Third Party Supplemental Environmental Project (SEP) Proposal / Agreement

Third Party Liable (Revised 5/19/2022)

Document is completed by the third party SEP administrator.

The third party SEP administrator, identified below, submits the following SEP agreement proposal to the Colorado Department of Public Health and Environment (the department) for consideration. If the application is approved, it shall be signed by appropriate representatives of the department. If the approved document is then signed by the applicant, it shall serve as the SEP agreement for the project(s) at issue.

Enforcement action information

Regulated entity name: Castle Pines North Metropolitan District

Enforcement case no.: DO-230808-1

Castle Pines North Metropolitan District's (CPNMD's) SEP proposal serves to supplement and augment an existing SEP-funded project (Flatiron-AECOM, LLC- Enforcement Case Numbers: SO-190529-1 and SO-200115-1). This proposal identifies where CPNMD's funds will be allocated in the project and establishes independent budgeting, reporting, and deliverables from the Flatiron-AECOM, LLC SEP.

Third party SEP administrator

Zachary Humbles, PE IV
Douglas County Public Works
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Type of organization

Government

*If nonprofit, please attach a copy of your 501c(3) exemption to this SEP Agreement.

Department SEP coordinator

Alex Scherer
720-556-5474
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Geographic area served
Douglas County

Project title
East Plum Creek Stabilization

Vicinity of Colorado Agricultural Leadership Foundation (CALF)

Project type
Third party

SEP category
Environmental Restoration – Stream Channel and Riparian Area Stabilization

Project summary
Stabilize East Plum Creek to reduce bank wasting, improve wetland habitat, and provide an educational exhibit for property owners and managers faced with similar channel issues.

Project description
Problem Statement: East Plum Creek is incised, braiding, and has wasting vertical banks, which causes substantial sediment loading, reduced wetland flora/fauna, and unstable hydraulics during higher flows. These issues are largely due to a perched and undersized culvert installed as an emergency repair on the southern boundary of the project circa 2013.

Project Goals and Objectives: The project goals will focus primarily on stabilizing the most geomorphically unstable portion of the reach - the southernmost third of the channel - followed in prioritized order by other segments showing indications of vertical propagation. The successful end state includes the installation of grade controls that prevent further vertical migration of the channel thalweg that are fish passable, stabilized banks throughout the southern and central segments (Phase I already completed the northern segment), and recontoured channel sections to promote improved wetland flora/fauna. The successful end state will also include a crossing site solution to the currently undersized and perched culvert, which will include a grade control to protect upstream wetlands that have developed because of the culvert's backwater influence. Due to high, intense flows in Spring 2023 and a beaver dam, the main culvert conveying East Plum Creek was entirely blown out during the original design phase of Flatiron-AECOM, LLC SEP, which necessitated a redesign. The redesign eliminated the need for grade control structures at a cost benefit to the project and presented the opportunity to further improve water quality by adding additional bank stabilization and vegetation. This additional in-scope work aligns seamlessly with the spirit of the project, SEP funding, and the collective interest of the CALF and Douglas County (DC).

This project has numerous objectives to achieve its goals; the highest priority being the southernmost channel reconstruction and bank stabilization. After reference reach data is

collected and analyzed, full channel recontour will occur by applying a design section that greatly enhances wetland areas only where necessary to reduce total impact and risk to the floodplain stability. The intense flows in Spring 2023 created and/or exacerbated the current vertical banks and afforded the channel mere inches of wetland. The project aims to provide 10 or more feet of vertical banks adjacent to the two (2) year channel where best practicable while also reducing native upland vegetation disruption.

The stabilization effort for the reconstructed channel involves multiple organizations, volunteers, and resources and the revegetation effort is an undertaking led by the CALF and Douglas County Conservation District (DCCD). Douglas County measured the success of Phase 1 (northernmost third of the channel project area) and determined the vegetation species diversity improved 10-fold. Douglas County will continue to perform extensive revegetation work to augment the hydraulic design and reinforce key design elements such as drop structures using hardy, resilient, and locally sourced native species. This theme and practice will extend throughout the reach segments (all thirds, all phases). Following successful establishment of the vegetation, habitat improvement and augmentation will occur. The education component, meant to instruct property owners and managers on common and economical means to stabilize channels on their own parcels, consists of developing interpretive stations* and communicating design intents, practice, and related to the staff at CALF and DCCD for an enduring awareness.

