by the International Fire

Code. The *solar-ready zone* shall be composed of areas not less than 5 feet in width and not less than 80 square feet exclusive of access or setback areas as required by the International Fire Code.

> **Exception**: New townhouses three stories or less in height above grade plane and with a total floor area less than or equal to 2,000 square feet of conditioned space per townhouse unit shall have a *solar-ready zone* area of not less than 150 square feet.

RS402.4 Obstructions. *Solar-ready zones* shall be free from obstructions, including but not limited to, vents, chimneys, and roof-mounted equipment.

RS402.5 Shading. The *solar-ready zone* shall be set back from any existing or new permanently affixed object on the building or site that is located south, east, or west of the *solar-ready zone* a distance not less than two times the object's height above the nearest point on the roof surface. Such objects include, but are not limited to, taller portions of the building itself, parapets, chimneys, antennas, signage, rooftop equipment, trees, and roof plantings either existing at the time of permit application or planned for on the construction documents.

RS402.6 Roof Load Documentation. The structural design loads of roof dead load and roof live load shall be clearly indicated on the construction documents.

RS402.7 Interconnection Pathway. Construction documents shall indicate at least one potential pathway for routing of conduit and/or raceway from the *solar-ready zone* to the electrical service panel and shall be labeled as "Potential Pathway" on the construction documents.

RS402.8 Electrical Service Reserved Space. The main electrical service panel shall have sufficient reserved space to allow the installation of a dual pole circuit breaker for future solar electric installation and shall be labeled "For Future Solar Electric." The reserved space shall be positioned at the opposite (load) end from the input feeder location or main circuit location.

RS402.9 Construction Documentation Certificate. A permanent certificate, indicating the *solar-ready zone* and other requirements of this Part, shall be posted near the electrical distribution panel, water heater, or other conspicuous location.

PART 2 COMMERCIAL SOLAR READY

SECTION CS401 SCOPE

CS401.1 General. These provisions shall be applicable for new buildings, and major renovations and additions.

SECTION CS402 SOLAR-READY ZONE

CS402.1 General. A *solar-ready zone* shall be located on the roof of all new *commercial buildings* that are oriented between 110 and 270 degrees of true north or have low-sloped roofs. *Solar-ready zones* shall comply with Sections **CS402.2** through **CS402.7**.

Exceptions:

1. A building with a permanently-installed, on-site renewable energy system that meets the following criteria.
    a. The system produces the energy output equivalent to covering 40 percent of the net roof area with solar photovoltaic calculated as the horizontally projected gross roof area less the area covered by skylights, occupied roof decks, vegetative roof areas, and mandatory access or set back areas as required by the International Fire Code.
    b. The system is located on the roof or overhang of the building or on the roof or overhang of another structure located within 250 feet of the building, on the building premises, on covered parking, or another *approved* location installed with the building project and under the same property ownership.
2. A building with a *solar-ready zone* that is shaded for more than 70 percent of daylight hours annually.
3. A building where a licensed design professional certifies that the incident solar radiation available to the building is not suitable for a *solar-ready zone*.
4. A building where a licensed design professional certifies that the *solarready zone* area required by Section **CS402.3** cannot be met because of extensive rooftop equipment, skylights, vegetative roof areas, or other obstructions.

CS402.2 Construction Document Requirements for a Solar-Ready Zone. Construction documents shall indicate the *solar-ready zone*.

CS402.3 Solar-Ready Zone Area. The total *solar-ready zone* area shall not be less than 40 percent of the roof area calculated as the horizontally projected gross roof area less the area covered by skylights, occupied roof decks, vegetative roof areas, and mandatory access or set back areas as required by the

International Fire Code. The *solar-ready zone* shall be a single area or smaller, separated sub-zone areas. Each sub-zone area shall be not less than 5 feet in width in the narrowest dimension.

The *solar-ready zone* shall be located on the roof or overhang of the building or on the roof or overhang of another structure located within 250 feet of the building, on the building premises, on covered parking, or another *approved* location installed with the building project and under the same property ownership .

CS402.4 Obstructions. *Solar-ready zones* shall be free from obstructions, including pipes, vents, ducts, HVAC equipment, skylights, and roof-mounted equipment.

CS402.5 Roof Loads and Documentation. The structural design loads for roof dead load and roof live load shall be indicated on the construction documents.

CS402.6 Interconnection Pathway. Construction documents shall indicate at least one potential pathway for routing of conduit and/or raceway from the *solar-ready zone* to an electrical service panel and shall be labeled as “Potential Pathway” on the construction documents.

CS402.7 Electrical Service Reserved Space. The main electrical service panel shall have a minimum bus bar rating of not less than 200 amps. The main electrical service panel shall have a reserved space to allow installation of a dual-pole circuit breaker for future solar electric. This space shall be labeled “For Future Solar Electric.” The reserved space shall be positioned at the end of the panel that is opposite from the panel supply conductor connection.

PART 3 RESIDENTIAL SOLAR PANEL CAPACITY

SECTION RS410 SCOPE

RS410.1 General. These provisions shall be applicable for all new buildings, and major renovations and additions.

RS410.2 Electric Service Reserved Space. The main electrical service panel shall have sufficient reserved space to allow installation of a dual pole circuit breaker for future solar electric installation and shall be labeled “For Future Solar Electric.” The reserved space shall be positioned at the opposite (load) end from the input feeder location or main circuit location.

Exception: A dwelling unit that already must comply with the solar ready provisions in Chapter 4 or that has a permanently installed on-site renewable energy system that provides electricity to the dwelling unit's electrical system.

PART 4 COMMERCIAL SOLAR PANEL CAPACITY

SECTION CS410 SCOPE

CS410.1 General. These provisions shall be applicable for new buildings, and major renovations and additions.

CS410.2 Electric Service Reserved Space. The main electrical service panel shall have a minimum bus bar rating of not less than 200 amps. The main electrical service panel shall have sufficient reserved space to allow installation of a dual pole circuit breaker for future solar electric installation and shall be labeled "For Future Solar Electric." The reserved space shall be positioned at the opposite (load) end from the input feeder location or main circuit location.

Exception: A building that already must comply with the solar ready provisions in Chapter 4 or that has a permanently installed on-site renewable energy system that provides electricity to the building's electrical system.

Chapter 5 Electric Vehicle Ready

PART 1 RESIDENTIAL ELECTRIC VEHICLE READY

SECTION RV501 SCOPE

RV501.1 General. These provisions shall be applicable for all new buildings, and major renovations and additions.

SECTION RV502 ELECTRIC VEHICLE POWER TRANSFER INFRASTRUCTURE

RV502 Electric Vehicle Power Transfer Infrastructure. New vehicle parking spaces for *residential buildings* shall be provided in accordance with Sections **RV502.1** and **RV502.3**.

RV502.1 One- and Two-family Dwellings and Townhouses. Each dwelling unit with a dedicated attached or detached garage or other onsite designated parking provided for the dwelling unit shall be provided with one *EV ready space* per dwelling unit.

RV502.2 EV Ready Spaces. Each *EV ready space* shall have a branch circuit that complies with all of the following:

1. Terminates at a receptacle, located within 3 feet of each *EV ready space* it serves. *EV ready* includes two adjacent parking spaces if the receptacle for the electrical facilities of this section is installed adjacent to and between both parking spaces.
2. Has a minimum circuit capacity of 8.3 kVA (40A 208/240V).
3. The electrical panel, electrical distribution equipment directory, and all outlets or enclosures shall be marked "For future electric vehicle supply equipment".

Exception: A receptacle need not be provided if a hard-wired *EVSE* is installed.

RV502.3 Identification. Construction documents shall designate the *EV ready space* and indicate the locations of raceway and/or conduit and the termination points serving them. The circuits or spaces reserved in the electrical panel for *EV ready spaces* shall be clearly identified in the panel or subpanel directory.

PART 2 COMMERCIAL ELECTRIC VEHICLE READY

SECTION CV501 SCOPE

CV501.1 General. These provisions shall be applicable for all new buildings, and major renovations and additions.

SECTION CV502 ELECTRIC VEHICLE POWER TRANSFER INFRASTRUCTURE

CV502 Electric Vehicle Power Transfer Infrastructure. Where new parking is provided for *commercial buildings,* it shall be provided with *electric vehicle* power transfer infrastructure in compliance with Sections **CV502.1** through **CV502.9**.

CV502.1 Quantity. The number of required *EVSE installed spaces, EV ready spaces, EV capable spaces,* and *EV capable light spaces* shall be determined in accordance with this Section and **Table CV502.1** based on the total number of provided vehicle parking spaces and shall be rounded up to the nearest whole number. This includes all covered parking under carports or detached garages.

CV502.1.1 Where more than one parking lot is provided on a building site, the number of provided vehicle parking spaces required to have *EV* power transfer infrastructure shall be calculated separately for each parking lot.

CV502.1.1.1 R-2 Occupancies, as defined in Chapter 3 of the International Building Code, shall use the total parking requirement for the entire development to determine the *EV* power transfer infrastructure requirements using **Table CV502.1**.

CV502.1.2 For *commercial buildings* that install a *DCFC EVSE,* each *DCFC EVSE* installed shall be permitted to be substituted for other space types as follows:

1. *Commercial buildings* other than R-2 Occupancies shall be permitted to substitute up to 10 spaces when the building provides a minimum of 20 percent of parking spaces as a combination of *EV Capable*, *EV ready*, or *EVSE installed spaces*.
2. R-2 Occupancies shall be permitted to substitute up to 5 spaces when the building provides a minimum of 60 percent of parking spaces as a combination of *EV Capable light, EV Capable, EV ready*, or *EVSE installed spaces*.

CV502.1.3 *EVSE installed spaces* that exceed the minimum requirements of this section are permitted to be used to meet minimum requirements for *EV ready spaces*, *EV capable spaces*, and *EV capable light spaces*.

CV502.1.4 E*V ready spaces* that exceed the minimum requirements of this section are permitted to be used to meet minimum requirements for *EV capable spaces* and *EV capable light spaces*.

CV502.1.5 *EV capable spaces* that exceed the minimum requirements of this section are permitted to be used to meet the minimum requirements for *EV capable light spaces*.

CV502.1.6 All attached garages with direct connection to a dwelling unit will be required to have one *EV ready space*.

Table CV502.1: EV Power Transfer Infrastructure Requirements

Building Type / Space Type	*EVSE Installed Space*	*EV Ready Space*	*EV Capable Space*	*EV Capable Light Space*
All *commercial buildings*, except for R-2 occupancies, with 10 or less parking spaces.	0	2 spaces	0	0

***Commercial buildings*, except for R-2 occupancies, with greater than 10 parking spaces.**	2% of spaces	8% of spaces	10% of spaces	10% of spaces
R-2 occupancies with 10 or less parking spaces	0	15% of spaces	10% of spaces	10% of spaces
R-2 occupancies with greater than 10 parking spaces.	5% of spaces	15% of spaces	10% of spaces	30% of spaces

CV502.2 EV Capable Light Spaces. Each *EV capable light space* shall comply with all of the following:

1. A continuous raceway and/or conduit shall be installed between a suitable electrical panel or other electrical distribution equipment and terminate within 3 feet of the *EV capable light space* and shall be capped. *EV capable light* includes two adjacent parking spaces if the raceway and/or conduit terminates adjacent to and between both parking spaces.
2. Installed raceway and/or conduit shall be sized and rated to supply a minimum of 208 volts and a minimum of 40-ampere rated circuits.
3. Dedicated physical space to accommodate all equipment necessary for electrical service to future *EVSE*.
4. The routing of the raceway and/or conduit must be noted on the construction documents and the raceway shall be permanently and visibly marked “EV CAPABLE” at the load center and termination point locations.

CV502.3 EV Capable Spaces. Each *EV capable space* shall comply with all of the following:

1. A continuous raceway and/or conduit shall be installed between a suitable electrical panel or other electrical distribution equipment and terminate within 3 feet of the *EV capable space* and shall be capped. *EV capable* includes two adjacent parking spaces if the raceway and/or conduit terminates adjacent to and between both parking spaces.

2. The installed raceway and/or conduit shall be sized and rated to supply a minimum of 208 volts and a minimum of 40-ampere rated circuits.
3. The electrical panel or other electrical distribution equipment to which the raceway and/or conduit connects shall have sufficient dedicated space and spare electrical capacity to supply a minimum of 208 volts and a minimum of 40-ampere rated circuits.
4. The termination point of the conduit and/or raceway and the electrical distribution equipment directory shall be marked: "For future electric vehicle supply equipment (EVSE)."
5. Reserved capacity shall be no less than 8.3 kVA (40A 208/240V) for each *EV capable space*.

CV502.4 EV Ready Spaces. Each *EV ready space* shall have a branch circuit that complies with all of the following:

1. Terminates at a receptacle or junction box located within 3 feet of each *EV ready space* it serves. *EV ready* includes two adjacent parking spaces if the receptacle is installed adjacent to and between both parking spaces.
2. Has a minimum circuit capacity of 8.3 kVA (40A 208/240V).
3. The electrical panel, electrical distribution equipment directory, and all outlets or enclosures shall be marked "For future electric vehicle supply equipment (EVSE)."

CV502.5 Electric Vehicle Supply Equipment (EVSE). All *EVSE* shall meet all of the following requirements:

1. The installed *EVSE* shall meet one of the following requirements:
   a. A power capacity of at least 6.2 kVa (or 30A at 208/240V) and has the ability to connect to the internet.
   b. An inductive charging system for battery-powered *electric vehicles* that:
      i. Is ENERGY STAR certified; and
      ii. Has the ability to connect to the internet.
2. An *electric vehicle* charging system shall be wall-mounted or pedestal style and may provide multiple cords to connect with *electric vehicles*.
3. An *electric vehicle* charging system shall be listed and labeled for *EV* charging and must comply with the current version of Article 625 of the National Electrical Code.

CV502.6 EVSE Installed Spaces. An installed *EVSE* with multiple output connections shall be permitted to serve multiple *EVSE installed spaces*. Each *EVSE* installed serving either a single *EVSE installed space* or multiple *EVSE installed spaces*, shall comply with all of the following:

1. Have a minimum charging rate in accordance with Section **CV502.7**.

2. Be located within 3 feet of each *EVSE installed space* it serves.
3. Be installed in accordance with Section **CV502.8**.
4. Have a minimum circuit capacity of 8.3 kVA (40A 208/240V).
5. Must meet the requirements of Section **CV502.5**.

CV502.7 EVSE Minimum Charging Rate. Each installed *EVSE* shall comply with one of the following:

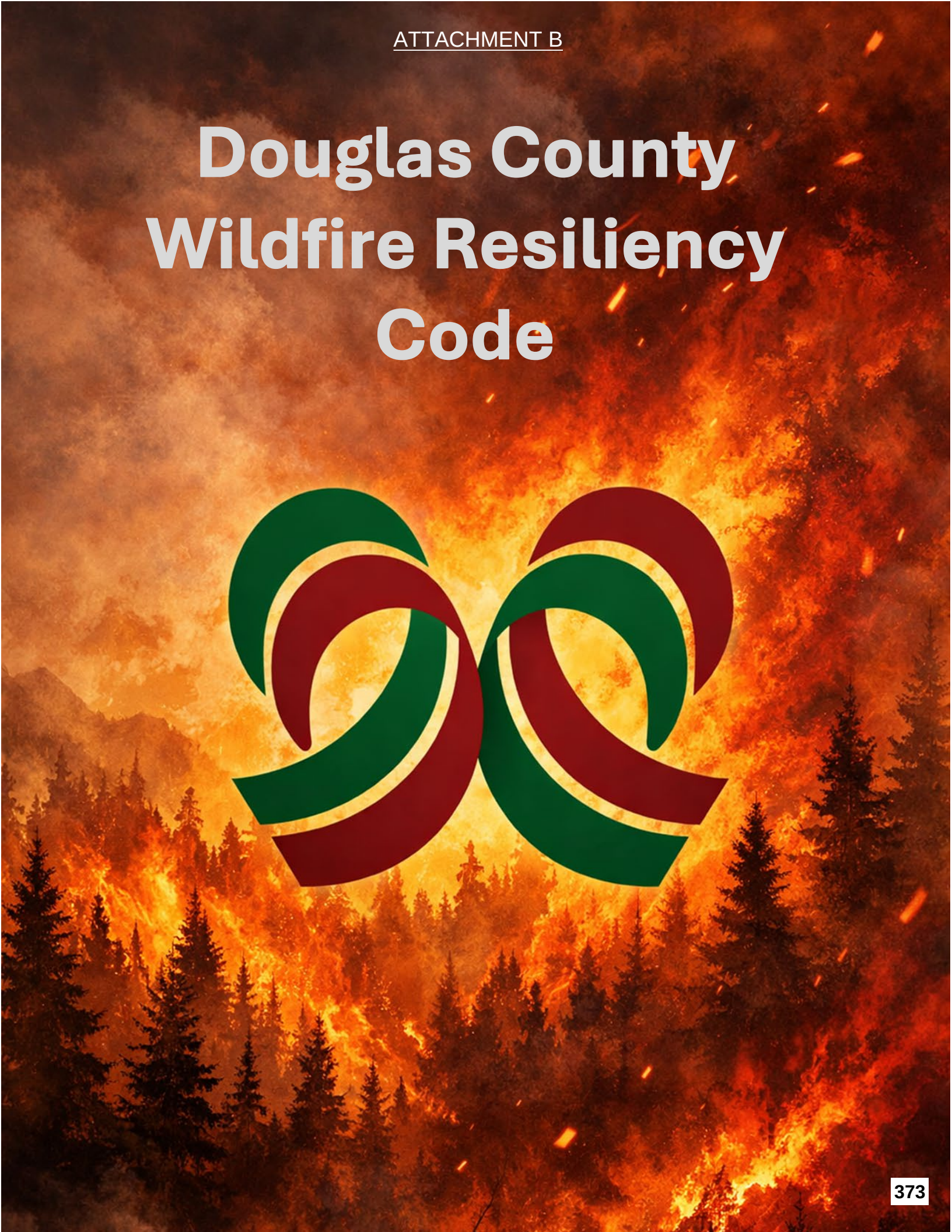
1. Be capable of charging at a minimum rate of 6.2 kVA (or 30A at 208/240V).
2. When serving multiple *EVSE installed spaces* and controlled by an energy management system providing load management, be capable of simultaneously sharing each *EVSE installed space* at a minimum charging rate of no less than 3.3 kVA.

CV502.8 EVSE Installation. *EVSE* shall be installed in accordance with NFPA 70 and shall be listed and labeled in accordance with UL 2202 or UL 2594. When serving an accessible parking space, *EVSE* shall be accessible in accordance with the International Building Code Chapter 11.

CV502.9 Identification. Construction documents shall designate all *EVSE installed spaces, EV ready spaces, EV capable spaces,* and *EV capable light spaces,* and indicate the locations of raceway and/or conduit and termination points serving them. The circuits or spaces reserved for *EVSE installed spaces, EV ready spaces,* and *EV capable spaces* shall be clearly identified in the panel or subpanel directory. The raceway and/or conduit for *EV ready spaces, EV capable spaces* and *EV capable light spaces* shall be clearly identified at both the panel or subpanel and the termination point at the parking space.

ATTACHMENT B

Douglas County Wildfire Resiliency Code



ATTRIBUTIONS

This Code is comprised of a majority of the 2025 Colorado Wildfire Resiliency Code adopted by the Colorado Wildfire Resiliency Code Board.

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Chapter 1 - Scope and Administration

PART 1 GENERAL PROVISIONS

SECTION 101 SCOPE AND GENERAL REQUIREMENTS

101.1 Title. These regulations shall be known as the Douglas County Wildfire Resiliency Code as adopted by Douglas County, hereinafter referred to as "this code."

101.2 Scope. The provisions of this code shall apply to the construction, alteration, movement, repair, maintenance and use of any building, structure or premises that contain *occupiable* and/or *habitable space*, or change in use resulting in an occupiable and/or habitable space, unless excepted, within the *wildland-urban interface* areas of Douglas County that are outside the corporate limits of a city or town and outside the boundaries of a fire protection district. Buildings or conditions in existence at the time of the adoption of this code are allowed to have their use or occupancy continued, if such condition, use or occupancy was legal at the time of the adoption of this code, provided that such continued use does not constitute a distinct danger to life or property. Buildings or structures moved into or within the *wildland-urban interface* areas of Douglas County, unless excepted, that are outside the corporate limits of a city or town and outside the boundaries of a fire protection district shall comply with the provisions of this code for new buildings or structures.

101.2.1 Appendices. Nonapplicable. None adopted.

101.2.2 Factory-Built Structures (nonresidential, residential, and tiny homes). Structure hardening provisions of this code for factory-built structures as defined by sections 24-32-3302(9), (10), (11), and (35), C.R.S., are in accordance with Rules adopted by the Division of Housing in 8 CCR 1302-1, Rule 2 Codes and Standards.

