

**INTERGOVERNMENTAL AGREEMENT REGARDING
2024 GRANT OF ARAPAHOE COUNTY OPEN SPACE PROGRAM FUNDS
FOR HIGH LINE CANAL STEWARDSHIP PROJECTS
PROJECT NAME: HIGH LINE CANAL IRRIGATED TREE PLANTING PILOT**

This Intergovernmental Agreement (“Agreement”) is made and entered into by and between **THE BOARD OF COUNTY COMMISSIONERS OF THE COUNTY OF ARAPAHOE, STATE OF COLORADO** (“County”), and the **CITY OF LITTLETON**, a municipality and political subdivision of the State of Colorado (“Grantee”) (collectively “Parties” and individually a “Party”).

RECITALS

- A. On November 2, 2021, the voters of the County permanently reauthorized, until repeal, a countywide sales and use tax to be deposited in the County Open Space Fund and used for specified open space purposes as set forth in County Resolution No. 21-263 (“Open Space Resolution”).
- B. The Open Space Resolution authorizes the County to award discretionary grants from its Open Space Fund to municipalities and special districts, as more fully set forth in the Open Space Resolution.
- C. On November 26, 2024, the County approved by resolution the Grantee’s grant proposal for the High Line Canal Irrigated Tree Planting Pilot (“Grant Project”), which is attached as Exhibit A, subject to the execution of an intergovernmental agreement.
- D. This Agreement is authorized by Article XIV, Section 18 of the Colorado Constitution and C.R.S. § 29-1-203.

AGREEMENT

NOW, THEREFORE, the County and the Grantee agree as follows:

- 1. Amount of Grant. The County awards the Grantee an amount not to exceed \$233,000 (“Grant Funds”) for the Grant Project from the County Open Space Fund.
- 2. Use of Grant Funds. The Grantee agrees that it shall only use the Grant Funds for the Grant Project as described in Exhibit A.
- 3. Disbursement of Grant Funds. The County shall pay the Grant Funds via ACH transfer to the Grantee on a reimbursement basis upon receipt of the approved status report and documentation of expenditures as required by this Agreement and no more often than bi-annually. No more than 75% of the Grant Funds will be reimbursed prior to the final report approval. The final 25% of Grant Funds will be reimbursed following the Grant Project inspection and review and approval of the final report and Grant Project deliverables.

4. Time for Use of Grant Funds. The Grantee agrees that the Grant Project will be completed and the Grant Funds will be expended no later than December 31, 2026, unless the County agrees in writing to a longer period of time. The Grantee understands and agrees that, if the Grant Project cannot be completed by December 31, 2026, or the end of the agreed-upon extension, the County may require that the Grant Funds be refunded to the County Open Space Fund, be re-distributed to another agency, and/or be used for another viable and timely project.
5. Interest on Grant Funds. The Grantee further agrees that, after receipt of the Grant Funds, the Grantee will use any interest earned on the Grant Funds only for this Grant Project.
6. Administration of Grant Project. The Grantee shall be responsible for the direct supervision and administration of the Grant Project. The County shall not be liable or responsible for any cost overruns on the Grant Project, nor shall the County have any duty or obligation to provide any additional funding for the Grant Project if the Grant Project cannot be completed with the awarded Grant Funds. The Grantee also agrees to comply with all local, state, and federal requirements while completing the Grant Project unless specifically waived.
7. County Approval of Project; Access to Property. The Grantee acknowledges that the County, as owner of the subject property, has not yet approved construction or implementation of the Grant Project and that the Grantee is required to submit plans for the Grant Project and receive approval by the County before the Grant Project may proceed. If the County approves the plans, the Grantee agrees to sign a separate agreement issued by the County permitting the Grantee to complete the Grant Project on the County's property.
8. Grant Project Site Visits. The Grantee acknowledges that the County may make site visits before, during, at the completion of, and/or after completion of the Grant Project.
9. Acknowledgement of County by Grantee. The Grantee agrees to acknowledge the County as a contributor to the Grant Project in all publications, on-site construction signage, news releases, and other publicity issued by the Grantee related to the Grant Project, and the Grantee acknowledges the County may do the same. If any events are planned in regard to the Grant Project, the County shall be acknowledged as a contributor in the invitation to such events. The Grantee shall cooperate with the County in preparing public information pieces and providing photos of the Grant Project from time to time. Event information, event materials, and press release information related to the Grant Project must be sent to the County Grants Program Administrator for review and filing.
10. Required Sign at Grant Project Site. The County agrees to provide a standard sign for the Grant Project. The Grantee agrees to erect and permanently maintain at least one County sign in a publicly visible area in recognition of the grant from the Arapahoe County Open Space Program. If the Grantee wishes to use its own sign and design, the Grantee must submit the sign location, design, and wording to the County Grants Program Administrator

for approval prior to manufacture and/or installation of such sign. Such sign shall be erected prior to the completion of the Grant Project or its public opening, whichever is earlier.