*interpretive station: The Douglas County Conservation District, in conjunction with Colorado Agricultural Leadership Foundation (CALF) have planned to install visual information panels to communicate to future visitors the types of stabilization methods applied and their purpose. This effort keeps with the intent to educate and inform private landowners about economical and feasible options to stabilize their own channels, large or small, and reduce bank wasting and incision. These stations are conceptual at this point in time (July 2024), but discussion has indicated something akin to other panels present throughout Douglas County open spaces and particularly at heritage and historical sites. QR code and similar additional access to information is expected, which provides alternative information delivery means for those that may need or prefer it. The structure of these panels has historically been a steel frame with steel plating, printed vinyl media applied with epoxy adhesives provide a very resilient finished station. The station is mounted in concrete akin to a gate post or similar.

Due to the substantial channel reconstruction and stabilization in Phase III, a no-rise certification has been submitted and approved in compliance with FEMA requirements to enable the work. The USACE NWP (nationwide permit) 27 covers the entire project area and has been granted. Work to date has complied with the terms and conditions of USACE NWP 27. Construction erosion control permits will be secured to ensure full compliance. Economical, practicable, and accessible stabilization methods are a dominant driving goal in the execution of the project since its partial purpose is to be a demonstration for private landowners who have wasting or incised channels.

Project Need & Community Impact: The East Plum Creek channel system on the CALF parcel was unstable and showing signs of incision and related side effects. By itself, the environmental impacts are well documented. This project is unique, as in addition to the stabilization work, it aims to serve as an educational resource for Front Range property

owners facing similar conditions on their parcels. Current best practices generally accepted by local and state governments default to Mile High Flood District (MHFD) criteria, which are often inaccessible to the public due to the enormous cost and complexity. The cost and complexity of MHFD solutions are almost exclusively sought by tax funded organizations. In an effort to develop sound, practicable, and sensible guidance for channel stabilization, this project offers alternative solutions that blend some of the best experience across multiple agencies and consultant designs to develop economical options that provide similar performance.

Technical Information: The project is divided into three phases: Phase 1, Phase 2, and Phase 3. Phase I was completed by applying the design cross section but without any change to the 2-year channel alignment or thalweg elevation; the wetland bench was greatly expanded; and substantial revegetation was completed. As a part of the Phase I work, old junk cars and broken concrete were removed from the banks and hauled off; however, there are still cars visible in the banks of East Plum Creek, north of the CALF parcel boundary.

Phase II is in progress and its goal is the stabilization of vertical wasting banks throughout the middle third of the channel, which is the longest segment at approximately 2,000 linear feet. Work progresses in very small, targeted areas when funds become available. Revegetation efforts, including staking willows and planting native seed mixes and native flowers, are continuing. Trash and debris such as tires and appliances in the channel are being removed. The existing channel thalweg and 2-year channel are not disturbed. The design section is used to guide the bank layback effort but not to an extent where greater impact to the resource would occur as a compromise to costly heavy earth moving while still reducing hydraulic forces.

Phase III design is complete and work has commenced with the receipt of funding from the Flatiron-AECOM, LLC SEP. Phase III comprises approximately 800 linear feet of the southernmost third of the channel and involved substantial reconstruction of the channel. The 2-year channel will be reconstructed where required to emulate the reference reach with very little vertical adjustment due to the 2023 storms and subsequent culvert failure. A repurposed railroad flatcar bridge will be emplaced to keep vehicular and agricultural vehicles out of the channel. Furthermore, Phase III includes bank stabilization as well as riparian area and wetland beach augmentation through implementing the design section where least damaging to established native vegetation and channel morphologic tendencies. This approach is modular since treatment methods are meant to be simple, cost effective, and scalable. The work will prioritize the most unstable areas and any savings or efficiencies will go toward performing additional work. The revegetation plan is a collaborative effort between professional design planners, volunteers, and/or contractors. Based on the integration and state of Phase II, it may be resourceful and efficient to complete Phase II and Phase III simultaneously. There was very little damage to Phase I and Phase II during the Spring 2023 storms, which greatly underscored the success of the design section and approach to the channel stabilization.

Please reference the Flatiron-AECOM, LLC SEP proposal and modifications for plans, details, and additional information regarding the approach and project.