101.2.3 HUD Code Homes. Homes built to the HUD Manufactured Home Construction and Safety Standards are exempt from structure hardening requirements on their first installation. Homes built to the HUD Manufactured Home Construction and Safety Standards which are moved into an applicable Wildfire Resiliency code area are subject to the provisions of this code as required by the authority having jurisdiction.

101.3 Purpose. The purpose of this code is to establish minimum regulations for the safeguarding of life and for property protection. Regulations in this code are intended to mitigate the risk to life and structures from intrusion of fire from wildland fire exposures and fire exposures from adjacent structures and to mitigate structure fires from spreading to wildland fuels. The extent of this regulation is intended to be tiered commensurate with the relative level of hazard present.

The unrestricted use of property in *wildland-urban interface* areas is a potential threat to life and property from fire and resulting erosion. Safeguards to prevent the occurrence of fires and to provide adequate fire protection facilities to control the spread of fire in *wildland-urban interface* areas shall be in accordance with this code.

This code shall supplement Douglas County's building and fire codes, if such codes have been adopted, to provide for special regulations to mitigate the fire- and life-safety hazards of the

wildland-urban interface areas.

101.4 Retroactivity. The provisions of the code shall apply to conditions arising after the adoption thereof, conditions not legally in existence at the adoption of this code and conditions that, in the opinion of the *code official*, constitute a distinct hazard to life or property.

Exception: Provisions of this code that specifically apply to existing conditions are retroactive.

101.5 Additions or alterations. Additions or alterations shall be permitted to be made to any building or structure without requiring the existing building or structure to comply with all of the requirements of this code, provided that, when the work increases the footprint of the existing structure by 500 square feet or greater, the addition or alteration conforms to that required for a new building or structure.

Exception: Provisions of this code that specifically apply to existing conditions are retroactive.

Additions or alterations shall not be made to an existing building or structure that will cause the existing building or structure to be in violation of any of the provisions of this code nor shall such additions or alterations cause the existing building or structure to become unsafe. An unsafe condition shall be deemed to have been created if an addition or alteration will cause the existing building or structure to become structurally unsafe or overloaded; will not provide adequate access in compliance with the provisions of this code or will obstruct existing exits or access; will create a fire hazard; will reduce required fire resistance or will otherwise create conditions dangerous to human life.

101.6 Roof coverings. The *roof covering* on buildings or structures in existence prior to adoption of this code that are replaced or have 25 percent or more of the surface area of the roof replaced, or where work to reconstruct, alter, or repair the *roof covering* effectively replaces such material, shall require the entirety of the *roof covering* to be replaced with a *roof covering* required for new construction specified in Sections 403.2 through 403.2.2.

Exception: Existing *roof coverings* that are compliant with Section 403.2.

101.7 Exterior walls. The exterior walls of building or structures in existence prior to adoption of this code where 25 percent or more of the total exterior wall surface area is replaced, or where work to reconstruct, alter or repair the exterior walls effectively replaces the exterior wall material, shall require the entirety of the exterior wall surface area, including attachments, to be replaced with materials required for new construction specified in Section 404.3 through 404.3.2 and the immediate zone within 5 feet of the structure shall be made to comply with Section 503.1.

Exception: Existing exterior walls that are compliant with Section 404.3.

101.8 Maintenance. Buildings, structures, landscape materials, vegetation, *defensible space* or other devices or safeguards required by this code shall be maintained in conformance to the code edition under which installed. The owner or the owner's authorized agent shall be responsible for the maintenance of buildings, structures, landscape materials and vegetation.

SECTION 102—APPLICABILITY

102.1 General. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall govern. Where, in any specific case, different sections of this code, or any other adopted code, specify different materials, methods of construction or other requirements, the most restrictive shall govern.

102.2 Other laws. The provisions of this code shall not be deemed to nullify any provisions of local, state or federal law.

102.3 Application of references. References to chapter or section numbers, or to provisions not specifically identified by number, shall be construed to refer to such chapter, section or provision of this code.

102.4 Referenced codes and standards. The codes and standards referenced in this code are listed throughout this code. Such codes and standards shall be considered as part of the requirements of this code to the prescribed extent of each such reference and as further regulated in Sections 102.4.1 and 102.4.2.

102.4.1 Conflicts. Where conflicts occur between provisions of this code and the referenced codes and standards, the provisions of this code shall govern.

102.4.2 Provisions in referenced codes and standards. Where the extent of the reference to a referenced code or standard includes subject matter that is within the scope of this code, the provisions of this code, as applicable, shall take precedence over the provisions in the referenced standard.

102.5 Subjects not regulated by this code. Where applicable standards or requirements are not set forth in this code, or are contained within other laws, codes, regulations, ordinances or policies adopted by Douglas County, compliance with applicable standards of other nationally recognized safety standards, as *approved*, shall be deemed as prima facie evidence of compliance with the intent of this code. Nothing herein shall derogate from the authority of the *code official* to determine compliance with codes or standards for those activities or installations within Douglas County.

102.6 Matters not provided for. Requirements that are essential for the public safety of an existing or proposed activity, building or structure, or for the safety of the occupants thereof, which are not specifically provided for by this code, shall be determined by the *code official* consistent with the necessity to establish the minimum requirements to safeguard the public health, safety and general welfare.

102.7 Partial invalidity. In the event that any part or provision of this code is held to be illegal or void, this shall not have the effect of making void or illegal any of the other parts or provisions.

102.8 Existing conditions. The legal occupancy or use of any structure or condition existing on the date of adoption of this code shall be permitted to continue without change, except as is specifically covered in this code, the *Internation Building Code*, *International Residential Code*, *International Fire Code*, or as is deemed necessary by the *code official* for the general safety and welfare of the occupants and the public.

102.9 Historic structures. A variance is authorized to be issued for the repair or rehabilitation of a historic structure or construction of a contributing structure upon a determination that the

proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure, and the variance is the minimum necessary to preserve the historic character and design of the structure, within the spirit of this code.

Exception: Within wildfire hazard areas, historic structures that do not meet one or more of the following designations:

1. Listed or preliminarily determined to be eligible for listing in the National Register of Historic Places.
2. Determined as contributing to the historical significance of a registered historic district or a district preliminarily determined to qualify as an historic district.
3. Designated as historic under a state or local historic preservation program.

102.9.1 Historic preservation exemption. Douglas County may establish a historic preservation exemption or exemptions in their jurisdiction that consists of the spirit and intent of this code.

102.10 Work exempt from permit under this code. Exemptions from code requirements shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this code or any other laws or ordinances of Douglas County. Compliance with this code shall not be required for the following:

1. Interior alterations of existing structures.
2. Additions that do not increase the footprint of a structure by more than 500 square feet.
3. The reconstruction, replacement, alteration, or repair of the exterior walls of an existing building, when less than 25 percent of the surface area of all exterior walls is affected.
4. The reconstruction, replacement, alteration, or repair of the exterior *roof covering* of an existing building, when less than 25 percent of the surface area of the exterior *roof covering* or an attachment thereto is affected.
5. Alterations or repairs to the exterior of an existing structure, or an attachment to it, when less than twenty-five percent of the exterior of the structure is affected by the alteration or repair.
6. Painting, staining and similar maintenance or restorative work.
7. One-story detached accessory, nonhabitable structures, such as tool and storage sheds, playhouses and similar uses, provided that the floor area does not exceed 120 square feet and the structure is located greater than or equal to 10 feet from the nearest adjacent occupiable structure.
8. *Accessory structures* and buildings of an accessory character classified as Utility and Miscellaneous Group U (including Agricultural Structures) located more than 50 feet from a structure containing *occupiable* or *habitable space*.
9. Fences located more than 8 feet from a habitable structure.
10. Any thirty-five acre parcel with only one residential structure on it that does not abut a residential or commercial area.

PART 2—ADMINISTRATION AND ENFORCEMENT

SECTION 103—CODE COMPLIANCE AGENCY

103.1 Creation of agency. The Douglas County Building Division is hereby the agency responsible

and the official in charge thereof shall be known as the *code official*. The function of the agency shall be the implementation, administration and enforcement of the provisions of this code.

103.2 Appointment. The *code official* shall be the Douglas County Chief Building Official.

103.3 Deputies. In accordance with the prescribed procedures of Douglas County, the *code official* shall have the authority to appoint a deputy *code official*, other related technical officers, inspectors and other employees. Such employees shall have powers as delegated by the *code official*.

SECTION 104—DUTIES AND POWERS OF THE CODE OFFICIAL

104.1 Powers and duties of the code official. The *code official* is hereby authorized to enforce the provisions of this code.

104.2 Determination of compliance. The *code official* shall have the authority to determine compliance with this code, to render interpretations of this code and to adopt policies and procedures in order to clarify the application of its provisions. Such interpretations, policies and procedures:

1. Shall be in compliance with the intent and purpose of this code.
2. Shall not have the effect of waiving requirements specifically provided for in this code.

104.2.1 Technical assistance. To determine compliance with this code, the *code official* is authorized to require the owner, the owner's authorized agent or the person in possession or control of the building or premises to provide a technical opinion and report.

104.2.1.1 Costs. A technical opinion and report shall be provided without charge to Douglas County.

104.2.1.2 Preparer qualifications. The technical opinion and report shall be prepared by a qualified engineer, specialist, laboratory or fire safety specialty organization acceptable to the *code official*. The *code official* is authorized to require design submittals to be prepared by, and bear the stamp of, a registered design professional.

104.2.1.3 Content. The technical opinion and report shall analyze the properties of the design, operation or use of the building or premises, the facilities and appurtenances situated thereon and fuel management to identify and propose necessary recommendations.

104.2.1.4 Tests. Where there is insufficient evidence of compliance with the provisions of this code, the *code official* shall have the authority to require tests as evidence of compliance. Test methods shall be as specified in this code or by other recognized test standards. In the absence of recognized test standards, the *code official* shall approve the testing procedures. Such tests shall be performed by a party acceptable to the *code official*.

104.2.2 Alternative materials, design and methods. The provisions of this code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by this code, provided that any such alternative has been *approved*.

104.2.2.1 Approval authority. An alternative material, design or method shall be *approved* where the *code official* finds that the proposed alternative is satisfactory and complies with Sections 104.2.2.2 through 104.2.2.7, as applicable.

104.2.2.2 Application and disposition. Where required, a request to use an alternative material, design or method of construction shall be submitted in writing to the *code official* for approval. Where the alternative material, design or method of construction is not approved, the *code official* shall respond in writing, stating the reasons the alternative was not approved.

104.2.2.3 Compliance with code intent. An alternative material, design or method of construction shall comply with the intent of the provisions of this code.

104.2.2.4 Equivalency criteria. An alternative material, design or method of construction shall, for the purpose intended, be not less than the equivalent of that prescribed in this code with respect to all of the following, as applicable:

1. Quality.
2. Strength.
3. Effectiveness.
4. Durability.
5. Safety, other than fire safety.
6. Fire safety.

104.2.2.5 Tests. Tests conducted to demonstrate equivalency in support of an alternative material, design or method of construction application shall be of a scale that is sufficient to predict performance of the end use configuration. Tests shall be performed by a party acceptable to the *code official.*

104.2.2.5.1 Fire tests. Tests conducted to demonstrate equivalent fire safety in support of an alternative material, design or method of construction application shall be of a scale that is sufficient to predict fire safety performance of the end use configuration. Tests shall be performed by a party acceptable to the *code official*.

104.2.2.6 Reports. Supporting data, where necessary to assist in the approval of materials or assemblies not specifically provided for in this code, shall comply with Sections 104.2.2.6.1 and 104.2.2.6.2.

104.2.2.6.1 Evaluation reports. Evaluation reports shall be issued by an *approved* agency and use of the evaluation report shall require approval by the *code official* for the installation. The alternate material, design or method of construction and product evaluated shall be within the scope of the *code official*'s recognition of the *approved* agency. Criteria used for the evaluation shall be identified within the report and, where required, provided to the *code official*.

104.2.2.6.2 Other reports. Reports not complying with Section 104.2.2.6.1 shall describe criteria, including but not limited to any referenced testing or analysis, used to determine compliance with code intent and justify code equivalence. The report shall be prepared by a qualified engineer, specialist, laboratory or fire safety

specialty organization acceptable to the *code official*. The *code official* is authorized to require design submittals to be prepared by, and bear the stamp of, a registered design professional.

104.2.2.7 Peer review. The *code official* is authorized to require submittal of a peer review report in conjunction with a request to use an alternative material, design or method of construction, prepared by a peer reviewer that is *approved* by the *code official*.

104.2.3 Modifications. Where there are practical difficulties involved in carrying out the provisions of this code, the *code official* shall have the authority to grant modifications for individual cases, provided that the *code official* shall first find that one or more special individual reasons make the strict letter of this code impractical, that the modification is in conformance with the intent and purpose of this code, and that such modification does not lessen health, life and fire safety requirements. The details of the written request and action granting modifications shall be recorded and entered into the files of the Douglas County Building Division.

104.3 Applications and permits. The *code official* is authorized to receive applications, review construction documents and issue permits for construction regulated by this code, issue permits for operations regulated by this code, inspect the premises for which such permits have been issued and enforce compliance with the provisions of this code. Any permit required for compliance with this code will be reviewed and processed by the Douglas County Building Division through existing procedures.

104.4 Access to Property. For the purpose of inspecting and enforcing the provisions of this code and the terms and conditions of any permit issued under this code, the *code official* is authorized to enter upon private property at reasonable times and upon reasonable notice for the purpose of determining compliance with this code and to evaluate conditions relative to the permit application.

104.4.1 Authorization. The owner or occupant of the property having a permit under this code shall allow the *code official* access to the property to perform the required inspections. If access is denied, the *code official* shall apply to the Court with jurisdiction to seek authority to access the property.

104.5 Identification. The *code official* shall carry proper identification when inspecting structures or premises in the performance of duties under this code.

104.6 Notices and orders. The *code official* shall issue all necessary notices or orders to ensure compliance with this code.

104.7 Official records. The *code official* shall keep official records as required by Sections 104.7.1 104.7.1 through 104.7.5. Such official records shall be retained for not less than 5 years or for as long as the structure or activity to which such records relate remains in existence, unless otherwise provided by other regulations.

104.7.1 Approvals. A record of approvals shall be maintained by the *code official* and shall be available for public inspection during business hours in accordance with applicable laws.

104.7.2 Inspections. The *code official* shall keep a record of each inspection made, including notices and orders issued, showing the findings and disposition of each.

104.7.3 Code alternatives and modifications. Application for alternative materials, design and methods of construction and equipment in accordance with Section 104.2.2; modifications in accordance with Section 104.2.3; and documentation of the final decision of the *code official* for either shall be in writing and shall be retained in the official records.

104.7.4 Tests. The *code official* shall keep a record of tests conducted to comply with Sections 104.2.1.4 and 104.2.2.5.

104.7.5 Fees. The *code official* shall keep a record of fees collected and refunded in accordance with Section 106.

104.8 Liability. The *code official*, member of the board of appeals or employee charged with the enforcement of this code, while acting for Douglas County, in good faith and without malice in the discharge of the duties required by this code or other pertinent law or ordinance, shall not thereby be rendered personally liable, either civilly or criminally, and is hereby relieved from all personal liability for any damage accruing to persons or property as a result of an act or by reason of any act or omission in the discharge of official duties.

104.8.1 Legal defense. Any suit or criminal complaint instituted against any officer or employee because of an act performed by that officer or employee in the lawful discharge of duties and under the provisions of this code or other laws or ordinances implemented through the enforcement of this code shall be defended by legal representatives of Douglas County until final termination of the proceedings. The *code official* or any subordinate shall not be liable for costs in an action, suit or proceeding that is instituted in pursuance of the provisions of this code.

104.9 Approved materials and equipment. Materials, equipment and devices approved by the *code official* shall be constructed and installed in accordance with such approval.

104.9.1 Materials and equipment reuse. Materials, equipment and devices shall not be reused unless such elements are in good working order and *approved*.

104.10 Other agencies. When requested to do so by the *code official*, other officials of Douglas County shall assist and cooperate with the *code official* in the discharge of the duties required by this code.

SECTION 105—TEMPORARY USES, EQUIPMENT AND SYSTEMS

105.1 General. The *code official* is authorized to issue a permit for temporary uses, equipment and systems. Such permits shall be limited as to time of service, but shall not be permitted for more than 180 days. The *code official* is authorized to grant extensions for demonstrated cause.

105.2 Conformance. Temporary uses, equipment and systems shall conform to the requirements of this code as necessary to ensure health, safety and general welfare.

105.3 Temporary service utilities. The *code official* is authorized to give permission to temporarily supply service utilities.

105.4 Termination of approval. The *code official* is authorized to terminate such permit for

temporary uses, equipment and systems and to order the same to be discontinued.

SECTION 106—FEES

106.1 General. Douglas County has not established any fees related to this code.

SECTION 107—FAILURE TO COMPLY, STOP WORK ORDER AND ENFORCEMENT

107.1 Authority. Where the *code official* finds any work regulated by this code being performed or already performed in a manner contrary to the provisions of this code or in a dangerous or unsafe manner, the *code official* is authorized to issue a stop work order or a Notice of Violation.

107.2 Issuance. A stop work order or Notice of Violation shall be in writing and shall be given to the owner of the property, the owner's authorized agent or the person performing the work. Upon issuance of a stop work order, the cited work shall immediately cease. The stop work order shall state the reason for the order and the conditions under which the cited work is authorized to resume. The Notice of Violation shall specify the violation, required corrective action, and compliance deadline.

107.3 Emergencies. Where an emergency exists, the *code official* shall not be required to give a written notice prior to stopping the work.

107.4 Failure to comply. Any person who shall continue any work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, or fails to correct a violation of the code as specified in a Notice of Violation shall be subject to fines established by Douglas County. Code violation penalties will be sought in accordance with Sections 30-28-209 and 30-28-210 Colorado Revised Statutes (C.R.S.).

Chapter 2 - Definitions

SECTION 201 GENERAL

201.1 Scope. Unless otherwise expressly stated, the following words and terms shall, for the purposes of this code, have the meanings shown in this chapter.

201.2 Interchangeability. Words stated in the present tense include the future; words stated in the masculine gender include the feminine and neuter; and the singular number includes the plural and the plural the singular.

201.3 Terms defined in other codes. Where terms are not defined in this code and are defined in other International Codes, such terms shall have the meanings ascribed to them as in those codes.

201.4 Terms not defined. Where terms are not defined through the methods authorized by this section, such terms shall have their ordinarily accepted meanings such as the context implies.

SECTION 202 DEFINITIONS

ACCESSORY STRUCTURE. A building or structure used to shelter or support any material, equipment, chattel or occupancy other than a habitable building.

AGRICULTURAL BUILDING. A structure designed and constructed to house farm implements, hay, grain, poultry, livestock or other horticultural products. This structure shall not be a place of human habitation or a place of employment where agricultural products are processed, treated or packaged, nor shall it be a place used by the public.

APPROVED. Acceptable to the *code official*.

BUILDING. Any structure intended for supporting or sheltering any occupancy.

CLASS A TESTS. Class A Tests are applicable to *roof coverings* that are expected to be effective against severe fire exposure, afford a high degree of fire protection to the *roof deck*, do not slip from position, and are not expected to present a flying brand hazard.

CODE OFFICIAL. The code official is the Chief Building Official.

DEFENSIBLE SPACE. An area either natural or man-made, where material capable of allowing a fire to spread unchecked has been treated, cleared or modified to slow the rate and intensity of an advancing wildfire and to create an area for fire suppression operations to occur.

EMBELLISHMENTS. Elements incorporated in design and construction for ornamental or decorative purpose that are not integral to the structure or structural support.

FIRE INTENSITY CLASSIFICATION. The level of fire intensity identified for areas where significant fuel hazards and associated dangerous fire behavior may exist, based upon vegetative fuels, topography, weather conditions, and flame length value.

FIRE-RESISTANCE-RATED CONSTRUCTION. The use of materials and systems in the

design and construction of a building or structure to safeguard against the spread of fire within a building or structure and the spread of fire to or from buildings or structures to the *wildland-urban interface* area.

FIRE-RETARDANT-TREATED WOOD. Fire-retardant-treated wood is any wood product that, when impregnated with chemicals by a pressure process or other means during manufacture, shall have, when tested in accordance with ASTM E84 or UL 723, a listed *flame spread index* of 25 or less. The ASTM E84 or UL723 test shall be continued for an additional 20-minute period and the flame front shall not progress more than 10.5 feet beyond the centerline of the burners at any time during the test.

FLAME SPREAD INDEX. A comparative measure, expressed as a dimensionless number, derived from visual measurements of the spread of flame versus time for a material tested in accordance with ASTM E84.