11. Report Requirements. On or before January 31 and July 31 annually, the Grantee agrees to provide the County with Grant Project Progress Reports that conform to the format provided by the County. Each Grant Project Progress Report shall include supporting financial documentation as requested in the form provided. Upon completion of the Grant Project, the Grantee also agrees to submit to the County a Final Report that conforms to the format provided by the County; a final spreadsheet comparing the original budget to actual expenses that certifies Grant Funds used in compliance with the Open Space Resolution; supporting financial documentation as requested in the County report form; and high-resolution photographs of the progress and finished results of the Grant Project. The Final Report shall be submitted within three months of Grant Project completion, unless the County agrees in writing to a longer period of time. The County shall be allowed to use information and images from these reports in publications, public information updates, and on the County's website.
12. Failure to Submit Required Reports. Upon written notice from the County's Open Space Grants Program Administrator informing the Grantee that it has failed to submit any required status report and/or final report, the Grantee shall submit such reports to the County's Open Space Grants Program Administrator within 30 days, and, if it fails to do so, the Grantee shall be deemed to be in violation of this Agreement.
13. Record-Keeping Requirements. The Grantee shall maintain a complete set of books and records documenting its use of the Grant Funds and its supervision and administration of the Grant Project. The County or any of its duly authorized representatives shall have reasonable access to any books, documents, papers, and records of the Grantee that are pertinent to the Grant Project for the purpose of making an audit, examination, or excerpts. The Grantee shall keep all books, documents, papers, and records pertinent to the Grant Project for a minimum of three years from the Grant Project completion date. The Grantee agrees to report to the County any unexpended Grant Funds and consult with the County concerning proper accounting for unexpended Grant Funds.
14. Changes to Grant Project. The Grantee agrees and understands that its Grant Project, once it has been approved by the County, may not be changed without the County's prior written approval. Proposed changes must be formally requested using the applicable Grant Project Modification Form provided by the County and may require submittal of modified plans that must be approved by the County. Changes may not begin until the County has issued a written approval, which may also require the execution of amendments to this Agreement and the separate agreement permitting the use of the County's property.
15. Maintenance. The Grantee agrees to assume responsibility for continuous maintenance and public safety of the trails, natural resources, amenities, and signage funded by the Grant Funds and installed or planted on the property for their useful or natural life, in accordance with the generally accepted standards in the parks/recreation community.

16. Failure to Comply and Reimbursement of Grant Funds. The Grantee understands and agrees that the County may require the Grantee to reimburse the County if any portion of the Grant Funds is not used in accordance with its approved grant proposal and this Agreement. Failure to comply with this Agreement shall result in default, and the Grantee shall be ineligible for any future grants until the violation is remedied or after such other time period as determined by the County in its sole discretion.
17. Remedies. The rights and remedies of the County as set forth in this Agreement shall not be exclusive and are in addition to any other rights or remedies provided by law.
18. No Waiver of Rights. A waiver by either Party of the breach of any term or provision of this Agreement shall not operate or be construed as a waiver of any subsequent breach by either Party.
19. Relationship of the Parties. The Grantee shall perform all duties and obligations under this Agreement as an independent contractor and shall not be deemed by virtue of this Agreement to have entered into any partnership, joint venture, employer/employee, or other relationship with the County.
20. No Third-Party Beneficiaries. Nothing in this Agreement shall give or allow any claim or right of action whatsoever by any third party, including, but not limited to, any agents or contractors of the Grantee.
21. Severability. The invalidity or unenforceability of any portion or previous version of this Agreement shall not affect the validity or enforceability of any other portion or provision. Any invalid or unenforceable portion or provision shall be deemed severed from this Agreement and, in such event, the Parties shall negotiate in good faith to replace such invalidated provision in order to carry out the intent of the Parties in entering into this Agreement.
22. Written Amendment Required. This Agreement may be amended, modified, or changed, in whole or in part, only by written agreement duly authorized and executed by the Parties.
23. Applicable Law and Venue. This Agreement shall be construed and enforced in accordance with the laws of the State of Colorado. The venue for any legal action arising out of this Agreement shall be in Arapahoe County District Court, pursuant to the appropriate rules of civil procedure.
24. Notices. Notices under this Agreement shall be sent to:

COUNTY: Board of County Commissioners of Arapahoe County
5334 South Prince Street
Littleton, CO 80120-1136

and

Arapahoe County Attorney
5334 South Prince Street
Littleton, CO 80120-1136

and

Arapahoe County Open Spaces Grants Program Administrator
6934 S. Lima St., Unit A
Centennial, CO 80112