Project Partners & Roles: The project has a myriad of partners, including DCCD, the Natural Resources Conservation Service (NRCS), CALF, AmeriCorps, ERO Consultants, RESPEC Engineers, Matrix Engineers, and DC (public works & open space).

DC, DCCD, and CALF are the leaders for the project and collectively make decisions, pursue funding, organize work and volunteers, and grow and/or source locally available vegetation for the project.

Similar services or projects in the area: MHFD criteria is the prevalent approach for Front Range channel stabilization projects; however, there is a significant accessibility gap between individual citizen scale channel work and government scale channel work. There are few feasible alternatives for a citizen when faced with trying to stabilize privately owned channels in the Front Range. There are some reference materials and resources but no known demonstration project with the intent to educate, demonstrate, and inform the public on the ground and in person, free of charge. Additionally, most plan reviews through applicable first line review authorities will default to the MHFD criteria, which is largely inaccessible to private landowners due to the requirement of costly design elements and extremely conservative hydrology, which may be moot in a residential/private application. These barriers financially disincentivize permitted work which may cause unintended damage to the channel system(s). To demonstrate alternative, holistic, economical solutions, this project aims to demonstrate a feasible approach.

CPNMD funds will be allocated towards additional bank stabilization and (re)vegetation in Phase III of the project, through the entire 800' reach. Following the heavy rains during Spring 2023, the original perched culvert failed catastrophically due to overtopping from a beaver dam that was constructed immediately upstream of the pipe inlet. Prior to the failure of the culvert, a fording site (aka 'low water crossing') would have been constructed to restore vehicular passage to the southwest portion of the parcel for agricultural and ranch traffic. This type of crossing can be harmful to water quality and mobilize sediments during use. The culvert failure afforded the opportunity to redesign and money was allocated to fund a bridge structure that will permanently remove equipment out of the channel. CPNMD's funds, in addition to the Flatiron-AECOM, LLC SEP funds, will enable additional bank stabilization* and revegetation of the project area. The redesign called for applying Flatiron-AECOM SEP funds to the bridge element to mitigate the low water crossing; this reduced the funds available for bank stabilization in the original agreement. The CPNMD SEP will restore the original project capacity regarding bank stabilization and vegetation, while enabling the project to also separate vehicular traffic from the channel flow.

*Examples of expanded bank stabilization activities funded through the CPNMD funds includes but is not limited to:

- Recontouring wasting (vertical) bank(s) to the design section, generating approximately 7.4' of wetland bench
- Installing willow mattress where high-energy hydraulics exist, coupled with resilient vegetation plantings and/or willow rows
- Installation of root wads, log vane, and log groin structures to improve bank resilience to high-frequency seasonal flows
- Installation of stones (boulders) in over bank flow areas or where wetland bench is not feasible due to overburden

- Restoration of failed bank and vegetation from catastrophic culvert failure, using brush mats and willow staking
- Filling scour holes and grading (contouring) bank to support natural hydraulic through the channel.

Expected environmental and/or public health benefits:

The environmental benefits from expanding bank stabilization efforts and revegetation through the use of CPNMD SEP funds are as follows:

1) Increased wetlands - Phase I added 4,895 square feet of wetlands. Phase II and III will add at least 10,018 square feet of wetlands. At the conclusion of the project DC will provide a final calculation of total wetlands added.
2) Diversify flora and fauna - Phase I has already contributed to a 10-fold increase in native species diversity. At the conclusion of the project, DC will provide an estimated value for the increase in native species diversity from Phase II and III of the project.
3) Additional invasive species management.
4) Additional removal of trash and waste from the stream and bank.
5) Additional reductions in bank wasting and incision.
6) Additional reductions in sediment loading.
7) Education component - The bank stabilization methods being applied represent an excellent opportunity to demonstrate an economical alternative to owners that helps reduce or immobilize sediments. Multiple regulatory entities, including the USFS, USDA, DOI, BLM, and NPS, have launched efforts to improve channel resilience, capacity, and health.