FUEL MODIFICATION. A method of modifying fuel load by reducing the amount of nonfire-resistive vegetation or altering the type of vegetation to reduce the fuel load.

HABITABLE SPACE. A space in a building for living, sleeping, eating or cooking.

HEAVY TIMBER CONSTRUCTION. As described in Section 602.4 of the 2024 *International Building Code*.

HOME IGNITION ZONE. Home Ignition Zone is the home and the area around the home (or structure). The HIZ takes into account both the potential of the structure to ignite and the quality of *defensible space* surrounding it.

IGNITION-RESISTANT BUILDING MATERIAL. A type of building material that resists ignition or sustained flaming combustion sufficiently so as to reduce losses from wildfire exposure of burning embers and small flames.

IGNITION-RESISTANT VEGETATION. Plants that are less likely to readily ignite from a flame or other ignition source and produce fewer embers. While they can still be damaged by fire, their foliage and stems don't significantly contribute to the intensity of the fire.

LOG WALL CONSTRUCTION. A type of construction in which exterior walls are constructed of solid wood members and where the smallest horizontal dimension of each solid wood member is not less than 6 inches. Log wall construction shall follow requirements of ICC 400.

MULTILAYERED GLAZED PANELS. Window or door assemblies that consist of two or more independently glazed panels installed parallel to each other, having a sealed air gap in between, within a frame designed to fill completely the window or door opening in which the assembly is intended to be installed.

NONCOMBUSTIBLE. As applied to building construction material means a material that, in the

form in which it is used, is either one of the following:

1. Material of which no part will ignite and burn when subjected to fire.

2. Any material conforming to ASTM E136 shall be considered noncombustible within the meaning of this section.

3. For the purposes of this code, fire-rated gypsum board tested in accordance with ASTM C1396 with no less than a 1-hour fire-resistance-rating with fire exposure from the outside only is considered a noncombustible material.

OCCUPIABLE SPACE. A room or enclosed space designed for human occupancy in which individuals congregate for amusement, education or similar purposes or in which occupants are engaged at labor.

ROOF ASSEMBLY. A system designed to provide weather protection and resistance to design loads. The system consists of a *roof covering* and *roof deck* or a single component serving as both the *roof covering* and the *roof deck*. A *roof assembly* can include an underlayment, thermal barrier, ignition barrier, insulation or a vapor retarder.

ROOF COVERING. The covering applied to the *roof deck* for weather resistance, fire classification or appearance.

ROOF DECK. The flat or sloped surface not including its supporting members or vertical supports.

SLOPE. The variation of terrain from the horizontal; the number of feet rise or fall per 100 feet measured horizontally, expressed as a percentage.

STRUCTURE. That which is built or constructed.

STRUCTURE IGNITION ZONE. Structure Ignition Zone is the structure and the area around the structure (or home). The SIZ takes into account both the potential of the structure to ignite and the quality of *defensible space* surrounding it.

TREE CROWN. The primary and secondary branches growing out from the main stem, together with twigs and foliage.

WILDLAND-URBAN INTERFACE. The geographic areas within Douglas County identified on the Colorado Wildfire Resiliency Code Map where structures and other human development meet or intermingle with wildland or vegetative fuels.

Chapter 3 - Wildfire Hazard Identification

SECTION 301 GENERAL

301.1 Scope. The provisions of this chapter provide methodology to establish and record wildfire hazard based on the findings of fact to be regulated by this code.

301.2 Objective. The objective of this chapter is to provide simple baseline criteria for determining *wildland-urban interface* areas based on the wildfire hazard.

SECTION 302 WILDLAND-URBAN INTERFACE AREA DESIGNATIONS

302.1 Declaration. Douglas County declares the *wildland-urban interface* areas within Douglas County as shown on the Colorado Wildfire Resiliency Code Map, available at: https://experience.arcgis.com/experience/34c113129c044004bc672ca5493378de/

SECTION 303 MAPPING AND APPLICABILITY

303.1 Mapping of Wildfire Hazard Areas. The Wildfire Hazard area map for Douglas Count is the Colorado Wildfire Resiliency Code Map. This map identifies areas subject to the provisions of this code and is available at the link provided above and at the Douglas County Building Division Office.

303.1.1 Map. This map is based on a combination of factors including, but not limited to, vegetative fuels, topography, local weather patterns, and fire behavior modeling data.

303.1.2 Locally Developed Mapping. Douglas County may develop and adopt local maps designating wildfire hazard and *fire intensity classifications* within its jurisdictional boundaries in accordance with Sections 303.1 through 303.3.

303.2 Fire Intensity Classification. *Fire Intensity Classification* is identified on the map in accordance with Section 303.1. *Fire Intensity Classification* is determined by expected wildfire behavior, including flame length and suppression difficulty and is separated into three levels: low, moderate, and high. The identified *fire intensity classification* establishes code requirements for construction and mitigation.

303.2.1 Low Fire Intensity Classification. Low *Fire Intensity Classification* is identified in areas with light to medium surface fuels, such as grasses, shrubs, and scattered low-density vegetation. These fuels are often discontinuous, which limits flame propagation but can sustain burning under moderate weather conditions. Fires in this class may occur on gentle to moderate *slopes*, where topography begins to influence the rate of spread. Although flame lengths remain relatively small—typically less than two feet—limited spotting may occur, especially with wind. Trained firefighters with protective equipment and standard hand tools can usually suppress these fires through direct attack, particularly on *slopes* under 30 percent. Mechanized equipment is typically unnecessary.

Key Characteristics Include:

1. **Fuels**: Light to medium surface fuels, including grasses, shrubs, and scattered vegetation (e.g., WNL, USL fuel types).

2. **Flame Length**: Less than 2 feet.
3. **Rate of Spread**: Low, increasing with *slopes* over 20 percent.
4. **Spotting**: Very short-range spotting is possible under windy conditions.
5. **Terrain Influence**: More active fire behavior on moderate *slopes* (20 to 30 percent).
6. **Suppression Difficulty**: Easily suppressed by trained firefighters using basic protective gear and hand tools. Direct attack is effective, and mechanized support is rarely needed.

303.2.2 Moderate Fire Intensity Classification. Moderate *Fire Intensity Classification* is identified in areas with moderate to heavy fuel loads, such as dense shrubs, small trees, and accumulated ground fuels. Fires in this class present continuous horizontal and vertical fuel arrangements, allowing flames to reach up to 8 feet in length. Fire behavior is notably influenced by moderate to steep *slopes*, often accelerating the spread.

Short-range spotting becomes more common, complicating suppression efforts. Ground crews typically require mechanized support, such as engines and dozers, to establish control lines. Aircraft assistance may be necessary, particularly in inaccessible terrain. There is a significant increase in the potential for property damage and risk to life, especially in *wildland-urban interface* areas.

Key Characteristics Include:

1. **Fuels**: Moderate to heavy fuels, including dense shrublands, small trees, timber litter, and canopy fuels (e.g., USH, UIH fuel types).
2. **Flame Length**: Up to 8 feet.
3. **Rate of Spread**: Moderate to high, increasing significantly on *slopes* over 30 percent.
4. **Spotting**: Short-range spotting is common.
5. **Terrain Influence**: Steep *slopes* (30 percent or greater) increase fire spread and intensity.
6. **Suppression Difficulty**: Challenging for ground crews without support from engines, dozers, or aircraft. Dozers and plows are generally effective on moderate terrain.

303.2.3 High Fire Intensity Classification. High *Fire Intensity Classification* is identified in areas with heavy, continuous fuel loads, such as dense forest canopies, thick understory growth, and heavy dead/downed material. Fires in this class frequently occur on steep *slopes*, often exceeding 40 percent, where topography dramatically increases the rate of spread and severity. Flame lengths can exceed 30 feet, and both short- and medium-range spotting are common, particularly in windy conditions. Direct suppression by ground crews is typically ineffective, requiring indirect attack strategies, such as backburns and aerial retardant drops. Fires in this class pose extreme risk to life, property, and firefighter safety, especially in rugged or remote areas.

Key Characteristics Include:

1. **Fuels**: Heavy fuels, including dense forests, urban core areas with heavy fuel loads, and canopy-dominated regions (e.g., WNH, USH, UCH fuel types).

2. **Flame Length**: Up to 30 feet or more.
3. **Rate of Spread**: Rapid, especially on *slopes* greater than 40 percent.
4. **Spotting**: Short-range spotting is common; medium-range spotting is possible under windy conditions.
5. **Terrain Influence**: *Slopes* over 40 percent amplify intensity and spread, creating dangerous conditions for suppression.
6. **Suppression Difficulty**: Direct attack by ground forces and dozers is generally ineffective. Indirect strategies (backburning, aerial support) are often necessary. These fires present significant danger to life, property, and responder safety.

303.3 Applicability of Code Provisions. The requirements of this code shall apply to all parcels located within the designated Wildfire Hazard Areas and corresponding *fire intensity classifications* as identified on the Colorado Wildfire Resiliency Code Map. The level of structure hardening, *defensible space*, and other mitigation measures required shall correspond to the applicable *fire intensity classification*—Low, Moderate, or High—as established by the board.
Structures and parcels identified with low *fire intensity classification* shall be constructed and maintained in accordance with the provisions for Class 1 structure hardening and site and area requirements.
Structures and parcels identified with moderate to high *fire intensity classifications* shall be constructed and maintained in accordance with the provisions for Class 2 structure hardening and site and area requirements.

SECTION 304 GROUND-TRUTHING

304.1 Purpose. This section establishes a process for owners or the owners authorized representative to request a ground-truthing review of their property's Wildfire Hazard or *fire intensity classification* as identified on state or locally adopted maps. The intent is to provide an opportunity to verify that mapping accurately reflects current, site-specific conditions.

304.2 Determination of Fire Intensity Classification and Code Requirements. As determined by the *code official,* the *fire intensity classification* and associated requirements shall be based on a review of the vegetative fuels on the parcel and within 300' of the parcel boundary, topography, local weather patterns, and fire behavior modeling data and in accordance with the following *fire intensity classifications*:

304.2.1 Low *Fire Intensity Classification* in accordance with Section 303.2.1
304.2.2 Moderate *Fire Intensity Classification* in accordance with Section 303.2.2
304.2.3 High *Fire Intensity Classification* in accordance with Section 303.2.3

This determination shall be made based on existing conditions or conditions that have been established by a development plan approved by Douglas County. Technical documentation shall be submitted in support of such request by a qualified wildfire professional and in accordance with Section 104.2.

Chapter 4- Structure Hardening

SECTION 401 GENERAL

401.1 Scope. Exterior design and construction of new buildings and structures within the *wildland-urban interface* areas of Douglas County that are outside the corporate limits of a city or town and outside the boundaries of a fire protection district shall be constructed in accordance with this chapter.

Exceptions:

1. Buildings of an accessory character classified as Group U occupancy (including *agricultural buildings*) of any size located at least 50 feet from a structure containing *occupiable* or *habitable space*.
2. One-story detached accessory, nonhabitable structures, such as tool and storage sheds, playhouses and similar uses, provided that the floor area does not exceed 120 square feet and the structure is located greater than or equal to 10 feet from the nearest adjacent occupiable structure.
3. The reconstruction, replacement, alteration, or repair of the exterior walls of an existing building, when less than 25 percent of the surface area of all exterior walls is affected.
4. The reconstruction, replacement, alteration, or repair of the exterior *roof covering* of an existing building, when less than 25 percent of the surface area of the exterior *roof covering* or an attachment thereto is affected.
5. Alterations or repairs to the exterior of an existing structure, or an attachment to it, when less than twenty-five percent of the exterior of the structure is affected by the alteration or repair.
6. Additions that do not increase the footprint of a structure by more than 500 square feet.

SECTION 402 BUILDING MATERIAL

402.1 Building material. Building materials shall comply with any one of the requirements in Section 402.2 through 402.4.

402.2 Noncombustible material. *Noncombustible* material shall comply with the definition of *noncombustible* materials in Section 202.

402.3 Fire-retardant-treated wood. *Fire-retardant-treated wood* shall be identified for exterior use and shall meet the requirements of Section 2303.2 of the 2024 *International Building Code*.

402.4 Ignition-resistant building material. Material shall be tested on the front and back faces in accordance with the extended ASTM E84 or UL 723 test, for a total test period of 30 minutes, or with the ASTM E2768 test. The materials shall bear identification showing the fire test results. Panel products shall be tested with a ripped or cut longitudinal gap of 1/8 inch. The materials, when tested in accordance with the test procedures set forth in ASTM E84 or UL 723 for a test period of 30 minutes, or with ASTM E2768, shall comply with Sections 402.4.1 through 402.4.3.3. Materials or products which melt, drip or delaminate to the extent that the flame front is interrupted are not permitted.

Exception: Materials composed of a combustible core and a noncombustible exterior covering made from either aluminum at a minimum 0.019 inch thickness or corrosion-

resistant steel at a minimum 0.0149 inch thickness shall not be required to be tested with a ripped or cut longitudinal gap.

402.4.1 Flame spread. The material shall exhibit a *flame spread index* not exceeding 25.

402.4.2 Flame front. The material shall exhibit a flame front that does not progress more than 10 feet 6 inches beyond the centerline of the burner at any time during the test.

402.4.3 Weathering. *Ignition-resistant building materials* shall maintain their performance in accordance with this section under conditions of use. The materials shall meet the performance requirements for weathering (including exposure to temperature, moisture and ultraviolet radiation) contained in Sections 402.4.3.1 through 402.4.3.3, as applicable to the materials and conditions of use.

402.4.3.1 Evaluation requirements for weathering. Fire-retardant-treated wood, wood-plastic composite materials and plastic lumber materials shall be evaluated after weathering in accordance with Method A "Test Method for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing" in ASTM D2898.

402.4.3.2 Wood-plastic composite materials. Wood-plastic composite materials shall also demonstrate acceptable fire performance after weathering by the following procedure: first testing in accordance with ASTM E1354 at an incident heat flux of 50 kW/m2 in the horizontal orientation, then weathering in accordance with ASTM D7032 and then retesting in accordance with ASTM E1354 and exhibiting an increase of no more than 10 percent in peak rate of heat release when compared to the peak heat release rate of the nonweathered material.

402.4.3.3 Plastic lumber materials. Plastic lumber materials shall also demonstrate acceptable fire performance after weathering by the following procedure: first testing in accordance with ASTM E1354 at an incident heat flux of 50 kW/m2 in the horizontal orientation, then weathering in accordance with ASTM D6662 and then retesting in accordance with ASTM E1354 and exhibiting an increase of no more than 10 percent in peak rate of heat release when compared to the peak heat release rate of the nonweathered material.

SECTION 403 CLASS 1 STRUCTURE HARDENING

General. Class 1 structure hardening shall be in accordance with Sections 403.2 through 403.4.2 and shall apply to buildings and structures hereafter constructed, modified or relocated into or within areas of the *wildland-urban interface* having a low fire hazard severity.

403.1 Roofing. Roofs shall have a *roof covering* or *roof assembly* classified as Class A when tested in accordance with ASTM E108 or UL 790.

403.1.1 Flame and ember protection of roofs. For roof assemblies where the roof covering profile creates a space between the roof covering and roof deck, the space shall resist the entry of flames and embers by one or more of the following methods:

1. Firestopping with noncombustible material of the space between the roof covering and the roof deck.

2. Installation of one layer of cap sheet complying with ASTM D3909 over the combustible roof deck.
3. Installation of a listed Class A classified roof assembly.

403.1.2 Roof valley flashings. Valley flashings shall be not less than 0.019 inch (No. 26 galvanized sheet gage) corrosion-resistant metal installed over a minimum 36- inch-wide underlayment consisting of one layer of cap sheet complying with ASTM D3909 running the full length of the valley.

403.2 Gutters and downspouts. Gutters and downspouts shall be constructed of *noncombustible* material.

403.3 Ventilation Openings. Ventilation openings for enclosed attics, enclosed rafter spaces, and underfloor spaces shall be in accordance with Section 403.4.1 or Section 403.4.2 as applicable.

403.3.1 Performance Requirements. Ventilation openings shall be fully covered with listed vents, tested in accordance with ASTM E2886, to demonstrate compliance with all the following requirements:

1. There shall be no flaming ignition of the cotton material during the Ember Intrusion Test.
2. There shall be no flaming ignition during the Integrity Test portion of the Flame Intrusion Test.
3. The maximum temperature of the unexposed side of the vent shall not exceed 662°F (350°C).

403.3.2 Prescriptive Requirements. Ventilation openings for enclosed attics, enclosed rafter spaces, and underfloor spaces shall be covered with *noncombustible* 404.3corrosion-resistant mesh with openings not to exceed ⅛-inch.

SECTION 404 CLASS 2 STRUCTURE HARDENING

404.1 General. Class 2 structure hardening shall be in accordance with Sections 404.2 through 404.10.1 as well as the provisions of Class 1 structure hardening in Sections 403.2-403.4.2 and shall apply to buildings and structures hereafter constructed, modified or relocated into or within areas of the *wildland-urban interface* having a moderate or high fire hazard severity. See also Sections 101.6-101.7.

404.2 Protection of eaves. Eaves and soffits shall be protected on the exposed underside by *noncombustible material, ignition-resistant materials,* or by materials approved for not less than 1-hour *fire-resistance-rated construction*, *⅝-inch Type X drywall,* 2-inch nominal dimension lumber, or 1 inch nominal *fire-retardant-treated wood* or ¾ inch nominal fire-retardant-treated plywood, identified for exterior use and meeting the requirements of Section 2303.2 of the 2024 *International Building Code*. Fascias are required and shall be protected on the backside by *noncombustible material, ignition-resistant materials,* or by materials approved for not less than 1-hour *fire-resistance-rated construction, ⅝-inch Type X drywall,* or 2-inch nominal dimension lumber.

404.3 Exterior Walls. Exterior walls of buildings or structures shall be constructed with one of

the following methods:

1. Exterior wall assemblies with a minimum of 1-hour fire-resistance rating, rated for exposure on the exterior side.
2. *Approved noncombustible materials.*
3. *Heavy timber* or *log wall construction.*
4. *Noncombustible* materials complying with Section 402.2 on the exterior side.
5. *Fire-retardant treated wood* complying with Section 402.3 on the exterior side. The *fire-retardant-treated wood* shall be labeled for exterior use and meet the requirements of Section 2303.2 of the 2024 *International Building Code*.
6. Ignition-resistant materials complying with Section 402.4 on the exterior side.

Such material shall extend from the top of the foundation to the underside of the eave or the underside of the roof sheathing.

Exceptions:

1. Exterior wall *embellishments* and architectural trim (exclusive of trim on exterior windows and doors) not to exceed 5 percent of the square footage of the exterior wall.
2. Roof or wall top cornice projections and similar assemblies.
3. Solid wood rafter tails and solid wood blocking installed between rafters having minimum dimension 2 inch nominal.

404.3.1 Exterior Wall Coverings. Exterior wall coverings shall be limited to the following:

1. *Noncombustible* materials.
2. *Fire-retardant-treated wood*.
3. *Ignition-resistant building materials*.

Exception: Where options 1 or 2 in section 404.3 are used, vinyl siding may be used as an exterior covering.

404.3.2 Flashing. A minimum of 6 inches of metal flashing or *noncombustible* material applied vertically between the wall sheathing and the exterior cladding shall be installed at the ground, decking, and roof intersections.

Combustible sheathing products exposed by the gap created at the base of the exterior walls, posts, or columns must be protected with *noncombustible material* or *ignition-resistant building materials* while still permitting drainage and moisture control from behind exterior cladding.

404.4 Underfloor enclosure. Buildings or structures shall have underfloor areas enclosed to the ground or comply with exterior walls in accordance with Section 404.3.

404.5 Decking. Unenclosed decks shall have the deck walking surface constructed of one of the following:

1. *Approved noncombustible* materials
2. Class A rated material

   Exception: Composite decking material with a minimum of Class B rating
3. *Fire-retardant-treated wood* identified for exterior use and meeting the requirements of Section 2303.2 of the 2024 *International Building Code*
4. *Ignition-resistant building materials* in accordance with Section 402.4.

404.6 Appendages and Projections. Appendages and projections shall be constructed in

accordance with Section 404.3.

404.7 Exterior Glazing. Exterior windows, window walls and glazed doors, windows within exterior doors, and skylights shall be tempered glass, *multilayered glazed panels*, glass block or have a fire protection rating of not less than 20 minutes.

404.8 Exterior Doors. Exterior doors shall be *approved noncombustible* construction, solid core wood not less than 1 ¾-inches thick, or have a fire protection rating of not less than 20 minutes. Windows within doors and glazed doors shall be in accordance with Section 404.7.

Exception: Vehicle access doors.

404.9 Vehicle Access Door Perimeter Gap. Exterior vehicle access doors shall resist the intrusion of embers from entering by preventing gaps between doors and door openings, at the head, sill, and jamb of doors from exceeding ⅛ inch as approved by the AHJ.

Gaps between doors and door openings shall be controlled by one of the following methods:

1. Weather-stripping products made of materials that: (a) have been tested for tensile strength in accordance with ASTM D638 (Standard Test Method for Tensile Properties of Plastics) after exposure to ASTM G155 (Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials) for a period of 2,000 hours, when the maximum allowable difference in tensile strength values between exposed and non-exposed samples does not exceed 10 percent; and (b) exhibit a V-2 or better flammability rating when tested to UL 94 (Standards for Tests for Flammability of Plastic Materials for Parts in Devices and Appliances).
2. Door overlaps onto jambs and headers.
3. Garage door jambs and headers covered with metal flashing.

404.10 Detached Accessory Structures. Detached *accessory structures* located less than 50 feet from a building containing *habitable* or *occupiable space* shall have exterior walls constructed in accordance with Section 404.3 through 404.3.2.

404.10.1 Underfloor areas. Where the detached structure is located and constructed so that the structure or any portion thereof projects over a descending *slope* surface greater than 10 percent, the area below the structure shall have underfloor areas enclosed to within 6 inches of the ground, with exterior wall construction in accordance with Section 404.3 or underfloor protection in accordance with Section 404.4 or with ⅛-inch metal corrosion-resistant screen with a hardened zone within 5 feet.

Exception: The enclosure shall not be required where the underside of exposed floors and exposed structural columns, beams and supporting walls are protected as required for exterior 1-hour *fire-resistance-rated construction, heavy timber construction, noncombustible* materials on the exterior side, or *fire-retardant-treated wood* on the exterior side. The *fire-retardant-treated wood* shall be labeled for exterior use and meet the requirements of Section 2303.2 of the 2024 *International Building Code.*

Chapter 5- Site and Area Requirements

SECTION 501 GENERAL

501.1 Scope. The provisions of this chapter shall apply to parcels subject to this code.

501.2 Reference. As needed, the *code official* shall refer to the Home Ignition Zone (HIZ) Guide as developed by the Colorado State Forest Service.

Where conflicts occur between provisions of this code and the HIZ Guide, the provisions of this code shall govern. The provisions of this code, as applicable, shall take precedence over the provisions in the referenced standard.

SECTION 502 CLASS 1 REQUIREMENTS

502.1 Structure Ignition Zone 1 (0-5 feet): Immediate Zone

502.1.1 Objective. This zone is designed to reduce or eliminate ember ignition and direct flame contact with the structure, decks, stairs, and attachments.

502.1.2 Materials. Use *noncombustible*, hard surface materials in this zone, such as rock, gravel, sand, concrete, bare earth or stone/concrete pavers.

Exception: Ignition-resistant plantings, per an approved list by the AHJ that is not less than that created by the Colorado State Forest Service, are allowed in the Immediate Zone.

502.1.3 Plantings. Remove all plantings including shrubs, slash, combustible mulch and other woody debris, with the exception of ignition-resistant vegetation.

502.1.4 Trees. There shall be no planting of new trees in the immediate zone. Mature trees of no less than 10-inch diameter at 4.5 feet above ground level may be maintained.

Tree crowns extending to within 10 feet of any structure shall be pruned to maintain a minimum clearance of 10 feet.

Prune tree branches to a height of 6-10 feet from the ground or a third of the total height of the tree, whichever is less.

502.2 Site Signage

502.2.1 Marking of roads. *Approved* signs or other *approved* notices shall be provided and maintained for access roads and driveways to identify such roads and prohibit the obstruction thereof.

502.2.2 Marking of fire protection equipment. Fire protection equipment and fire hydrants shall be clearly identified in a manner *approved* by the *code official* to prevent obstruction.

502.2.3 Address markers. Buildings shall have a permanently posted address, which shall be placed at each driveway entrance and be visible from both directions of travel along the road. In all cases, the address shall be posted at the beginning of construction and shall be maintained thereafter, and the address shall be visible and legible from the road on which the address is located in a manner *approved* by the *code official*.

502.3 Retaining Walls

502.3.1 Retaining Walls. Retaining walls shall be constructed with either *noncombustible* or ignition-resistant materials when any of the following conditions exist:

1. The retaining wall is within 8 feet of a structure regulated by this code or up to the property line when the property line is less than 8 feet away from the structure.
2. The retaining wall is integral to the support of a structure regulated by this code.
3. The retaining wall is integral to the egress from a structure regulated by this code to a public way, easement, or private road.

502.4 Fencing

502.4.1 Fencing. Fencing within 8 feet of a structure regulated by this code or up to the property line when the property line is less than 8 feet away from the structure shall be constructed with *noncombustible* or ignition-resistant materials.

Exception: Vinyl fencing. Vinyl fencing may be allowed.

SECTION 503 CLASS 2 REQUIREMENTS

503.1 General. Class 2 site and area requirements shall be in accordance with Sections 503.2 through 503.3.2 and include all requirements of Class 1 in Sections 502.1 through 502.4.

503.2 Structure Ignition Zone 2 (5-30 feet) Intermediate Zone

503.2.1 Objective. This zone is designed to give an approaching fire less fuel, which will help reduce its intensity as it gets nearer to structures.

503.2.2 Dead Materials. Within the *fuel modification* area, hazardous dead plant material must be removed from live vegetation.

503.2.3 Fuels Accumulation. Avoid large accumulations of surface fuels such as logs, branches, slash and combustible mulch.

503.2.4 Trees. *Tree crowns* extending to within 10 feet of any structure shall be pruned to maintain a minimum clearance of 10 feet.

Prune tree branches to a height of 6-10 feet from the ground or a third of the total height of the tree, whichever is less.

503.2.4.1 Tree Spacing. *Tree crowns* within this zone shall be spaced to prevent structure ignition and promote fuel discontinuity to limit fire spread.

503.2.5 Shrubs. Shrub groups within this zone shall be spaced to prevent structure ignition. Shrubs shall be at least 10 feet away from the edge of tree branches.

503.3 Structure Ignition Zone 3 (30-100 feet) Expanded Zone

503.3.1 Objective. This zone focuses on mitigation that keeps fire on the ground.

503.3.2 Tree Spacing. *Tree crowns* within this zone shall be spaced at a minimum of 6-10 feet.

RESOLUTION NO R-026- _____

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

A RESOLUTION AMENDING THE DOUGLAS COUNTY BUILDING CODES THROUGH THE ADOPTION OF THE INTERNATIONAL BUILDING, RESIDENTIAL, PLUMBING, MECHANICAL, FUEL GAS, AND ENERGY CONSERVATION CODES, WITH AMEDNMENTS, AND NATIONAL ELECTRICAL CODE, WITH AMENDMENTS, AND ADOPTION OF THE INTERNATIONAL SWIMMING POOL AND SPA CODE, AND COLORADO MODEL ELECTRIC READY AND SOLAR READY CODE; AND ADOPTION OF THE DOUGLAS COUNTY WILDFIRE RESILIENCY CODE.

WHEREAS C.R.S. § 30-28-202, authorizes the Board of County Commissioners ("Board") to adopt a building code in all or part of the county, and not embraced within the limits of any city or town; and

WHEREAS C.R.S. § 30-28-204, allows the Board to alter and amend any county building code after public hearing; and

WHEREAS C.R.S. § 24-33.5-1237, requires the Board to adopt a wildfire resiliency code that meets or exceeds the 2025 Colorado Wildfire Resiliency Code; and

WHEREAS, the Chief Building Official has recommended that the Board amend the current Douglas County Building Codes by the adoption of the following Codes: the 2024 INTERNATIONAL BUILDING CODE with APPENDIX C, 2024 INTERNATIONAL RESIDENTIAL CODE with APPENDIX BD, 2024 INTERNATIONAL PLUMBING CODE with APPENDIX E, 2024 INTERNATIONAL MECHANICAL CODE, 2024 INTERNATIONAL FUEL GAS CODE, 2024 INTERNATIONAL ENERGY CONSERVATION CODE, and 2026 NATIONAL ELECTRICAL CODE, and adoption of the 2024 INTERNATIONAL SWIMMING POOL AND SPA CODE, and the COLORADO MODEL ELECTRIC READY AND SOLAR READY CODE; including the Amendments as set forth in Attachment A, Exhibits A through F, attached hereto and incorporated herein (collectively the "Codes").

WHEREAS, the Chief Building Official has recommended that the Board adopt the DOUGLAS COUNTY WILDFIRE RESILEINCEY CODE, as set forth in Attachment B hereto and incorporated herein (collectively the "Codes").

WHEREAS, on March 2, 2026, the Planning Commission held a public hearing on the adoption of the revised Codes; and

WHEREAS, the Planning Commission has certified the Codes to the Board with a recommendation that the Codes be adopted for the entire applicable unincorporated area of Douglas County; and

WHEREAS, notice of public hearing before the Board on the adoption of the Codes was published in a newspaper of general circulation in Douglas County, as required by law; and

WHEREAS, on March 24, 2026, the Board conducted a public hearing on the adoption of the Codes; and

WHEREAS, the Board desires to adopt the Codes for the entire applicable unincorporated area of Douglas County; now, therefore,

BE IT RESOLVED, by the Board of County Commissioners of the County of Douglas, State of Colorado, that the Douglas County Codes shall be amended by the adoption of the following Codes, including the Amendments thereto, as set forth in Attachment A, Exhibits A through F and Attachment B, and for the entire applicable unincorporated area of Douglas County:

Section 1	2024 International Building Code with Appendix C as amended
	2024 International Residential Code with Appendix BD as amended
	2024 International Plumbing Code with Appendix E as amended
	2024 International Mechanical Code as amended
	2024 International Fuel Gas Code as amended
	2024 International Energy Conservation Code as amended
	2024 International Swimming Pool and Spa Code as amended
	Douglas County Colorado Wildfire Resiliency Code
	Colorado Model Electric Ready and Solar Ready Code as amended
Section 2	National Electrical Code, 2026 Edition as amended

BE IT FURTHER RESOLVED that:

Section 1 of this Resolution, and the Codes as amended hereto, shall become effective at 12:01 a.m. on July 1, 2026; and all prior resolutions adopting former versions of building codes, and amendments thereto, are repealed at 12:01 a.m. on July 1, 2026.

Section 2 of this Resolution, and the Code as amended hereto, shall become effective at 12:01 a.m. on January 1, 2027; and all prior resolutions adopting former versions of building codes, and amendments thereto, are repealed at 12:01 a.m. on January 1, 2027.

PASSED AND ADOPTED this 24th day of March 2026 in Castle Rock, Douglas County, Colorado.

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

_____

George Teal, Chair

Attest:

_____

Kristin Randlett, Clerk to the Board

DOUGLAS COUNTY
COLORADO

2024 Building Code Adoption with Amendments
Staff Report Addendum

DATE: MARCH 20, 2026

TO: DOUGLAS COUNTY BOARD OF COUNTY COMMISSIONERS

FROM: MATTHEW DZIUBANSKI, CHIEF BUILDING OFFICIAL
TIM PENDLETON, DEPUTY CHIEF BUILDING OFFICIAL

SUBJECT: ADOPTION OF THE 2024 INTERNATIONAL BUILDING CODES, 2026 NATIONAL ELECTRICAL CODE, AND COLORADO MODEL ELECTRIC READY AND SOLAR READY CODE WITH AMENDMENTS ALONG WITH THE DOUGLAS COUNTY WILDFIRE RESILIENCY CODE.

PLANNING COMMISSION HEARING:	**March 02, 2026 @ 6:00 PM**
BOARD OF COUNTY COMMISSIONERS HEARING:	**March 24, 2026 @ 2:30 PM**

Additional public comments regarding the 2024 Building Code updates have been received since the staff report was prepared and are included with this addendum. Any subsequent comments received will be provided to the Board prior to the hearing.

COLORADO ASSOCIATION OF HOME BUILDERS

March 3, 2026

CAHB Supports Extension and Refinement of the Colorado Wildfire Resiliency Code

The Colorado Association of Home Builders (CAHB) supports an extension of the local government implementation deadline for the Colorado Wildfire Resiliency Code (CWRC), currently set for April 1, 2026, and the establishment of mechanisms to allow timely refinement of the code. **Without delayed implementation, residential development will virtually come to a halt in the areas covered by the code.**

An interactive map showing the specific jurisdictions and areas subject to the 2025 Colorado Wildfire Resiliency Code (CWRC) is available here: 2025 Colorado Wildfire Resiliency Code Map.

Across the state, local governments have consistently expressed concern that, given the scope and complexity of the model code, meeting the April 1, 2026, adoption deadline will be extremely difficult if not impossible, and implementing the code by July 1, 2026, even more difficult. Jurisdictions are working in good faith to understand the technical requirements, evaluate impacts on permitting and enforcement, train staff, and engage stakeholders. Many have indicated that additional time is essential to ensure the code is implemented correctly, consistently, and in a way that achieves its intended wildfire resiliency goals.

From speaking to some local jurisdictions, if local governments are not prepared to implement and inspect for compliance with the CWRC, they will likely be unable to issue permits. Further, for those who may be comfortable issuing permits before there is clarity on how to operate within the new code, they have told us they will not issue Certificates of Occupancy (COs) unless they are comfortable with how to operate under the code. If local jurisdictions do not issue COs, they will not receive permit applications in the first place – no builder, big or small, can afford to build a home that cannot be sold.

CAHB is part of a growing coalition of stakeholders working collaboratively to refine the CWRC to eliminate inconsistencies and address unintended consequences.

The CWRC represents a significant departure from established national wildfire code standards. It is the first wildfire resiliency code in the United States that does not align with the International Wildland-Urban Interface Code (IWUIC), creating inconsistencies in defensible space requirements, structure hardening philosophy, and material performance criteria compared to widely accepted best practices.

As currently written, the code removes 37% of siding products from the marketplace, a change that will have a substantial impact on housing costs and material availability. In addition, the code contains prohibitions that are inconsistent—allowing certain combustible materials, such as vinyl, while prohibiting other products that have demonstrated wildfire resistance comparable to cement board. These

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restrictions fail to account for the role of wall assembly and defensible space, both of which are critical components of effective wildfire resiliency.

To help policymakers and the Wildfire Resiliency Code Board better understand these concerns and the proposed solutions, we have developed a Fact Sheet and a set of Coalition Requested Changes. These documents are intended to demonstrate that our goal is not to undermine the code, but rather to strengthen it, eliminate inconsistencies, and ensure it is workable for Colorado.

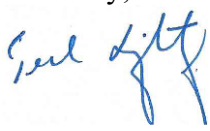
Our overarching goals are to reinstate performance-based options recognized in the IWUIC, remove exceptions that permit combustible materials near or on structures, and clarify technical requirements for ignition-resistant materials and fire-retardant-treated wood. Achieving these goals will improve the effectiveness of the code while maintaining a balanced approach that carefully weighs benefits and costs.

Accordingly, CAHB respectfully recommends the following policy actions:

- Delay the local government implementation deadline to allow for continued refinement of the code and alignment with the IWUIC.
- Establish an immediate mechanism to revisit and adjust policy provisions, rather than waiting for the standard three-year review cycle.
- Ensure the policy reflects a balanced approach that fully considers both wildfire resiliency benefits and housing attainability impacts.
- Provide a clear mechanism for appeal for products and other interested parties.
- Recognize the significance of this policy change by requiring progress updates to the Legislature during annual SMART Act hearings.

CAHB remains committed to working collaboratively with state and local governments, the Wildfire Resiliency Code Board, and other stakeholders to advance wildfire-resilient construction while preserving housing attainability. We appreciate your consideration of these recommendations and welcome the opportunity to discuss them further.

Sincerely,



Ted Leighty
Chief Executive Officer
Colorado Association of Home Builders

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For a better quality of life.

HOME BUILDERS ASSOCIATION of METRO DENVER®

March 19, 2026

Douglas County
Board of County Commissioners
Philip S. Miller Building
100 Third Street
Castle Rock, CO 80104

Dear Commissioners Laydon, Teal and Van Winkle:

On behalf of the Home Builders Association of Metro Denver (HBA), I am writing to express our support for Douglas County's upcoming adoption of the 2024 International Residential Code (IRC).

The HBA represents more than 500 homebuilders, developers, remodelers, architects, lenders, subcontractors, suppliers, and service providers across the eight-county metro Denver region. Within Douglas County, our membership includes many builders and developers who are actively contributing to the local housing market.

We appreciate the thoughtful and balanced approach Douglas County has taken in its code adoption process. In particular, we commend the County's decision to amend certain provisions to better align with the needs of future residents and the realities of residential construction. The exemption of fire sprinkler requirements for single-family homes, along with other practical modifications, reflects a clear understanding of the importance of maintaining housing attainability.

Housing affordability across the Front Range continues to face significant challenges. Elevated interest rates and sustained inflation have made homeownership increasingly difficult for many families. In this environment, it is critical that both the public and private sectors work together to avoid unnecessary cost increases wherever possible.

Given the current challenges facing both the residential construction industry and prospective homebuyers, we sincerely appreciate Douglas County's collaborative and pragmatic approach to the 2024 IRC. We also value the opportunity to participate in this process and provide input.

Thank you for your time and consideration. Please do not hesitate to reach out if we can provide any additional information.

Sincerely,

Ted Leighty
Chief Executive Officer
Home Builders Association of Metro Denver

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MEETING DATE: March 24, 2026

STAFF PERSON RESPONSIBLE: Ryan Bolger, Budget Analyst

DESCRIPTION: Resolution Supplementing the 2026 Adopted Budget for the County of Douglas, Colorado to Appropriate Restricted, Committed, and Assigned Fund Balances in the Amount of $42,923,905 for the Re-Appropriation of Prior Year Purchase Orders.

SUMMARY: This 1st supplemental budget of 2026 will re-appropriate restricted, committed, and assigned fund balance in the amount of $42,923,905 for purchase orders (POs) encumbered in the prior year but not fulfilled. In other words, reauthorize the spending of funds that were appropriated in 2025 for specific commitments that span multiple years. Each year the Budget Department collaborates with County Departments and Elected Officials to identify purchase orders that are no longer needed to prevent unnecessary re-appropriation in the subsequent year. We watch closely how long POs have been open and encourage departments to close POs that are older than one year. However, in some cases, we have contracts/projects that span multiple years that require us to re-appropriate remaining balances several years in a row. In the event a PO in the General Fund is re-appropriated into the subsequent year, and then closed, the Budget Department will require those funds be moved into contingency, so that departments do not inappropriately increase their spending authority. We do not necessarily use this same approach in other funds, since their funding sources are dedicated to the fund's specific purpose. Attached is a copy of the supplemental budget, which outlines the amounts being re-appropriated by fund, as well as the detail by vendor and PO (the first four digits of the PO number represents the year it was opened) along with explanations for re-appropriating POs older than one year. Fund summaries are also included to show the impact of amending the budget.

This resolution amends the fiscal year 2026 Adopted Budget by increasing appropriations for purchase orders being carried over from the prior fiscal year as follows:

•	$5,846,668	General Fund
•	$3,526,920	Road & Bridge Fund
•	$428,786	Law Enforcement Authority Fund
•	$30,000	District Attorney JD23rd Fund
•	$2,187,669	Justice Center Sales & Use Tax Fund
•	$29,537	Rueter-Hess Recreational Area Fund
•	$1,003,280	Parks & Open Space Sales & Use Tax Fund
•	$644,125	Solid Waste Disposal Fund
•	$28,371,217	American Rescue Plan Act Fund
•	$249,101	Capital Expenditures Fund
•	$596,446	Local Improvement District Fund
•	$10,156	Liability & Property Insurance Fund
	$42,923,905	TOTAL

The total amended budget for 2026 is now $693,698,372.

Each supplemental budget amends the adopted budget. The Budget Department will publish the supplemental budget and an additional spreadsheet reflecting how the budget has been amended.

RECOMMENDED ACTION: Approve Attached Resolution

REVIEW:

Martha Marshall	Approve	3/17/2026
Jeff Garcia	Approve	3/18/2026
Christie Guthrie	Approve	3/18/2026
Doug DeBord	Approve	3/19/2026

ATTACHMENTS:

Cover Page
PO Roll Supplemental 3.24.26

(ID # 4485)

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

Resolution Supplementing the 2026 Adopted Budget for the County of Douglas, Colorado to Appropriate Restricted, Committed, and Assigned Fund Balances in the Amount of $42,923,905 for the Re-Appropriation of Prior Year Purchase Orders.

RESOLUTION SUPPLEMENTING THE 2026 ADOPTED BUDGET TO APPROPRIATE RESTRICTED, COMMITTED, AND ASSIGNED FUND BALANCES IN THE AMOUNT OF $42,923,905.