Project budget

Complete the summary table below and itemize expenses according to the budget categories provided. Add lines as necessary. Documentation of all expenditures is required as part of the completion report. (Estimates Shown)

Category	Description	SEP Funds	Matching Funds (if applicable)	Total cost
Other Direct Costs	Construction Contractor (53 Corporation – Prime)	$130,978.00	$418,874.00*	$549,852.00
Totals:		$130,978.00	$418,874.00	**$549,852.00**

**SEP Funds from the Flatiron-AECOM, LLC SEP.*
***Please note**: Any categorical changes exceeding 10% of the **total** budget require prior written approval from CDPHE through a SEP Modification.*

Budget discussion

This proposal details how CPNMD's SEP donation will be allocated within an ongoing project. CPNMD's SEP donation will fund additional channel stabilization, within the scope of the project, existing design, and contract. CPNMD is interested in applying the SEP donation to additional stabilization elements as shown in the original design. The original Flatiron-AECOM, LLC SEP will be modified to include CPNMD's funding and to augment the budget to additional stabilization elements that align with the project intent, purpose, and scope. That modification will be submitted in conjunction with this proposal as they are interdependent.

The original design work for Phase III began in November 2019 with Matrix Engineers. They developed a probable cost of $442,634 for the Phase III work, which is well under the current market rates. To compensate for this discrepancy, the contracted construction cost was revised to the amount shown above. Originally it was thought to permit the work through FEMA (floodplain permit), a conditional letter of map revision (CLOMR) will be required using the Matrix design model. Douglas County Public Works Engineering solicited proposals in April 2020 and RESPEC was the low-cost winner. The cost shown in the table is their fee to secure the CLOMR and enable the work to proceed. During design, two high intensity spring storms required a re-design of the proposed stabilization and realized a significant efficiency in the project by mitigating the need for the LOMR, driving a no rise certification instead. These additional design funds were then able to shift to a crossing to remove vehicular traffic from the stream, further demonstrating best practices in channels and improving water quality.

The channel crossing item shown reflects the need to replace the undersized and perched culvert with something appropriate for the hydrology and hydraulics of the location. This is an instrumental component of the project as it serves as an interface between the upstream existing wetlands, the FRT crossing point, and the project area with the most extensive channel section reconstruction. CPNMD's funds, in addition to the Flatiron-AECOM, LLC SEP funds, will enable more bank stabilization in the reach and adjacent to the FRT crossing. This augmentation of the existing project will greatly expand the extent of bank treatment and revegetating the storm and flood damaged areas as well as newly built wetland benches.

DC PWE has previously and will continue to provide support in multiple forms to the project. Previously Douglas County has funded and contracted efforts to remove junk cars, manage invasive vegetation, and match CALF/DCCD grants. DC PWE has also provided equipment and operators to achieve hybrid (contractor + Douglas County) efforts on the project. Those items shown above are meant to indicate that without a cost to the project.

To align with the project goals, Douglas County will maximize funding by streamlining efforts and identifying efficiencies. Phase III is the most difficult and costly portion of the project and, therefore, the highest priority given the opportunity to fund it. Stretching what remains of the budget into Phase II bank stabilization work would be the intuitive obligation and application of the in-scope resources. In discussions with the Department, applying SEP funding to best improve water quality and reducing non-native sediment mobility within the reach or watershed is encouraged to capitalize on efficiencies in construction and supports the spirit of the funding, project, and constituents.

Project work plan

Please specify project activities or deliverables below, as well as completion dates associated with project milestones and reports. Status reports are required biannually for projects 1 year in duration or longer. For projects under one year, a status report is required approximately half way through the project. Add rows as needed.

Activities / Deliverables	Staff responsible	Due date
Proposed implementation start date Based on funding receipt (Day 0)	Zak Humbles, DC PWE	July 31, 2024
Issue NTP to prime contractor to purchase Materials and Commence work		September15, 2024
Status Report	Zak Humbles, DC PWE	January 31, 2025
Stabilization completion date	Zak Humbles, DC PWE	August 30, 2025
SEP completion report due	Zak Humbles, DC PWE	September 31, 2025

Photos or maps related to the project:

Reference original project proposal for supporting information and plans.

Other relevant information

The project is an example of proactive watershed improvement on the part of local organizations, federal, and county governments. Partner organizations are working collectively to identify best practices to economically enable private landowners and managers to address channel issues on private lands all while remaining fully compliant with applicable regulation. These efforts will enable education in Douglas County and beyond to improve watershed health. The bridge element provides a very unique, efficient, and cost-effective channel crossing option for private and governmental land owners. The project team is very pleased and grateful to be able to demonstrate the option to repurpose waste materials in such a productive and effective manner.