WHEREAS, the Board of County Commissioners adopted the 2026 annual County budget in accordance with Colorado law; and

WHEREAS, pursuant to section 29-1-109(1)(b), C.R.S., the Board of County Commissioners may authorize the expenditure of unanticipated revenues or revenues not assured at the time of the adoption of the budget by enacting a supplementary budget and appropriation; and

WHEREAS, notice of this supplemental appropriation has been published as provided by law and considered at a public meeting of the Board of County Commissioners held on Tuesday, March 24, 2026 at 100 Third Street, Castle Rock, Colorado, beginning at 2:30 PM or as soon thereafter as possible.

• $5,846,668	General Fund
• $3,526,920	Road & Bridge Fund
• $428,786	Law Enforcement Authority Fund
• $30,000	District Attorney JD23rd Fund
• $2,187,669	Justice Center Sales & Use Tax Fund
• $29,537	Rueter-Hess Recreational Area Fund
• $1,003,280	Parks & Open Space Sales & Use Tax Fund
• $644,125	Solid Waste Disposal Fund
• $28,371,217	American Rescue Plan Act Fund
• $249,101	Capital Expenditures Fund
• $596,446	Local Improvement District Fund
• $10,156	Liability & Property Insurance Fund
$42,923,905	TOTAL

PASSED AND ADOPTED this 24th day of March 2026, in Castle Rock, Douglas County, Colorado.

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

BY:

_____

GEORGE TEAL, Chair

ATTEST:

_____

HAYLEY HALL, Clerk to the Board

MEETING DATE: March 24, 2026

STAFF PERSON RESPONSIBLE: Ryan Bolger, Budget Analyst

DESCRIPTION: Resolution Supplementing the 2026 Adopted Budget for the County of Douglas, Colorado to Appropriate Restricted, Committed, and Assigned Fund Balances in the Amount of $42,923,905 for the Re-Appropriation of Prior Year Purchase Orders.

SUMMARY: This 1st supplemental budget of 2026 will re-appropriate restricted, committed, and assigned fund balance in the amount of $42,923,905 for purchase orders (POs) encumbered in the prior year but not fulfilled. In other words, reauthorize the spending of funds that were appropriated in 2025 for specific commitments that span multiple years. Each year the Budget Department collaborates with County Departments and Elected Officials to identify purchase orders that are no longer needed to prevent unnecessary re-appropriation in the subsequent year. We watch closely how long POs have been open and encourage departments to close POs that are older than one year. However, in some cases, we have contracts/projects that span multiple years that require us to re-appropriate remaining balances several years in a row. In the event a PO in the General Fund is re-appropriated into the subsequent year, and then closed, the Budget Department will require those funds be moved into contingency, so that departments do not inappropriately increase their spending authority. We do not necessarily use this same approach in other funds, since their funding sources are dedicated to the fund's specific purpose. Attached is a copy of the supplemental budget, which outlines the amounts being re-appropriated by fund, as well as the detail by vendor and PO (the first four digits of the PO number represents the year it was opened) along with explanations for re-appropriating POs older than one year. Fund summaries are also included to show the impact of amending the budget.

This resolution amends the fiscal year 2026 Adopted Budget by increasing appropriations for purchase orders being carried over from the prior fiscal year as follows:

•	$5,846,668	General Fund
•	$3,526,920	Road & Bridge Fund
•	$428,786	Law Enforcement Authority Fund
•	$30,000	District Attorney JD23rd Fund
•	$2,187,669	Justice Center Sales & Use Tax Fund
•	$29,537	Rueter-Hess Recreational Area Fund
•	$1,003,280	Parks & Open Space Sales & Use Tax Fund
•	$644,125	Solid Waste Disposal Fund
•	$28,371,217	American Rescue Plan Act Fund
•	$249,101	Capital Expenditures Fund
•	$596,446	Local Improvement District Fund
•	$10,156	Liability & Property Insurance Fund
	$42,923,905	TOTAL

The total amended budget for 2026 is now $693,698,372.

Each supplemental budget amends the adopted budget. The Budget Department will publish the supplemental budget and an additional spreadsheet reflecting how the budget has been amended.

RECOMMENDED ACTION: Approve Attached Resolution

REVIEW:

Martha Marshall	Approve	3/17/2026
Jeff Garcia	Approve	3/18/2026
Christie Guthrie	Approve	3/18/2026
Doug DeBord	Approve	3/19/2026

ATTACHMENTS:

PO Roll Supplemental 3.24.26

(ID # 4485)

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

Resolution Supplementing the 2026 Adopted Budget for the County of Douglas, Colorado to Appropriate Restricted, Committed, and Assigned Fund Balances in the Amount of $42,923,905 for the Re-Appropriation of Prior Year Purchase Orders.

RESOLUTION SUPPLEMENTING THE 2026 ADOPTED BUDGET TO APPROPRIATE RESTRICTED, COMMITTED, AND ASSIGNED FUND BALANCES IN THE AMOUNT OF $42,923,905.

WHEREAS, the Board of County Commissioners adopted the 2026 annual County budget in accordance with Colorado law; and

WHEREAS, pursuant to section 29-1-109(1)(b), C.R.S., the Board of County Commissioners may authorize the expenditure of unanticipated revenues or revenues not assured at the time of the adoption of the budget by enacting a supplementary budget and appropriation; and

WHEREAS, notice of this supplemental appropriation has been published as provided by law and considered at a public meeting of the Board of County Commissioners held on Tuesday, March 24, 2026 at 100 Third Street, Castle Rock, Colorado, beginning at 2:30 PM or as soon thereafter as possible.

• $5,846,668	General Fund
• $3,526,920	Road & Bridge Fund
• $428,786	Law Enforcement Authority Fund
• $30,000	District Attorney JD23rd Fund
• $2,187,669	Justice Center Sales & Use Tax Fund
• $29,537	Rueter-Hess Recreational Area Fund
• $1,003,280	Parks & Open Space Sales & Use Tax Fund
• $644,125	Solid Waste Disposal Fund
• $28,371,217	American Rescue Plan Act Fund
• $249,101	Capital Expenditures Fund
• $596,446	Local Improvement District Fund
• $10,156	Liability & Property Insurance Fund
$42,923,905	TOTAL

PASSED AND ADOPTED this 24th day of March 2026, in Castle Rock, Douglas County, Colorado.

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

BY:

_____

GEORGE TEAL, Chair

ATTEST:

_____

HAYLEY HALL, Clerk to the Board

Supplemental Appropriation - 2026 Budget Amendment

March 24, 2026

Department (Division)	Purchase Order #	Object Account	Amount	Description / Nature of Expenditure
GENERAL FUND - 100				
Legislative Services	2025318	802000.443600	$ 17,500	76 Group
Public Affairs	2025841	11600.443655	79,968	Loclyz Media Services
Elections and Registration	2025694	12500.474800	190,290	Clear Ballot Group
Planning & Zoning Services	2024665	16200.443600	19,450	**Hilltop Securities Inc**- Financial Consultant to provide as-needed review of service plan applications.
Planning & Zoning Services	2024670	16200.443600	5,395	**BBC Research & Consulting**- Consulting services to provide analysis of demographic trends, employment data, and other real estate market factors to support service plan application review.
Planning & Zoning Services	2024672	16200.443600	5,250	**CBRE Inc Valuation and Advisor**- Consultant to provide real estate market value appraisal services.
Planning & Zoning Services	2025220	16200.443600	6,885	Moore Engineering Inc
			$ 36,980	**TOTAL PLANNING & ZONING SERVICES**
Stormwater Management	2023136	30300.443600	64,250	**Aztec Surveying And Locating**- Additional utility locating work needs to be completed in 2026 for stormwater management.
Stormwater Management	2025007	30300.443600	44,671	Environmental Hazmat Services Inc
			$ 108,921	**TOTAL DEPARTMENT OF PUBLIC WORKS**
Vehicle Replacement	2025379	19210.474300	11,893	Lighting Accessory & Warning Systems
Vehicle Replacement	2025552	19210.474300	76,808	O J Watson Company Inc
			$ 88,701	**TOTAL VEHICLE REPLACEMENT**
IT Administration	2025213	18100.432100	29,401	Sempera
IT Administration	2025900	18100.432100	30,407	Bridgeview IT Inc
			$ 59,808	**TOTAL IT ADMINISTRATION**

Supplemental Appropriation - 2026 Budget Amendment

March 24, 2026

Department (Division)	Purchase Order #	Object Account	Amount	Description / Nature of Expenditure
Software Maintenance	2025129	18900.444500	$ 33,663	Oracle America Inc
Software Maintenance	2025135	18900.444500	4,928	CSST Software LLC
Software Maintenance	2025185	18900.444500	13,300	Webolutions Inc
Software Maintenance	2025296	18900.444500	16,840	GIS Peace LLC
Software Maintenance	2025315	18900.444500	2,798	Oracle America Inc
Software Maintenance	2025338	18900.444500	5,949	Contact Wireless
Software Maintenance	2025418	18900.444500	42,000	Circular Edge LLC
Software Maintenance	2025445	18900.444500	18,200	Computronix Inc
Software Maintenance	2025577	18900.444500	16,721	Filevine Inc
Software Maintenance	2025613	18900.432100	7,434	Bridgeview IT Inc
Software Maintenance	2025654	18900.444500	19,890	Smartel LLC
Software Maintenance	2025713	18900.444500	4,987	Mythics LLC
Software Maintenance	2025819	18900.444500	1,392	Optiv Security
Software Maintenance	2025835	18900.444500	7,350	Opengov Inc
Software Maintenance	2025869	18900.443600	18,090	Argis Solutions Inc
Software Maintenance	2025870	18900.444500	13,125	Consortech Solutions Inc
Software Maintenance	2025918	18900.444550	39,756	Filevine Inc
Software Maintenance	2025972	18900.444500	81,120	Cognizant Worldwide Limited
			$ 347,543	**TOTAL SOFTWARE MAINTENANCE**
Technology Fund	2024501	800900.444500	391,210	**ADP Inc**- The new payroll system is expected to be completed in 2027.
Technology Fund	2024821	800900.444550	27,966	**ADP Inc**- The new payroll system is expected to be completed in 2027.
Technology Fund	2025004	800900.432100	8,413	Sempera
Technology Fund	2025358	800900.443600	23,622	Computronix (USA) Inc
Technology Fund	2025359	800900.443600	817,435	Crowe LLP
Technology Fund	2025613	800900.444500	66,640	SK Global Software LLC
Technology Fund	2025636	800900.443600	8,329	Webolutions Inc
Technology Fund	2025777	800900.443600	78,469	Thirdera LLC
Technology Fund	2025809	800900.443600	1,688	Circular Edge LLC
Technology Fund	2025817	800900.443600	35,860	Genus Technologies LLC
Technology Fund	2025831	800900.443600	9,496	DEVIQ
Technology Fund	2025838	800900.444500	24,363	General Code LLC
Technology Fund	2025840	800900.432100	217,690	Akkodis Inc
Technology Fund	2025844	800900.443600	286,635	Crowe LLP
Technology Fund	2025851	800900.443600	223,728	Inceed LLC
Technology Fund	2025868	800900.443600	112,000	Sempera
Technology Fund	2025877	800900.443600	40,125	Circular Edge LLC
Technology Fund	2025935	800900.443600	33,041	Computronix (USA) Inc
Technology Fund	2025942	800900.432100	132,920	Inceed LLC
Technology Fund	2025957	800900.443600	16,865	Advanced Network Management
Technology Fund	2025968	800900.443600	100,000	Harris Corrections Solutions Inc
			$ 2,656,495	**TOTAL TECHNOLOGY FUND**

Supplemental Appropriation - 2026 Budget Amendment

March 24, 2026

Department (Division)	Purchase Order #	Object Account	Amount	Description / Nature of Expenditure
IT Infrastructure	2025746	802009.474500	$ 12,056	Beacon Communications LLC
IT Infrastructure	2025829	802009.474800	5,824	Advanced Network Management
IT Infrastructure	2025847	802009.438500	43,316	Beacon Communications LLC
IT Infrastructure	2025941	802009.444550	420,195	CDW Government LLC
			$ 481,391	**TOTAL INFRASTRUCTURE FUND**
			$ 3,545,237	**TOTAL INFORMATION TECHNOLOGY**
HB22-1281 CYF SFY2025	2025460	802031.443600	2,652	Health Management Associates
HB22-1281 CI SFY2025	2025088	802032.446500	163,752	National Council for Mental Wellbeing
Congressional Directed Spend	2025098	861608.443600	280,360	Savio House
County Emergency Preparedness	2025236	19275.443600	16,752	Tetra Tech Inc
Sheriff Training	2025583	21115.474300	69,580	Unicor Federal Prison Industries
Sheriff Training	2025689	21115.433700	110,241	Dooley Enterprises Inc
Sheriff Training	2025927	21115.433400	16,150	Lionheart Alliance LLC
			$ 195,971	**TOTAL SHERIFF TRAINING**
Professional Standards	2025894	21150.433500	19,723	Hard Head Veterans
Professional Standards	2025926	21150.433500	18,399	Absolute Graphics Inc
Professional Standards	2025966	21150.433500	115,010	Skaggs Companies Inc
			$ 153,132	**TOTAL PROFESSIONAL STANDARDS**

Supplemental Appropriation - 2026 Budget Amendment

March 24, 2026

Department (Division)	Purchase Order #	Object Account	Amount	Description / Nature of Expenditure
Hiring	2025026	21155.447900	$ 2,180	Baseline Associates
Court Services	2025037	21400.443350	36,427	Allied Universal Security Serv
Detention	2025309	21500.443100	31,776	Wellpath LLC
Emergency Management	2025669	21700.474300	4,948	Lighting Accessory & Warning Systems
Peace Officer Mental Health	2025605	802024.443600	49,265	Beyond the Badge LLC
Jail Based Behavioral Health 25-26	2025650	802045.443600	239,033	Allhealth Network
			$ 712,732	**TOTAL SHERIFF**
Building Development Services	2024001	24100.443600	85,600	**Jon P Dickey LLC**- On-call roof inspection services. Contract will expire in 2026.
Economic Development Services	2025680	65500.443600	6,678	Metro Denver Economic Development
Strong Communities Grant	2025856	802036.443450	30,831	Architerra Group Inc
LATCF - ARPA Revenue Sharing	2025525	861590.465100	231,186	Louviers Water & Sanitation District
Water Initiatives	2025180	890020.443600	248,528	Forsgren Associates Inc
TOTAL GENERAL FUND			***$ 5,846,668***	

**** The new amended budget for the General Fund is $201,591,068***

Supplemental Appropriation - 2026 Budget Amendment

March 24, 2026

Department (Division)	Purchase Order #	Object Account	Amount	Description / Nature of Expenditure
ROAD AND BRIDGE FUND - 200				
Fund Administration - Road & Bridge	2024414	31000.474100	$ 1,633,695	**O J Watson Company Inc**- New snowplow trucks expected to be received June 2026.
Fund Administration - Road & Bridge	2025596	31000.474300	198,577	Transwest Truck Trailer RV
			$ 1,832,272	**TOTAL FUND ADMINISTRATION - ROAD & BRIDGE**
Maintenance of Condition	2025014	31400.448200	114,291	Amrize West Central Inc
Maintenance of Condition	2025553	31400.474300	456,760	O J Watson Company Inc
Maintenance of Condition	2025599	31400.474300	441,724	O J Watson Company Inc
Maintenance of Condition	2025600	31400.474300	392,748	Transwest Truck Trailer RV
Maintenance of Condition	2025697	31400.448800	29,793	Envirotech Services Inc
Maintenance of Condition	2025771	31400.474800	86,717	ET Technologies Inc
Maintenance of Condition	2025944	31400.436200	18,002	Wear Parts & Equipment Co Inc
			$ 1,540,035	**TOTAL MAINTENANCE OF CONDITION**
Engineering - Traffic Signs/Striping	2024937	31600.474300	123,968	**Transwest GMC LLC**- Vehicle received February 2026.
			$ 123,968	**TOTAL ENGINEERING - TRAFFIC SIGNS/STRIPING**
Traffic Signal Asset Mgmt. Program	2023436	31660.474800	16,880	**Skyline Products Inc**- PO for Arterial VMS Sign Replacements. Final work is wrapping up and invoice is expecte end of March 2026.
Traffic Signal Asset Mgmt. Program	2025516	31660.443400	13,765	Collins Engineers Inc
			$ 30,645	**TOTAL TRAFFIC SIGNAL ASSET MGMT PROGRAM**
TOTAL ROAD & BRIDGE FUND			***$ 3,526,920***	

**** The new amended budget for the Road & Bridge Fund is $88,403,372***

Supplemental Appropriation - 2026 Budget Amendment

March 24, 2026

Department (Division)	Purchase Order #	Object Account	Amount	Description / Nature of Expenditure
LAW ENFORCEMENT AUTHORITY FUND - 220				
Environmental Hazards	2025955	21725.439200	$ 1,495	Farrwest Environmental Supply Inc
Patrol-LEA	2025402	22100.474300	23,917	Lighting Accessory & Warning Systems
Patrol-LEA	2025623	22100.438200	896	Pro Force Law Enforcement
Patrol-LEA	2025845	22100.474500	13,878	CDW Government LLC
			$ 38,691	**TOTAL PATROL - LEA**
Training - LEA	2024598	22115.433700	27,034	**Dooley Enterprises Inc**- Duty ammunition for Sherriff's Office has been on back order and is expected to be delivered in 2nd quarter of 2026.
Training - LEA	2025616	22115.433700	1,884	Salt Lake Wholesale Sports
Training - LEA	2025822	22115.433500	10,782	Absolute Graphics Inc
			$ 39,700	**TOTAL TRAINING - LEA**
Fleet - LEA	2024877	22120.474300	73,150	**Ken Garff Ford Greeley**- Vehicles received February 2026 and the final payment in processing.
Fleet - LEA	2025380	22120.474300	57,075	Lighting Accessory & Warning Systems
			$ 130,225	**TOTAL FLEET - LEA**
Traffic Section	2025399	22150.474300	3,875	Lighting Accessory & Warning Systems
Traffic Section	2025846	22150.474500	4,626	CDW Government
			$ 8,501	**TOTAL TRAFFIC SECTION - LEA**
Impact Unit/LEA	2025400	22500.474300	4,975	Lighting Accessory & Warning Systems
Impact Unit/LEA	2025895	225000.474300	9,404	Lighting Accessory & Warning Systems
			$ 14,379	**TOTAL IMPACT UNIT/LEA - LEA**
SWAT Team	2025615	822110.433700	20,775	Dooley Enterprises Inc
SWAT Team	2025652	822100.443600	150,000	South Metro Fire Rescue Author
SWAT Team	2025967	822110.433700	25,020	Adamson Police Products
			$ 195,795	**TOTAL SWAT TEAM - LEA**
TOTAL LAW ENFORCEMENT AUTHORITY FUND			***$ 428,786***	

**** The new amended budget for the Law Enforcement Authority Fund is $39,896,811***

Supplemental Appropriation - 2026 Budget Amendment

March 24, 2026

Department (Division)	Purchase Order #	Object Account	Amount	Description / Nature of Expenditure
DISTRICT ATTORNEY - 223				
DA 23RD - District JD Allocation	2025871	28014.443600	$ 30,000	23rd Judicial Dist Juvenile Asmt Ctr
TOTAL DISTRICT ATTORNEY - 223			***$ 30,000***	
**** The new amended budget for the District Attorney Fund is $16,958,303.***				
JUSTICE SALES AND USE TAX FUND - 240				
RA Christensen Justice Center	2025953	33210.474500	6,624	Govconnection Inc
Justice Center Facility Improvements	2025210	33215.472300	5,342	Brannan Aggregates
Justice Center Facility Improvements	2025607	33215.478200	32,914	Continental Partition Systems LLC
			$ 38,256	**TOTAL JUSTICE CENTER FACILITY IMPROVEMENTS**
DSO Communications Network	2025778	33220.474350	132,600	Motorola Solutions Inc
DSO Communications Network	2025882	33220.474350	145,507	Thinair Communications Inc
			$ 278,107	**TOTAL DSO COMMUNICATIONS NETWORK**
Simulcast Project	2022993	870053.474350	1,864,682	**Motorola Solutions Inc** - The Simulcast project is slated to be complete by end of summer 2026. The original completion date was to be December, 2024, but additional site engineering activities needed to be performed. A full NEPA study was required by FWS and the SHPO with the discovery of an endangered species and after input from the GESC review board on the final design, it was determined that additional soil stabilization and fabric work must be completed.
			$ 1,864,682	**TOTAL SIMULCAST PROJECT**
TOTAL JUSTICE SALES AND USE TAX FUND			***$ 2,187,669***	
**** The new amended budget for the Justice Sales and Use Tax Fund is $34,979,741***				

Supplemental Appropriation - 2026 Budget Amendment

March 24, 2026

Department (Division)	Purchase Order #	Object Account	Amount	Description / Nature of Expenditure
RUETER-HESS RECREATIONAL AREA FUND - 245				
Entrance Improvements	2025909	850903.474800	$ 17,204	UPM Mechanical LLC
Entrance Improvements	2025930	850903.473500	12,333	Yoder's Storage Sheds LLC
TOTAL RUETER-HESS RECREATIONAL AREA FUND			**$ 29,537**	
*** The new amended budget for the Rueter-Hess Recreational Area Fund is $1,275,063**				
PARKS AND OPEN SPACE SALES AND USE TAX FUND - 250				
Open Space Major Maintenance (80%)	2022140	53310.473600	45,518	**53 Corporation LLC** - Per Engineering - minor work is still being performed at Glendale Dog Park and should be complete in 2026.
Open Space	2024221	53500.474300	6,797	**Lighting Accessory & Warning Systems**- Vehicle upfit expected to be complete April 2026.
Open Space	2024313	53500.443600	13,748	**ERO Resources Corporation**- Douglas County regional habitat conservation plan (HCP) regarding the way we handle impacts to Preble's meadow jumping mouse habitat. This process is ongoing in 2026.
Open Space	2025023	53500.444700	32,087	Fireside Masonry & Construction
Open Space	2025325	53500.474350	177	Motorola Solutions Inc
Open Space	2025523	53500.447500	2,686	QDC Ranch Services LLC
Open Space	2025588	53500.444700	40,330	US Door and Dock Service
Open Space	2025589	53500.474300	11,651	Lighting Accessory & Warning Systems
Open Space	2025618	53500.443600	2,830	McCarty Land & Water Valuation Inc
Open Space	2025791	53500.444700	2,019	Fireside Masonry & Construction
Open Space	2025849	53500.444700	58,303	Advanced Property Maintenance
Open Space	2025850	53500.444700	104,838	Timberline Trailcraft LLC
			$ 320,984	**TOTAL OPEN SPACE**
Historic Resources	2025181	53600.443600	16,492	Interpret Site LLC
Historic Resources	2025355	53600.443600	14,930	Scheuber & Darden Architects
			$ 31,422	**TOTAL HISTORIC RESOURCES**

Supplemental Appropriation - 2026 Budget Amendment

March 24, 2026

Department (Division)	Purchase Order #	Object Account	Amount	Description / Nature of Expenditure
Greenland Post Office	2024942	807012.443600	$ 8,536	**Scheuber & Darden Architects**- The project involves review services and construction administration for restoration work on the historic Greenland Post Office.
Greenland Post Office	2024972	807012.472300	74,950	**Deep Roots Craftsmen**- The project involves restoration work on the historic Greenland Post Office.
			$ 83,486	**TOTAL GREENLAND POST OFFICE**
Rockshelter Historic	2024867	807015.443600	170,215	**ERO Resources Corporation**- The multi-year project is grant funded and involves data analysis, final reporting, and tribal consultation for the site.
Miksch Helmer Cabin Historic	2024866	807016.443600	6,467	**Scheuber & Darden Architects**- The multi-year project is grant funded and involves review services and construction administration for restoration work on the historic Miksch Helmer Cabin.
Miksch Helmer Cabin Historic	2024890	807016.472300	74,191	**Empire Carpentry**- The multi-year project is grant funded and involves professional services related to exterior rehabilitation and porch reconstruction of the historic Miksch Helmer Cabin.
			$ 80,658	**TOTAL MIKSCH HELMER CABIN HISTORIC**
Evans Homestead	2024944	807017.472300	111,950	**Empire Carpentry**- This project involves the restoration and preservation of Evans Homestead – phase 2. The project progressed in 2025 but required additional time to complete due to delays in coordinating with the Land Conservancy. Work should be completed by May 31, 2026.
Spring Valley	2024855	807018.472300	50,095	**Deep Roots Craftsmen**- This project involves stabilization and rehabilitation of the Spring Valley School. Project progressed in 2025 but required additional time and funding due to additional scope and costs incurred. Work should be completed by May 31, 2026.
Spring Valley	2024856	807018.472300	10,805	**Scheuber & Darden Architects**- The project involves review services and construction administration for restoration work on the historic Spring Valley Schoolhouse. This project required additional time due to increased scope. Work should be completed by May 31, 2026.
			$ 60,900	**TOTAL SPRING VALLEY**

Supplemental Appropriation - 2026 Budget Amendment

March 24, 2026

Department (Division)	Purchase Order #	Object Account	Amount	Description / Nature of Expenditure
Bayou Gulch Historic Preservation	2024883	807022.443600	$ 1,589	**ERO Resources Corporation**- The multi-year project is grant funded and involves archaeological field work in documenting and monitoring erosion at the site.
East West Regional Trail	2024194	850811.473500	38,230	**Architerra Group Inc**- Signage and wayfinding project expected to be completed end of 2026.
Macanta Regional Park	2024424	850817.435000	42,644	**Architerra Group Inc**- Macanta Park is in design stages with construction expected to start 2026 Q3.
Crull Hammond Cabin	2024865	850843.443600	1,100	**Deep Roots Craftsmen**- This project involves emergency restoration work on the Crull Hammond Cabin roof under a contract originally executed on September 16, 2024. Project required additional time.
Zebulon Park Project	2025668	850844.472200	33,846	Wember Inc
FRWRM Program SB23-214	2025449	861063.447500	26,256	Dove Creek Forestry Inc
TOTAL PARKS AND OPEN SPACE SALES AND USE TAX FUND			***$ 1,003,280***	

**** The new amended budget for the Parks and Open Space Sales and Use Tax Fund is $24,538,991***

SOLID WASTE DISPOSAL FUND - 275

Biochar	2025698	870079.474100	320,583	Complete Solutions Consulting Intl Inc
Biochar	2025699	870079.474100	99,209	Complete Solutions Consulting Intl Inc
Biochar	2025703	870079.474100	222,808	Complete Solutions Consulting Intl Inc
Biochar	2025815	870079.443600	1,525	Carbon Dynamics LLP
TOTAL SOLID WASTE DISPOSAL FUND			***$ 644,125***	

**** The new amended budget for the Solid Waste Disposal Fund is $1,504,125.***

Supplemental Appropriation - 2026 Budget Amendment

March 24, 2026

Department (Division)	Purchase Order #	Object Account	Amount	Description / Nature of Expenditure
AMERICAN RESCUE PLAN ACT FUND - 296				
American Rescue Plan Act	2025253	861572.474350	$ 2,195	First Responder Communications
American Rescue Plan Act	2025278	861572.465100	1,594,642	Town of Castle Rock
American Rescue Plan Act	2025281	861572.465100	2,528,768	Dominion Water and Sanitation District
American Rescue Plan Act	2025416	861572.433400	130	Multicopter Warehouse
American Rescue Plan Act	2025950	861572.443600	135,766	Tessa
			$ 4,261,501	**TOTAL AMERICAN RESCUE PLAN ACT**
ARPA-Revenue Replacement	2023687	861577.465100	692,193	**Sedalia Water & Sanitation District**- PO is on a reimbursement basis and Sedalia Water & Sanitation will complete the project before the end of 2026.
ARPA-Revenue Replacement	2023688	861577.465100	1,734,259	**Louviers Water & Sanitation District**- PO is on a reimbursement basis and Louviers Water & Sanitation will complete the project before the end of 2026.
ARPA-Revenue Replacement	2025089	861577.465100	6,709	Defy Them All LLC
ARPA-Revenue Replacement	2025092	861577.465100	24,625	The Aspen Effect
ARPA-Revenue Replacement	2025279	861577.465100	4,282,284	Town of Castle Rock
ARPA-Revenue Replacement	2025282	861577.465100	8,092,695	Dominion Water and Sanitation District
			$ 14,832,765	**TOTAL ARPA-REVENUE REPLACEMENT**
ARPA - Care Compact	2025086	861582.443600	124,728	Allhealth Network
ARPA - Care Compact	2025095	861582.443600	229,893	Developmental Pathways Inc
ARPA - Care Compact	2025097	861582.443600	60,158	Church of The Rock
			$ 414,779	**TOTAL ARPA-CARE COMPACT**
ARPA Dominion HWY 85 Wastewater	2025283	861585.465100	1,913,941	Dominion Water and Sanitation District
ARPA - Highway 85 Wastewater	2025280	861586.465100	6,948,231	Town of Castle Rock
TOTAL AMERICAN RESCUE PLAN ACT FUND			***$ 28,371,217***	

**** The new amended budget for the American Rescue Plan Act Fund is $28,371,217***

Supplemental Appropriation - 2026 Budget Amendment

March 24, 2026

Department (Division)	Purchase Order #	Object Account	Amount	Description / Nature of Expenditure
CAPITAL EXPENDITURE FUND - 330				
Heroes Hall - Fairground	2025188	870076.472200	$ 160,000	DLH Architecture LLC
P.W. Complex Facilities	2025268	33300.438800	5,442	Security Central Inc
Fairground Land and Facilities	2025269	33550.438800	15,366	Security Central Inc
Fairground Land and Facilities	2025873	33550.478200	11,686	C3 Interiors LLC
			$ 27,052	**TOTAL FAIRGROUND LAND AND FACILITIES**
Sedalia PW Facility	2025704	870080.472100	56,607	DLH Architecture LLC
TOTAL CAPITAL EXPENDITURE FUND			***$ 249,101***	
**** The new amended budget for the Capital Expenditure Fund is $1,473,598***				
Local Improvement District Fund - 350				
Spring Canyon LID	2025419	800731.443600	$ 7,041	Kumar and Associates Inc
Spring Canyon LID	2025511	800731.443600	403,700	TST Infrastructure LLC
			$ 410,741	**TOTAL SPRING CANYON LID**
Bannock Dr 2023 LID	2025559	800732.443600	185,705	TST Infrastructure LLC
TOTAL LOCAL IMPROVEMENT DISTRICT FUND			***$ 596,446***	
**** The new amended budget for the Capital Expenditure Fund is $683,946***				
LIABILITY AND PROPERTY INSURANCE FUND - 630				
Liability and Property Ins	2025766	19450.458100	10,156	TCC Corporation
TOTAL LIABILITY AND PROPERTY INSURANCE FUND			***$ 10,156***	
**** The new amended budget for the Liability and Property Insurance Fund is $4,673,856***				
TOTAL ALL FUNDS - 2026 SUPPLEMENTAL			***$ 42,923,905***	

Douglas County Government
2026 Amended Budget Rollforward

Funds	2026 Adopted Budget	#26-01 Amended (3/24/26)	#26-02 Amended	#26-03 Amended	#26-04 Amended	#26-05 Amended	Total Amended Budget	% Change Adopted Budget	Transfer In	Total Budget Appropriations
Revenues										
100 General	193,473,464						193,473,464	0.0%	31,471,222	224,944,686
200 Road & Bridge	68,004,400						68,004,400	0.0%		68,004,400
210 Human Services	62,579,929						62,579,929	0.0%	3,573,825	66,153,754
215 Developmental Disabilities	10,398,500						10,398,500	0.0%		10,398,500
217 DC Health Department	992,315						992,315	100.0%	2,466,452	3,458,767
220 Law Enforcement Authority	30,851,400						30,851,400	0.0%	8,380,417	39,231,817
221 Safety and Mental Health	7,912,049						7,912,049	100.0%	780,000	8,692,049
223 District Attorney JD23	2,087,533						2,087,533		14,840,770	16,928,303
225 Infrastructure Fund	0						0			0
230 Road Sales & Use Tax	49,495,080						49,495,080	0.0%		49,495,080
235 Transportation Infrastructure Sales & Use Tax	21,897,800						21,897,800	0.0%		21,897,800
240 Justice Center Sales & Use Tax	28,946,925						28,946,925	0.0%		28,946,925
245 Rueter-Hess Recreation	716,000						716,000	100.0%	250,000	966,000
250 Parks and Open Space Sales & Use Tax	20,042,909						20,042,909	0.0%		20,042,909
260 Conservation Trust	1,700,000						1,700,000	0.0%		1,700,000
265 Lincoln Station Sales Tax Improvement	50,000						50,000	0.0%		50,000
275 Waste Disposal	200,000						200,000	0.0%	375,000	575,000
280 Woodmoor Mountain	41,590						41,590	0.0%		41,590
295 Rocky Mountain HIDTA	1,244,871						1,244,871	0.0%		1,244,871
296 American Rescue Plan Act (ARPA)	0	18,931,662					18,931,662	100.0%		18,931,662
297 Property Tax Relief	0						0			0
330 Capital Expenditures	1,559,800						1,559,800	0.0%		1,559,800
350 LID Capital Construction	85,200						85,200	0.0%		85,200
390 Capital Replacement	0						0	0.0%		0
410 Debt Service	0						0	0.0%		0
620 Employee Benefits Self-Insurance	2,757,400						2,757,400	0.0%		2,757,400
630 Liability and Property Self-Insurance	4,663,700						4,663,700	0.0%		4,663,700
640 Medical Insurance Self-Insurance	35,536,083						35,536,083	0.0%	1,000,000	36,536,083
Total All Funds	**545,236,948**	**18,931,662**	**0**	**0**	**0**	**0**	**564,168,610**	**3.5%**	**63,137,686**	**627,306,296**

Funds	2026 Adopted Budget	#26-01 Amended (3/24/26)	#26-02 Amended	#26-03 Amended	#26-04 Amended	#26-05 Amended	Adjustments	Total Amended Budget	% Change	Transfer Out	Total Budget Appropriations
Expenditures											
100 General	195,744,400	5,846,668						201,591,068	3.0%	31,041,464	232,632,532
200 Road & Bridge	84,034,627	3,526,920						87,561,547	4.2%	841,825	88,403,372
210 Human Services	66,594,132							66,594,132	0.0%		66,594,132
215 Developmental Disabilities	10,398,500							10,398,500	0.0%		10,398,500
217 DC Health Department	3,458,767							3,458,767	100.0%		3,458,767
220 Law Enforcement Authority	39,468,025	428,786						39,896,811	1.1%		39,896,811
221 Safety and Mental Health	9,555,395							9,555,395	0.0%		9,555,395
223 District Attorney JD23	16,928,303	30,000						16,958,303	0.2%		16,958,303
225 Infrastruce Fund	442,802							442,802	0.0%		442,802
230 Road Sales & Use Tax	93,698,671							93,698,671	0.0%	750,000	94,448,671
235 Transportation Infrastructure Sales & Use Tax	46,936,399							46,936,399	0.0%	500,000	47,436,399
240 Justice Center Sales & Use Tax	3,547,497	2,187,669						5,735,166	61.7%	29,244,575	34,979,741
245 Rueter-Hess Recreation	1,245,526	29,537						1,275,063	100.0%		1,275,063
250 Parks and Open Space Sales & Use Tax	23,285,711	1,003,280						24,288,991	4.3%	250,000	24,538,991
260 Conservation Trust	8,073,251							8,073,251	0.0%		8,073,251
265 Lincoln Station Sales Tax Improvement	50,000							50,000	0.0%		50,000
275 Waste Disposal	860,000	644,125						1,504,125	74.9%		1,504,125
280 Woodmoor Mountain	48,310							48,310	0.0%		48,310
295 Rocky Mountain HIDTA	1,219,971							1,219,971	0.0%	24,900	1,244,871
296 American Rescue Plan Act (ARPA)	0	28,371,217						28,371,217	100.0%		28,371,217
297 Property Tax Relief	0							0			0
330 Capital Expenditures	1,224,497	249,101						1,473,598	20.3%		1,473,598
350 LID Capital Construction	2,500	596,446						598,946	23857.8%	85,000	683,946
390 Capital Replacement	0							0	0.0%	399,922	399,922
410 Debt Service	0							0	0.0%		0
620 Employee Benefits Self-Insurance	2,757,400							2,757,400	0.0%		2,757,400
630 Liability and Property Self-Insurance	4,663,700	10,156						4,673,856	0.2%		4,673,856
640 Medical Insurance Self-Insurance	36,536,083							36,536,083	0.0%		36,536,083
Total All Funds	**650,774,467**	**42,923,905**	**0**	**0**	**0**	**0**		**693,698,372**	**6.6%**	**63,137,686**	**756,836,058**

Detailed explanations for each supplemental budget can be found at http://www.douglas.co.us/finance/ under the section titled "Budget Division".

General Fund (Fund 100)
Fund Summary

		2024 Audited Actuals	2025 Adopted Budget	2025 Amended Budget	2025 Estimated Actuals	2026 Adopted Budget	2026 Amended Budget
1	**Beginning Fund Balance**	**$ 51,413,343**	**$ 33,288,064**	**$ 57,758,310**	**$ 57,758,310**	**$ 36,546,502**	**$ 65,043,888**
	Revenues						
2	*Taxes*	$ 113,769,987	$ 139,056,500	$ 139,056,500	$ 137,989,761	$ 145,662,100	$ 145,662,100
3	*Licenses and Permits*	8,972,885	8,481,700	8,481,700	6,729,370	7,104,000	7,104,000
4	*Intergovernmental*	7,429,909	1,986,750	13,454,208	7,517,819	492,750	492,750
5	*Charges for Services*	29,242,934	26,294,425	26,791,825	30,652,888	30,466,964	30,466,964
6	*Fines and Forfeits*	181,520	156,200	180,111	212,827	197,800	197,800
7	*Earnings on Investments*	15,929,449	6,500,000	6,500,000	7,459,640	6,500,000	6,500,000
8	*Donations and Contributions*	506,245	260,000	260,000	321,604	260,000	260,000
9	*Other Revenues*	7,793,601	2,396,300	2,570,825	9,574,939	2,789,850	2,789,850
	Transfers In:						
10	*Capital Replacement Fund*	990,000	603,000	603,000	603,000	399,922	399,922
11	*Road & Bridge Fund*	107,000	440,821	440,821	440,821	466,825	466,825
12	*Transportation Fund*	500,000	500,000	500,000	500,000	500,000	500,000
13	*Justice Center Sales Tax Fund*	26,663,462	27,729,150	28,046,100	28,229,072	29,244,575	29,244,575
14	*Parks and Open Space Sales & Use Tax Fund*			1,679,009	1,676,009	0	0
15	*Road Sales Tax Fund-Engineering Svc*	750,000	750,000	750,000	750,000	750,000	750,000
16	*RMHIDTA*	24,900	24,900	24,900	24,900	24,900	24,900
17	*American Recovery Plan Act Fund*	0	0	830,000	830,000	0	0
18	*Property Tax Relief Fund*	0	0	48,609	48,609	0	0
19	*LID Capital Construction Fund*	894,000	85,000	85,000	85,000	85,000	85,000
20	*Medical Self-Insurance Fund*	0	2,000,000	2,000,000	2,000,000	0	0
21	*Total Transfers In*	*29,929,362*	*32,132,871*	*35,007,439*	*35,187,411*	*31,471,222*	*31,471,222*
22	**Total Revenues and Transfers In**	**$ 213,755,893**	**$ 217,264,746**	**$ 232,302,608**	**$ 235,646,258**	**$ 224,944,686**	**$ 224,944,686**
	Expenditures by Function						
23	*Personnel*	$ 125,326,367	$ 133,829,689	$ 137,713,110	$ 132,534,992	$ 135,842,837	$ 135,842,837
24	*Supplies*	7,887,968	7,638,134	8,041,893	7,430,860	7,602,096	7,602,096
25	*Controllable Assets*	407,675	1,180,378	717,963	583,244	1,182,578	1,182,578
26	*Purchased Services*	45,380,472	34,880,662	57,281,854	36,791,298	43,890,754	43,890,754
27	*Building Materials*	346	0	0	0	0	0
28	*Fixed Charges*	9,736,914	12,186,225	13,421,247	10,917,996	13,369,495	13,369,495
29	*Debt Service*	5,725,972	0	0	5,507,804	0	0
30	*Grants and Contributions*	2,355,684	986,470	1,592,784	907,251	786,656	786,656
31	*Intergovernmental Support*	592,929	603,548	606,668	556,844	603,548	603,548
32	*Interdepartmental Charges*	(11,547,502)	(11,494,167)	(11,494,167)	(11,601,809)	(11,203,564)	(11,203,564)
33	*Capital Outlay*	4,646,776	5,134,950	2,052,423	9,128,773	0	0
34	*Computer Equipment*	1,136,629	2,086,000	2,891,286	1,149,008	2,000,000	2,000,000
35	*Vehicle Replacements*	1,396,843	1,485,000	1,506,898	1,204,719	670,000	670,000
36	*Contingency*	0	2,000,000	610,148	0	1,000,000	1,000,000
	Transfers Out						
37	*To Law Enforcement Authority Fund*	2,923,400	7,774,019	7,774,019	7,774,019	8,380,417	8,380,417
38	*To Security and Mental Health Fund*	625,000	200,000	200,000	200,000	780,000	780,000
39	*To District Attorney Fund*	0	12,580,171	12,849,375	12,849,375	14,840,770	14,840,770
40	*To Capital Expenditures Fund*	88,000	0	3,435,000	3,435,000	0	0
41	*To Solid Waste Disposal Fund*	275,950	0	3,000,000	3,000,000	0	0
42	*To LID Capital Construction Fund*	0	0	0	0	0	0
42	*To Human Services Fund*	3,858,140	4,195,916	4,195,916	3,884,871	3,573,825	3,573,825
43	*To Medical Self-Insurance Fund*	2,500,000	0	0	0	1,000,000	1,000,000
44	*To Health Fund*	2,123,247	2,106,435	2,106,435	2,106,435	2,466,452	2,466,452
45	*Total Transfers Out*	*12,393,737*	*26,856,541*	*33,560,745*	*33,249,700*	*31,041,464*	*31,041,464*
46	*Encumbrances Re-appropriated (Supplemental #01-26)*						*5,846,668*
47	**Total Expenditures and Transfers Out**	**$ 205,440,810**	**$ 217,373,430**	**$ 248,502,852**	**$ 228,360,681**	**$ 226,785,864**	**$ 232,632,532**
48	*Change In Fund Balance*	8,315,083	(108,684)	(16,200,244)	7,285,578	(1,841,178)	(7,687,846)
49	**Ending Fund Balance**	**$ 59,728,426**	**$ 33,179,380**	**$ 41,558,066**	**$ 65,043,888**	**$ 34,705,324**	**$ 57,356,042**
	Fund Balance Detail						
50	*Non-spendable Fund Balance*	*$ 3,108,325*	*$ 4,281,147*	*$ 3,108,325*	*$ 3,108,325*	*$ 3,108,325*	*$ 3,108,325*
51	*Restricted Fund Balance*	*19,686,825*	*11,379,319*	*13,387,222*	*14,863,396*	*13,375,462*	*14,863,396*
52	*Committed Fund Balance*	*3,724,698*	*5,000,000*	*5,000,000*	*12,284,743*	*5,000,000*	*7,508,209*
53	*Assigned Fund Balance - Required Per Policy*	*7,696,913*	*8,425,722*	*6,689,054*	*9,179,137*	*6,689,054*	*7,337,959*
54	*Assigned Fund Balance - Carry Forward*	*4,723,045*	*0*	*0*	*8,372,321*	*0*	*7,302,187*
55	*Assigned Fund Balance - Initiatives*	*20,625,000*	*6,500,000*	*12,125,000*	*17,230,000*	*6,350,000*	*17,230,000*
56	*Unassigned Fund Balance Available*	*2,099,837*	*15,706*	*1,248,465*	*5,965*	*182,483*	*5,965*
57	*Unrealized Gains & Losses Adjustment*	*(1,936,216)*	*(2,422,514)*	*0*	*0*	*0*	*0*
58	**Ending Fund Balance**	**$ 59,728,426**	**$ 33,179,380**	**$ 41,558,066**	**$ 65,043,888**	**$ 34,705,324**	**$ 57,356,042**