Reporting requirements

Biannual status reports

The SEP administrator will submit a biannual project status report to the department's SEP coordinator. Status reports will include, at a minimum, the following information and be submitted using the department's status report form:

- A description of activities completed to date;
- A budget summary table listing funds expended to date by budget category; and
- A discussion of any anticipated changes to the project scope or timeline.

SEP completion report

The SEP administrator will submit a SEP completion report to the department's SEP coordinator within 30 days of project completion and contain at a minimum:

- A detailed description of the project as implemented;
- A summary table identifying project deliverables and tasks along with the associated completion date;
- A description of any operating problems encountered and the solutions thereto;
- A full expense accounting including itemized costs, documented by copies of purchase orders, contracts, receipts or canceled checks;
- Certification and demonstration that the SEP has been fully implemented pursuant to the provisions of the settlement agreement and this SEP agreement;
- A description of the environmental and public health benefits resulting from implementation of the SEP along with **quantification** of the outcomes and benefits;

Additional information will include:

- Examples of brochures, educational or outreach materials developed or produced as part of the SEP; and
- Photographs documenting the project.

Third party SEP administrator conditions and requirements

Only qualified tax-exempt 501(c)(3) nonprofits or governmental organizations are eligible to serve as the SEP administrator. The SEP administrator agrees to the following SEP conditions and requirements:

I. Maintain the SEP funds paid by the regulated entity in an independent SEP account and draw funds from the account as-needed for the purposes outlined in this SEP agreement.

II. Communicate issues and concerns related to the SEP promptly to the department SEP coordinator.

III. If the SEP administrator elects to publicize the name of a violator in connection with the SEP either orally or in writing, the SEP administrator must also include the following statement: "*This project was undertaken in connection with the settlement of an enforcement action taken by the Colorado Department of Public Health and Environment for violations of environmental laws and regulations*".

IV. Complete the SEP as described in this SEP agreement

a. Any changes to the approved project scope or timeline must receive prior written approval from the department.

b. Budget reallocations of up to 10% of the total SEP payment amount may be made without prior authorization. Budget reallocations of over 10% must first receive written prior authorization from the department.

V. Complete the SEP within the time frame(s) indicated in this SEP agreement. If the SEP administrator is unable to meet the SEP agreement time frame(s) for the completion of the SEP, the SEP administrator may request a deadline extension in writing from the department no later than 30 days prior to the deadline.

VI. In any of the following situations, all funds remaining in the SEP account shall be released to the department within 30 days of the department's written request:

a. The SEP administrator fails to complete the project or submit the SEP completion report;

b. The project has been fully implemented and there are still funds remaining in the SEP account; or

c. The department terminates the SEP for failure of the third party SEP administrator to adhere to this SEP agreement.

VII. Make available, at the department's request, all records pertaining to the SEP.

a. The SEP administrator shall maintain a complete file of all records, documents, communications, and other materials that pertain to the operation of the SEP or the delivery of services under the SEP agreement. Such files shall be sufficient to properly reflect all direct and indirect costs of labor, materials, equipment, supplies and services.

b. The SEP administrator authorizes the department to perform audits and/or inspections of its SEP records, at any reasonable time during the implementation of the project and for a period of one (1) year following the completion of the project.

Failure to adhere to any of the above conditions and requirements may result in the termination of the SEP and/or no further SEP referrals.

This section to be completed in the event of a SEP agreement only

Certification statement

I, Chair, Board of County Commissioners of the County of Douglas, certify on behalf of Douglas County, that Douglas County is not required or has not previously committed to perform this project and agrees to the SEP conditions and requirements detailed in this document.

Signed and dated
Chair, Board of County Commissioners of the County of Douglas

Department use only

This SEP has been reviewed and approved by the Colorado Department of Public Health and Environment.

Nathan T. Moore
Digitally signed by Nathan T. Moore
Date: 2024.09.03 12:36:43 -06'00'

Signed and dated
Nathan Moore, Clean Water Program Manager, Water Quality Control Division
Colorado Department of Public Health and Environment

Alex Scherer
Digitally signed by Alex Scherer
Date: 2024.09.03 12:55:06 -06'00'

Signed and dated
Alexander Scherer, Supplemental Environmental Projects Coordinator
Division of Environmental Health and Sustainability
Colorado Department of Public Health and Environment

Appendix (if needed)