Douglas County Government
Road and Bridge Fund (Fund 200)
Fund Summary

		2024 Audited Actuals	2025 Adopted Budget	2025 Amended Budget	2025 Estimated Actuals	2026 Adopted Budget	2026 Amended Budget
1	**Beginning Fund Balance**	**$ 36,970,336**	**$ 26,188,606**	**$ 35,278,429**	**$ 35,278,429**	**$ 29,971,144**	**$ 35,869,719**
	Revenues						
2	*Taxes*	$ 54,040,895	$ 53,977,000	$ 53,977,000	$ 54,169,684	$ 53,946,800	$ 53,946,800
3	*Licenses and Permits*	1,165,802	899,500	899,500	1,386,858	1,105,100	1,105,100
4	*Intergovernmental*	13,342,578	12,260,000	12,335,477	12,085,751	12,600,000	12,600,000
5	*Charges for Services*	3,500	1,500	1,500	2,000	1,500	1,500
6	*Earnings on Investments*	0	0	0	0	0	0
7	*Donations and Contributions*	0	0	0	0	0	0
8	*Other Revenues*	288,110	130,000	731,017	1,001,705	351,000	351,000
9	**Total Revenues and Transfers In**	**$ 68,840,885**	**$ 67,268,000**	**$ 67,944,494**	**$ 68,645,997**	**$ 68,004,400**	**$ 68,004,400**
	Expenditures by Function						
10	*Personnel*	$ 14,115,966	$ 15,090,384	$ 14,962,644	$ 14,790,856	$ 15,336,721	$ 15,336,721
11	*Supplies*	944,899	2,405,686	2,143,580	1,064,012	2,551,186	2,551,186
12	*Controllable Assets*	66,014	77,600	82,822	66,223	27,600	27,600
13	*Purchased Services*	3,128,939	1,608,180	3,941,635	3,512,096	2,209,078	2,209,078
14	*Building Materials*	6,101,677	6,207,331	5,941,792	5,745,030	6,207,331	6,207,331
15	*Fixed Charges*	4,395,974	7,236,707	4,541,582	4,303,518	5,060,581	5,060,581
16	*Grants and Contributions*	682,265	100,000	100,500	659,787	100,000	100,000
17	*Intergovernmental Support*	8,812,046	9,429,516	9,995,262	9,575,762	9,215,726	9,215,726
18	*Equipment Replacements/New*	3,969,260	1,275,000	1,615,956	483,446	1,645,000	1,645,000
19	*Pavement Management*	22,246,636	22,140,730	20,864,170	16,912,258	25,596,402	25,596,402
20	*Engineering Storm Drainage*	0	6,186,264	7,491,816	0	0	0
21	*Capital Projects/Re-appropriation*	5,962,116	7,730,301	13,726,169	8,606,459	15,585,002	15,585,002
22	*Contingency*	0	500,000	500,000	0	500,000	500,000
23	*Transfers Out:*						
24	*To General Fund*	107,000	440,821	440,821	440,821	466,825	466,825
25	*To Local Improvement (LID) Fund*	0	0	1,461,565	1,461,565	0	0
26	*To Solid Waste Disposal Fund*	0	0	432,875	432,875	375,000	375,000
27	*Total Transfers Out*	*107,000*	*440,821*	*2,335,261*	*2,335,261*	*841,825*	*841,825*
28	*Encumbrances Re-appropriated (Supplemental #01-26)*						*3,526,920*
29	**Total Expenditures and Transfers Out**	**$ 70,532,792**	**$ 80,428,520**	**$ 88,243,190**	**$ 68,054,707**	**$ 84,876,452**	**$ 88,403,372**
30	*Change In Fund Balance*	*(1,691,907)*	*(13,160,520)*	*(20,298,696)*	*591,290*	*(16,872,052)*	*(20,398,972)*
31	**Ending Fund Balance**	**$ 35,278,429**	**$ 13,028,086**	**$ 14,979,733**	**$ 35,869,719**	**$ 13,099,092**	**$ 15,470,747**
	Fund Balance Detail						
32	*Non-spendable Fund Balance*	*$ 2,738,970*	*$ 3,172,732*	*$ 2,738,970*	*$ 3,012,867*	*$ 2,738,970*	*$ 3,012,867*
33	*Restricted Fund Balance*	*0*	*0*	*0*	*0*	*0*	*0*
34	*Committed Fund Balance*	*8,955,981*	*0*	*0*	*3,478,273*	*0*	*0*
35	*Committed Fund Balance - Required per Policy*	*9,127,776*	*8,661,629*	*9,127,776*	*26,922,052*	*9,127,776*	*10,050,000*
36	*Committed fund Balance - Initiatives*	*1,000,000*	*1,000,000*	*1,000,000*	*1,000,000*	*1,000,000*	*1,000,000*
37	*Committed Fund Balance - Available*	*13,455,702*	*193,725*	*2,112,987*	*1,456,526*	*232,346*	*1,407,880*
38	**Ending Fund Balance**	**$ 35,278,429**	**$ 13,028,086**	**$ 14,979,733**	**$ 35,869,719**	**$ 13,099,092**	**$ 15,470,747**

Douglas County Government
Law Enforcement Authority Fund (Fund 220)
Fund Summary

		2024 Audited Actuals	2025 Adopted Budget	2025 Amended Budget	2025 Estimated Actuals	2026 Adopted Budget	2026 Amended Budget
1	***Beginning Fund Balance***	**$ 7,645,303**	**$ 7,835,110**	**$ 8,457,982**	**$ 8,457,982**	**$ 7,776,358**	**$ 9,628,190**
	Revenues						
2	*Taxes*	$ 28,141,359	$ 27,987,600	$ 27,987,600	$ 27,877,432	$ 27,312,000	$ 27,312,000
3	*Intergovernmental*	65,858	0	89,000	84,561	0	0
4	*Charges for Services*	2,209,656	2,166,800	2,166,800	2,313,969	2,249,000	2,249,000
5	*Fines and Forfeits*	954,923	1,005,400	1,005,400	958,913	960,400	960,400
6	*Earnings on Investments*	630,059	400,000	400,000	627,427	300,000	300,000
7	*Donations and Contributions*						
8	*Miscellaneous Revenues*	4,681	0	7,301	64,794	0	0
9	*Other Financing Sources*	66,225	0	0	42,550	30,000	30,000
10	*Transfers In - General Fund*	2,923,400	7,774,019	7,774,019	7,774,019	8,380,417	8,380,417
11	***Total Revenues and Transfers In***	**$ 34,996,161**	**$ 39,333,819**	**$ 39,430,120**	**$ 39,743,664**	**$ 39,231,817**	**$ 39,231,817**
	Expenditures by Function						
12	*Personnel*	$ 27,773,772	$ 31,901,173	$ 31,895,673	$ 30,957,227	$ 33,263,610	$ 33,263,610
13	*Supplies*	637,908	831,100	884,231	770,670	611,450	611,450
14	*Controllable Assets*	48,218	104,400	123,705	149,294	40,000	40,000
15	*Purchased Services*	673,574	997,700	1,150,300	770,104	985,850	985,850
16	*Fixed Charges*	2,957,271	3,000,377	3,175,610	3,169,515	2,958,115	2,958,115
17	*Debt Service*	137,548	0	0	135,100	0	0
18	*Grants and Contributions*	2,245	60,000	60,100	60,114	0	0
19	*Capital Outlay*	1,952,946	2,495,100	2,779,236	2,561,433	1,509,000	1,509,000
20	*Contingency*	0	100,000	24,900	0	100,000	100,000
21	*Encumbrances Re-appropriated (Supplemental #01-26)*						*428,786*
22	***Total Expenditures and Transfers Out***	**$ 34,183,482**	**$ 39,489,850**	**$ 40,093,755**	**$ 38,573,456**	**$ 39,468,025**	**$ 39,896,811**
23	*Change In Fund Balance*	812,679	(156,031)	(663,635)	1,170,208	(236,208)	(664,994)
24	***Ending Fund Balance***	**$ 8,457,982**	**$ 7,679,079**	**$ 7,794,347**	**$ 9,628,190**	**$ 7,540,150**	**$ 8,963,196**
	Fund Balance Detail						
25	*Non-spendable Fund Balance*	$ 9,010	$ 17,392	$ 17,392	$ 17,392	$ 0	$ 0
26	*Restricted Fund Balance - Required per policy*	7,520,700	6,983,306	7,364,669	8,327,344	7,193,306	7,995,036
27	*Restricted Available - Available*	928,272	678,381	412,286	1,283,454	346,844	968,160
28	*Committed Fund Balance*	*0*	*0*	*0*	*0*	*0*	*0*
29	***Ending Fund Balance***	**$ 8,457,982**	**$ 7,679,079**	**$ 7,794,347**	**$ 9,628,190**	**$ 7,540,150**	**$ 8,963,196**

Douglas County Government
District Attorney JD23 Fund (Fund 223)
Fund Summary

		2025 Adopted Budget	2025 Amended Actuals	2025 Estimated Actuals	2026 Adopted Budget	2026 Amended Budget
1	***Beginning Fund Balance***	**$ 0**	**$ 0**	**$ 0**	**$ 0**	**$ 165,137**
	Revenues					
2	*Intergovernmental*	$ 1,665,711	$ 2,183,321	$ 2,373,079	$ 1,987,533	$ 1,987,533
3	*Charges for Services*	53,500	53,500	0	100,000	100,000
4	*Fines & Forfeits*	0	0	186,422	0	0
5	*Earnings on Investments*	0	0	0	0	0
6	*Other Revenues*	0	0	21,696	0	0
7	Transfer-In General Fund	12,580,171	12,849,375	12,849,375	14,840,770	14,840,770
8	*Total Revenues and Transfe In*	**$ 14,299,382**	**$ 15,086,196**	**$ 15,430,572**	**16,928,303**	**$ 16,928,303**
	Expenditures by Function					
9	*Personnel*	$ 13,889,682	$ 13,831,292	$ 13,926,937	$ 16,044,906	$ 16,044,906
10	*Supplies*	56,970	81,091	61,215	81,091	81,091
11	*Controllable Assets*	0	0	0	0	0
12	*Purchased Services*	278,480	819,865	918,649	599,802	599,802
13	*Fixed Charges*	19,250	79,137	72,201	57,504	57,504
14	*Interdepartmental Charges*	0	0	17,095	0	0
15	*Capital*	55,000	274,811	269,339	145,000	145,000
16	*Contingency*	0	0	0	0	0
17	*Encumbrances Re-appropriated (Supplemental #01-26)*					*30,000*
18	***Total Expenditures and Transfers Out***	*$ 14,299,382*	*$ 15,086,196*	*$ 15,265,436*	*$ 16,928,303*	*$ 16,958,303*
19	*Change In Fund Balance*	*0*	*0*	*165,137*	*0*	*(30,000)*
20	***Ending Fund Balance***	**$ 0**	**$ 0**	**$ 165,137**	**$ 0**	**$ 135,137**
	Fund Balance Detail					
21	*Non-spendable Fund Balance*	$ 0	$ 0	$ 0	$ 0	$ 0
22	*Restricted Fund Balance*	0	0	0	0	0
23	*Committed Fund Balance*	0	0	0	0	0
24	*Assigned Fund Balance*	0	0	165,137	0	135,137
25	***Ending Fund Balance***	**$ 0**	**$ 0**	**$ 165,137**	**$ 0**	**$ 135,137**

Douglas County Government
Justice Center Sales and Use Tax Fund (Fund 240)
Fund Summary

		2024 Audited Actuals	2025 Adopted Budget	2025 Amended Budget	2025 Estimated Actuals	2026 Adopted Budget	2026 Amended Budget
1	***Beginning Fund Balance***	**$ 21,602,586**	**$ 7,856,607**	**$ 16,514,220**	**$ 16,514,220**	**$ 9,561,392**	**$ 12,538,004**
	Revenues						
2	*Taxes*	$ 26,675,687	$ 27,528,250	$ 27,845,200	$ 28,240,822	$ 28,746,925	$ 28,746,925
3	*Intergovernmental*	0	0	0	0	0	0
4	*Charges for Services*	66,325	0	0	147,100	0	0
5	*Earnings on Investments*	561,262	300,000	300,000	384,320	200,000	200,000
6	*Other Revenues*	0	0	1,057,911	1,038,148	0	0
7	***Total Revenues and Transfers In***	**$ 27,303,274**	**$ 27,828,250**	**$ 29,203,111**	**$ 29,810,390**	**$ 28,946,925**	**$ 28,946,925**
	Expenditures by Function						
8	*Supplies*	$ 47,787	$ 0	$ 38,964	$ 54,471	$ 340,000	$ 340,000
9	*Controllable Assets*	39,393	1,071,200	64,778	16,978	843,700	843,700
10	*Purchased Services*	59,816	0	68,013	59,033	28,000	28,000
11	*Fixed Charges*	493,175	547,747	553,747	552,441	586,797	586,797
12	*Grants, Contributions, Indemnities*	0	0	0	0	0	0
13	*Debt Service (Lease Payment)*	0	0	0	0	0	0
14	*Intergovernmental Support*	5,788	12,000	9,742	5,918	10,000	10,000
15	*Interdepartmental Charges*	0	0	0	0	0	0
16	*Capital Outlay*	5,082,220	1,693,600	7,374,585	4,868,694	1,639,000	1,639,000
17	*Contingency*	0	100,000	10	0	100,000	100,000
18	*Transfers Out:*						
19	To General Fund	26,663,462	27,729,150	28,046,100	28,229,072	29,244,575	29,244,575
20	*Total Transfers Out*	*26,663,462*	*27,729,150*	*28,046,100*	*28,229,072*	*29,244,575*	*29,244,575*
21	*Encumbrances Re-appropriated (Supplemental #01-26)*						*2,187,669*
22	***Total Expenditures and Transfers Out***	**$ 32,391,640**	**$ 31,153,697**	**$ 36,155,939**	**$ 33,786,607**	**$ 32,792,072**	**$ 34,979,741**
23	*Change In Fund Balance*	(5,088,366)	(3,325,447)	(6,952,828)	(3,976,216)	(3,845,147)	(6,032,816)
24	***Ending Fund Balance***	**$ 16,514,220**	**$ 4,531,160**	**$ 9,561,392**	**$ 12,538,004**	**$ 5,716,245**	**$ 6,505,188**
	Fund Balance Detail						
25	*Non-spendable Fund Balance*	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
26	*Restricted Fund Balance - Required Per Policy*	*4,690,611*	*3,277,312*	*3,277,312*	*5,335,667*	*2,352,284*	*3,277,312*
27	*Restricted Fund Balance - Initiatives*	*0*	*0*	*3,000,000*	*3,000,000*	*3,000,000*	*3,000,000*
28	*Restricted Fund Balance - Available*	*11,823,609*	*1,253,848*	*3,284,080*	*4,202,337*	*363,961*	*227,876*
29	*Committed Fund Balance*	*0*	*0*	*0*	*0*	*0*	*0*
30	*Assigned Fund Balance*	*0*	*0*	*0*	*0*	*0*	*0*
31	***Ending Fund Balance***	***$ 16,514,220***	***$ 4,531,160***	***$ 9,561,392***	***$ 12,538,004***	***$ 5,716,245***	***$ 6,505,188***

Douglas County Government
Rueter-Hess Recreation Area Fund (Fund 245)
Fund Summary

		2024 Audited Actuals	2025 Adopted Budget	2025 Amended Budget	2025 Estimated Actuals	2026 Adopted Budget	2026 Amended Budget
1	***Beginning Fund Balance***	**$ 2,313,518**	**$ 1,932,545**	**$ 2,567,163**	**$ 2,567,163**	**$ 2,113,993**	**$ 2,671,238**
	Revenues						
2	*Intergovernmental*	$ 620,000	$ 620,000	$ 620,000	$ 846,539	$ 620,000	$ 620,000
3	*Charges for Services*	52,687	32,000	32,000	58,087	46,000	46,000
4	*Earnings on Investments*	96,843	50,000	50,000	108,700	50,000	50,000
5	*Other Revenues*	0	0	0	0	0	0
6	Transfer-In Parks & Open Space Fund	250,000	250,000	250,000	250,000	250,000	250,000
7	***Total Revenues and Transfers In***	**$ 1,019,530**	**$ 952,000**	**$ 952,000**	**$ 1,263,326**	**$ 966,000**	**$ 966,000**
	Expenditures by Function						
8	*Personnel*	$ 623,985	$ 656,315	$ 621,315	$ 544,068	$ 601,911	$ 601,911
9	*Supplies*	35,575	5,600	20,600	17,646	33,100	33,100
10	*Controllable Assets*	3,762	0	5,000	6,797	4,000	4,000
11	*Purchased Services*	46,546	60,000	317,719	27,513	28,000	28,000
12	*Building Materials*	0	0	0	0	1,000	1,000
13	*Fixed Charges*	37,217	44,020	44,020	27,743	19,515	19,515
14	*Intergovernmental Support*	0	0	0	0	0	0
15	*Capital*	18,800	368,000	635,281	535,484	508,000	508,000
16	*Contingency*	0	50,000	50,000	0	50,000	50,000
17	*Encumbrances Re-appropriated (Supplemental #01-26)*						*29,537*
18	***Total Expenditures and Transfers Out***	**$ 765,885**	**$ 1,183,935**	**$ 1,693,935**	**$ 1,159,251**	**$ 1,245,526**	**$ 1,275,063**
19	*Change In Fund Balance*	253,645	(231,935)	(741,935)	104,075	(279,526)	(309,063)
20	***Ending Fund Balance***	**$ 2,567,163**	**$ 1,700,610**	**$ 1,825,228**	**$ 2,671,238**	**$ 1,834,467**	**$ 2,362,175**
	Fund Balance Detail						
21	*Non-spendable Fund Balance*	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
22	*Restricted Fund Balance - Required Per Policy*	*81,000*	*81,000*	*81,000*	*92,327*	*81,000*	*81,000*
23	*Restricted Fund Balance - Available*	*2,486,163*	*1,619,610*	*1,744,228*	*2,578,911*	*1,753,467*	*2,281,175*
24	*Committed Fund Balance*	*0*	*0*	*0*	*0*	*0*	*0*
25	*Assigned Fund Balance*	*0*	*0*	*0*	*0*	*0*	*0*
26	***Ending Fund Balance***	**$ 2,567,163**	**$ 1,700,610**	**$ 1,825,228**	**$ 2,671,238**	**$ 1,834,467**	**$ 2,362,175**

Douglas County Government
Parks and Open Space Sales and Use Tax Fund (Fund 250)
Fund Summary

		2024 Audited Actuals	2025 Adopted Budget	2025 Amended Budget	2025 Estimated Actuals	2026 Adopted Budget	2026 Amended Budget
1	***Beginning Fund Balance***	**$ 49,512,339**	**$ 45,258,195**	**$ 55,751,331**	**$ 55,751,331**	**$ 52,558,168**	**$ 57,884,244**
	Revenues						
2	*Taxes*	$ 18,139,467	$ 18,719,209	$ 18,794,209	$ 19,203,759	$ 19,547,909	$ 19,547,909
3	*Intergovernmental*	6,434	0	896,633	293,538	0	0
4	*Charges for Services*	0	25,000	25,000	0	0	0
5	*Earnings on Investments*	3,003,252	400,000	2,900,000	3,154,251	400,000	400,000
6	*Other Revenues*	618,909	85,000	85,000	150,006	95,000	95,000
7	*Transfer In*	0	0	0	0	0	0
8	***Total Revenues and Transfers In***	**$ 21,768,061**	**$ 19,229,209**	**$ 22,700,842**	**$ 22,824,458**	**$ 20,042,909**	**$ 20,042,909**
	Expenditures by Function						
9	*Personnel*	$ 1,942,358	$ 2,380,738	$ 2,422,920	$ 2,210,982	$ 2,355,416	$ 2,355,416
10	*Supplies*	164,221	423,330	265,680	167,260	423,330	423,330
11	*Controllable Assets*	36,168	0	0	4,339	0	0
12	*Purchased Services*	1,359,883	934,500	2,374,201	1,300,641	934,500	934,500
13	*Fixed Charges*	286,385	267,084	267,084	326,504	247,883	247,883
14	*Grants, Contributions, Indemnities*	5,500,000	0	9,050,000	8,478,072	10,250,000	10,250,000
15	*Intergovernmental Support*	4,332,072	3,748,842	3,833,842	4,607,152	3,914,582	3,914,582
16	*Capital Outlay*	1,483,296	0	7,211,446	1,546,447	4,695,000	4,695,000
17	*Vehicle Replacements*	174,687	0	123,081	124,140	365,000	365,000
18	*Contingency*	0	100,000	90,000	0	100,000	100,000
19	*Transfers Out:*						
20	*General Fund*	0	0	1,676,009	1,676,009	0	0
21	*Rueter Hess Recreation Area*	250,000	250,000	250,000	250,000	250,000	250,000
22	*Total Transfers Out*	*250,000*	*250,000*	*1,926,009*	*1,926,009*	*250,000*	*250,000*
23	*Encumbrances Re-appropriated (Supplemental #01-26)*						*1,003,280*
24	***Total Expenditures and Transfers Out***	**$ 15,529,069**	**$ 8,104,494**	**$ 27,564,263**	**$ 20,691,546**	**$ 23,535,711**	**$ 24,538,991**
25	*Change In Fund Balance*	6,238,992	11,124,715	(4,863,421)	2,132,913	(3,492,802)	(4,496,082)
26	***Ending Fund Balance***	**$ 55,751,331**	**$ 56,382,910**	**$ 50,887,910**	**$ 57,884,244**	**$ 49,065,366**	**$ 53,388,161**
	Fund Balance Detail						
27	*Non-spendable Fund Balance*	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
28	*Restricted Fund Balance - Required Per Policy*	*2,416,228*	*875,449*	*1,016,373*	*4,454,490*	*887,571*	*987,899*
29	*Restricted Fund Balance - Available*	*53,335,103*	*55,507,461*	*49,871,537*	*53,429,753*	*48,177,795*	*52,400,262*
30	*Committed Fund Balance*	*0*	*0*	*0*	*0*	*0*	*0*
31	*Assigned Fund Balance*	*0*	*0*	*0*	*0*	*0*	*0*
32	***Ending Fund Balance***	**$ 55,751,331**	**$ 56,382,910**	**$ 50,887,910**	**$ 57,884,244**	**$ 49,065,366**	**$ 53,388,161**

Douglas County Government
Solid Waste Disposal Fund (Fund 275)
Fund Summary

		2024 Audited Actuals	2025 Adopted Budget	2025 Amended Budget	2025 Estimated Actuals	2026 Adopted Budget	2026 Amended Budget
1	***Beginning Fund Balance***	**$ 6,417**	**$ 157,095**	**$ 430,842**	**$ 430,842**	**$ 507,796**	**$ 1,252,823**
	Revenues						
2	*Taxes*	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
3	*Intergovernmental*	0	0	0	100,000	0	0
4	*Charges for Services*	76,932	65,000	189,580	160,196	125,000	125,000
5	*Intergovernmental*	0	0	0	0	0	0
6	*Earnings on Investments*	0	0	0	0	0	0
7	*Other Revenues*	203,466	20,000	20,000	173,932	75,000	75,000
8	*Transfers In*	275,950	0	3,432,875	3,432,875	375,000	375,000
9	***Total Revenues and Transfers In***	**$ 556,348**	**$ 85,000**	**$ 3,642,455**	**$ 3,867,003**	**$ 575,000**	**$ 575,000**
	Expenditures by Function						
10	*Personnel*	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
11	*Supplies*	0	0	0	0	0	0
12	*Purchased Services*	21,376	0	0	68,120	300,000	300,000
13	*Fixed Charges*	110,547	110,000	234,580	401,920	560,000	560,000
14	*Intergovernmental Support*	0	0	0	0	0	0
15	*Interdepartmental Charges*	0	0	0	0	0	0
16	*Capital Outlay*	0	0	3,432,875	2,574,983	0	0
17	*Contingency*	0	0	0	0	0	0
18	*Transfers Out - General Fund*	0	0	0	0	0	0
19	*Encumbrances Re-appropriated (Supplemental #01-26)*						*644,125*
20	***Total Expenditures and Transfers Out***	**$ 131,923**	**$ 110,000**	**$ 3,667,455**	**$ 3,045,022**	**$ 860,000**	**$ 1,504,125**
21	*Change In Fund Balance*	424,425	(25,000)	(25,000)	821,981	(285,000)	(929,125)
22	***Ending Fund Balance***	**$ 430,842**	**$ 132,095**	**$ 405,842**	**$ 1,252,823**	**$ 222,796**	**$ 323,698**
	Fund Balance Detail						
23	*Non-spendable Fund Balance*	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
24	*Restricted Fund Balance*	0	0	0	0	0	0
25	*Committed Fund Balance*	0	0	0	0	0	0
26	*Assigned Fund Balance*	*430,842*	*132,095*	*405,842*	*1,252,823*	*222,796*	*323,698*
27	***Ending Fund Balance***	***$ 430,842***	***$ 132,095***	***$ 405,842***	***$ 1,252,823***	***$ 222,796***	***$ 323,698***

Douglas County Government
American Recovery Plan Act Fund (Fund 296)
Fund Summary

		2024 Audited Actuals	2025 Adopted Budget	2025 Amended Budget	2025 Estimated Actuals	2026 Adopted Budget	2026 Amended Budget
1	***Beginning Fund Balance***	**$ 3,726,030**	**$ 4,322,680**	**$ 8,063,689**	**$ 8,063,689**	**$ 2,900,000**	**$ 9,439,555**
	Revenues						
2	*Taxes*	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
3	*Intergovernmental*	8,049,420	0	39,063,026	12,169,212	0	0
4	*Earnings on Investments*	2,638,693	0	3,730,000	1,857,630	0	0
5	*Other Revenues*	3,882,726	0	0	2,717,774	0	0
6	*Supplemental Appropriation - #1-26*						*18,931,662*
7	***Total Revenues and Transfers In***	**$ 14,570,839**	**$ 0**	**$ 42,793,026**	**$ 16,744,616**	**$ 0**	**$ 18,931,662**
	Expenditures by Function						
8	*Personnel*	$ 1,459,064	$ 0	$ 515,377	$ 460,488	$ 0	$ 0
9	*Supplies*	5,488	0	835	9,305	0	0
10	*Controllable Assets*	0	0	0	11,078	0	0
11	*Purchased Services*	1,091,468	0	1,278,517	961,074	0	0
12	*Fixed Charges*	0	0	0	705	0	0
13	*Grants and Contributions*	5,926,662	0	47,827,552	12,831,610	0	0
14	*Intergovernmental Support Svcs.*	0	0	175,000	0	0	0
15	*Capital Outlay*	1,750,498	0	229,434	446,716	0	0
16	*Contingency*	0	0	0	0	0	0
17	*Transfers Out*	*0*	*0*	*830,000*	*830,000*	0	0
18	*Encumbrances Re-appropriated (Supplemental #01-26)*						*28,371,217*
19	***Total Expenditures and Transfers Out***	**$ 10,233,180**	**$ 0**	**$ 50,856,715**	**$ 15,550,976**	**$ 0**	**$ 28,371,217**
20	*Change In Fund Balance*	*4,337,659*	*0*	*(8,063,689)*	*1,193,640*	*0*	*(9,439,555)*
21	***Ending Fund Balance***	**$ 8,063,689**	**$ 4,322,680**	**$ 0**	**$ 9,257,329**	**$ 2,900,000**	**$ 0**
	Fund Balance Detail						
22	*Nonspendable Fund Balance*	*$ 0*	*$ 0*	*$ 0*	*$ 0*	*$ 0*	*$ 0*
23	*Restricted Fund Balance*	*0*	*0*	*0*	*0*	*0*	*0*
24	*Committed Fund Balance*	*8,063,689*	*4,322,680*	*0*	*9,257,329*	*2,900,000*	*0*
25	*Assigned Fund Balance*	*0*	*0*	*0*	*0*	*0*	*0*
26	***Ending Fund Balance***	***$ 8,063,689***	***$ 4,322,680***	***$ 0***	**$ 9,257,329**	**$ 2,900,000**	**$ 0**

Douglas County Government
Capital Expenditures Fund (Fund 330)
Fund Summary

		2024 Audited Actuals	2025 Adopted Budget	2025 Amended Budget	2025 Estimated Actuals	2026 Adopted Budget	2026 Amended Budget
1	***Beginning Fund Balance***	**$ 3,904,484**	**$ 2,548,556**	**$ 2,837,049**	**$ 2,837,049**	**$ 2,805,292**	**$ 2,765,173**
	Revenues						
2	*Taxes*	$ 0	$ 0	$ 0	$ (116)	$ 1,559,800	$ 1,559,800
3	*Other Revenues*	26,350	0	0	15,348	0	0
	Transfers In:						
4	From General Fund	88,000	0	3,435,000	3,435,000	0	0
5	*Total Transfers In*	88,000	0	3,435,000	3,435,000	0	0
6	***Total Revenues and Transfers In***	**$ 114,350**	**$ 0**	**$ 3,435,000**	**$ 3,450,232**	**$ 1,559,800**	**$ 1,559,800**
	Expenditures by Function						
	Personnel Services - Contract Help	$ 0	$ 0	$ 9,120	$ 9,120	$ 0	$ 0
7	*Supplies and Purchased Services*	$185,691	0	189,235	199,965	0	0
8	*Controllable Assets*	96,492	421,050	165,672	131,725	427,100	427,100
9	*Building Materials*	282	0	0	0	0	0
10	*Fixed Charges*	0	0	0	0	23,397	23,397
11	*Contributions*				240,000		
12	*Capital Improvements*						
13	Other General Governmental Buildings	379,698	159,900	346,076	300,075	306,500	306,500
14	Fairgrounds Improvements	64,324	197,500	256,455	263,940	189,500	189,500
15	Health & Human Services - Improvements	44,835	0	0	0	0	0
16	Public Works Facilities - Improvements	189,508	130,000	119,928	119,753	55,000	55,000
17	Miller Building	38,809	105,000	4,500	4,500	33,000	33,000
18	Park Meadows Ctr. - Improvements	19,310	0	0	112	0	0
19	Wilcox Building - Improvements	129,566	20,000	0	0	0	0
20	Landing Point	0	0	1,571,516	1,874,673	190,000	190,000
21	Heros Hall	0	0	400,000	0	0	0
22	Moore Road Facility	33,271	0	0	0	0	0
23	Elections Remodel	0	0	5,625	10,875	0	0
24	Fairgrounds - Additonal Seating	0	0	128,362	128,362	0	0
25	Veterans Services Relocation	0	0	30,550	30,550	0	0
26	Juvenile Family Court Services	0	0	1,689	1,688	0	0
27	Sedalia Public Works Facility	0	0	238,029	206,770	0	0
28	*Total Capital Improvements*	899,320	612,400	3,102,730	2,941,298	774,000	774,000
29	*Encumbrances Re-appropriated (Supplemental #01-26)*						*249,101*
30	***Total Expenditures and Transfers Out***	**$ 1,181,785**	**$ 1,033,450**	**$ 3,466,757**	**$ 3,522,108**	**$ 1,224,497**	**$ 1,473,598**
31	*Change in Fund Balance*	(1,067,435)	(1,033,450)	(31,757)	(71,875)	335,303	86,202
32	**Ending Fund Balance**	**$ 2,837,049**	**$ 1,515,106**	**$ 2,805,292**	**$ 2,765,173**	**$ 3,140,595**	**$ 2,851,375**
	Fund Balance Detail						
33	*Non-spendable Fund Balance*	*$ 0*	*$ 0*	*$ 0*	*$ 0*	*$ 0*	*$ 0*
34	*Restricted Fund Balance*	*0*	*0*	*0*	*0*	*0*	*0*
35	*Committed Fund Balance*	*0*	*0*	*0*	*0*	*0*	*0*
36	*Assigned Fund Balance - Required Per Policy*	*50,000*	*50,000*	*50,000*	*50,000*	*50,000*	*50,000*
37	*Assigned Fund Balance - Pending Remodels*	*0*	*0*	*1,600,000*	*1,600,000*	*1,600,000*	*1,600,000*
38	*Assigned Fund Balance - Road & Bridge*	*1,280,000*	*1,465,106*	*1,055,000*	*855,000*	*855,000*	*855,000*
39	*Assigned Fund Balance - Available*	*1,507,049*	*0*	*100,292*	*260,173*	*635,595*	*346,375*
40	***Ending Fund Balance***	**$ 2,837,049**	**$ 1,515,106**	**$ 2,805,292**	**$ 2,765,173**	**$ 3,140,595**	**$ 2,851,375**

Local Improvement District (LID) Capital Construction Fund (Fund 350)
Fund Summary

		2024 Audited Actuals	2025 Adopted Budget	2025 Amended Budget	2025 Estimated Actuals	2026 Adopted Budget	2026 Amended Budget
1	***Beginning Fund Balance***	**$ 786,648**	**$ 61,148**	**$ 63,400**	**$ 63,400**	**$ 61,100**	**$ 690,368**
	Revenues						
2	*Taxes*	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
3	*Intergovernmental*	0	0	0	0	0	0
4	*Earnings on Investment*	0	0	0	0	0	0
5	*Other Revenues*	170,752	85,200	85,200	142,737	85,200	85,200
6	*Transfers In - General Fund*	0	0	1,461,565	1,461,565	0	0
7	***Total Revenues and Transfers In***	**$ 170,752**	**$ 85,200**	**$ 1,546,765**	**$ 1,604,302**	**$ 85,200**	**$ 85,200**
	Expenditures by Function						
8	*Personnel*	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
9	*Supplies*	0	0	0	0	0	0
10	*Purchased Services*	0	0	1,463,658	0	0	0
11	*Fixed Charges*	0	2,500	407	0	2,500	2,500
12	*Grants, Contributions, Indemnities*	0	0	0	892,334	0	0
13	*Intergovernmental Support*	0	0	0	0	0	0
14	*Capital Outlay*	0	0	0	0	0	0
15	*Contingency*	0	0	0	0	0	0
16	*Transfers Out*	894,000	85,000	85,000	85,000	85,000	85,000
17	*Encumbrances Re-appropriated (Supplemental #01-26)*						*596,446*
18	***Total Expenditures and Transfers Out***	**$ 894,000**	**$ 87,500**	**$ 1,549,065**	**$ 977,334**	**$ 87,500**	**$ 683,946**
19	*Change In Fund Balance*	(723,248)	(2,300)	(2,300)	626,968	(2,300)	(598,746)
20	***Ending Fund Balance***	**$ 63,400**	**$ 58,848**	**$ 61,100**	**$ 690,368**	**$ 58,800**	**$ 91,622**
	Fund Balance Detail						
21	*Non-spendable Fund Balance*	*$ 0*	*$ 0*	*$ 0*	*$ 0*	*$ 0*	*$ 0*
22	*Restricted Fund Balance*	*0*	*0*	*0*	*0*	*0*	*0*
23	*Committed Fund Balance*	*0*	*0*	*0*	*0*	*0*	*0*
24	*Assigned Fund Balance*	*63,400*	*58,848*	*61,100*	*690,368*	*58,800*	*91,622*
25	***Ending Fund Balance***	**$ 63,400**	**$ 58,848**	**$ 61,100**	**$ 690,368**	**$ 58,800**	**$ 91,622**

Douglas County Government
Liability and Property Insurance Fund (Fund 630)
Fund Summary

		2024 Audited Actuals	2025 Adopted Budget	2025 Amended Budget	2025 Estimated Actuals	2026 Adopted Budget	2026 Amended Budget
1	***Beginning Fund Balance***	**$ 1,624,344**	**$ 1,516,937**	**$ 1,056,998**	**$ 1,056,998**	**$ 1,038,397**	**$ 1,154,378**
	Revenues						
2	*Taxes*	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
3	*Intergovernmental*	0	0	0	0	0	0
4	*Charges for Services*	3,503,400	4,005,700	4,005,700	4,005,700	4,611,710	4,611,710
5	*Fines and Forfeits*	7,135	5,000	5,000	9,987	5,000	5,000
6	*Earnings on Investments*	0	0	0	0	0	0
7	*Other Revenues*	535,074	46,990	46,990	50,140	46,990	46,990
8	*Transfers In*	0	0	0	0	0	0
9	***Total Revenues and Transfers In***	**$ 4,045,609**	**$ 4,057,690**	**$ 4,057,690**	**$ 4,065,827**	**$ 4,663,700**	**$ 4,663,700**
	Expenditures by Function						
10	*Personnel*	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
11	*Supplies*	0	0	0	0	0	0
12	*Purchased Services*	1,504	80,000	80,000	69,523	80,000	80,000
13	*Fixed Charges*	2,018,068	2,377,690	2,377,690	2,174,927	2,483,700	2,483,700
14	*Grants,Contribution,Indemnities*	2,593,383	1,500,000	1,823,606	1,723,997	2,000,000	2,000,000
15	*Interdepartmental Charges*	0	0	0	0	0	0
16	*Contingency*	0	100,000	100,000	0	100,000	100,000
17	*Transfers Out*	0	0	0	0	0	0
18	*Encumbrances Re-appropriated (Supplemental #01-26)*						*10,156*
19	***Total Expenditures and Transfers Out***	**$ 4,612,955**	**$ 4,057,690**	**$ 4,381,296**	**$ 3,968,447**	**$ 4,663,700**	**$ 4,673,856**
20	*Change In Fund Balance*	(567,347)	0	(323,606)	97,380	0	(10,156)
21	***Ending Fund Balance***	**$ 1,056,998**	**$ 1,516,937**	**$ 733,392**	**$ 1,154,378**	**$ 1,038,397**	**$ 1,144,222**
	Fund Balance Detail						
22	*Non-spendable Fund Balance*	*$ 0*	*$ 0*	*$ 0*	*$ 0*	*$ 0*	*$ 0*
23	*Restricted Fund Balance*	*0*	*0*	*0*	*0*	*0*	*0*
24	*Committed Fund Balance*	*0*	*0*	*0*	*0*	*0*	*0*
25	*Assigned Fund Balance - Per Policy*	*250,000*	*250,000*	*250,000*	*250,000*	*250,000*	*250,000*
26	*Assigned Fund Balance - Available*	*806,998*	*1,266,937*	*483,392*	*904,378*	*788,397*	*894,222*
27	**Ending Fund Balance**	**$ 1,056,998**	**$ 1,516,937**	**$ 733,392**	**$ 1,154,378**	**$ 1,038,397**	**$ 1,144,222**