GRANTEE: City of Littleton
2255 W. Berry Avenue
Littleton, CO 80120

25. Counterparts. This Agreement may be executed in multiple counterparts, each of which will be deemed to be an original and all of which taken together will constitute one and the same agreement.
26. Incorporation of Exhibits. Unless otherwise stated in this Agreement, any exhibits, applications, resolutions, or other documents referenced in this Agreement shall be incorporated by reference into this Agreement for all purposes. In the event of any conflicts between this Agreement and any attached documents, this Agreement shall control.
27. Section Headings. The headings for any section of this Agreement are only for the convenience and reference of the Parties and are not intended in any way to define, limit, or describe the scope or intent of this Agreement.
28. Assignment. The rights, or any parts of this Agreement, granted to the Parties in this Agreement may be assigned only with the prior written consent of the non-assigning Party.
29. Extent of Agreement. This Agreement constitutes the entire agreement of the Parties related to the Grant Project. The Parties agree that there have been no representations made regarding the subject matter of this Agreement other than those, if any, contained in this Agreement, and the various promises and covenants contained in this Agreement are mutually agreed upon and are in consideration of one another.
30. Signatures. The signatories to this Agreement represent that they are fully authorized to execute this Agreement and bind their respective entities.
31. Effective Date. This Agreement will become effective on the date of the Grantee's signature ("Effective Date").

Signature page follows

IN WITNESS WHEREOF, the County and the Grantee have executed this Agreement as of the Effective Date.

ATTEST:

CITY OF LITTLETON

By: _____
Name: Colleen Norton
Title: City Clerk

By: _____
Name: _____
Title: _____
Date: _____

APPROVED AS TO FORM:

By: _____
Name: Reid Betzing
Title: City Attorney:

COUNTY OF ARAPAHOE
STATE OF COLORADO

By: _____
Margina Pingnot, Director, Open Spaces
Pursuant to Resolution No. 24-077

EXHIBIT A

Highline Canal Irrigated Tree Planting Pilot

*2024 High Line Canal Stewardship Grant
Application*

City of Littleton

Heather Ferrari

Mrs. Mary Brand Danser

1800 W Belleview Ave
Littleton, Colorado 80120

mdanser@littletongov.org
O: 303-795-3827
M: 720-281-2805

Application Form

Application Summary

Primary Contact Information*

Please provide information for the primary contact person for this project in the following format.

Agency:

Name:

Title:

Telephone:

Email:

City of Littleton

Mary Danser

City Forester

303-795-3827

mdanser@littletongov.org

Project Title*

Highline Canal Irrigated Tree Planting Pilot

Project Location*

Littleton

Grant Request Amount*

\$233,000.00

Cash Match Amount

Cash match is encouraged, but not required.

\$120,000.00

Total Project Amount*

Total project amount includes grant request and cash match only. Please do not include in-kind match.

\$353,000.00

Cash Match Percentage

Calculate cash match as % of total project cost.

34

Agency Managing the Project

Provide if project manager is different from applicant.

City of Littleton

Project Partners

List partner agencies if applicable.

High Line Canal Conservancy

Executive Summary*

Provide a brief project description (2-3 sentences). Projects must be included in the five-year work plan adopted by the Canal Collaborative in 2024.

The City of Littleton and the High Line Canal Conservancy are partnering to design and implement an irrigated tree planting pilot project on the High Line Canal. As Littleton assumes maintenance of portions of the Canal with unhealthy and declining tree populations, one priority is understanding how to successfully and sustainably establish new trees on the corridor. This project will pilot the concept of installing permanent irrigation infrastructure on the corridor, allowing Littleton to understand the implications for tree establishment and health, water use, and cost and assess the feasibility of implementing this approach along other segments of Canal in the future.

Project Narrative

Question 1*

This funding opportunity is intended to support eligible stewardship and restoration projects that elevate the condition of the High Line Canal corridor in Arapahoe County. Describe the current condition of the proposed project area and the scope, goals, and expected results of your proposed project. Consider impacts to user safety and comfort, accessibility, natural resources and wildlife, etc. Additionally, will the project reduce short-term and/or long-term maintenance needs?

The goal of this project is to design and construct an irrigated tree planting on the High Line Canal in Littleton.

The pilot project was selected based on current canopy conditions, green and social equity needs, and irrigation feasibility. In Spring 2024, the City of Littleton partnered with the High Line Canal Conservancy to complete a preliminary tap analysis for the canal in Littleton. After evaluating irrigation options in the context of City-wide tree planting priorities and current canopy conditions, the segment of canal from Euclid Ave to Broadway/Caley Ave was selected for the pilot project. Within Littleton, this portion of trail is ranked as one of lowest “tree equity scored” areas along the canal. Furthermore, this portion of the canal is adjacent to a middle school and is designated as a Colorado Safe Routes to School.

In 2023, the City of Littleton conducted an Urban Tree Canopy Assessment. The report overlaid tree canopy with land cover classification, land use, census block group, and urban heat temperatures. Combining this data created a socio-economic equity map, showing a holistic framing of where minority populations are not receiving equal distribution of environmental benefits. Too often maps of canopy cover are just maps of income and race, and unfortunately, Littleton is not the exception. The forestry division in Littleton has a long-term goal to reach a total canopy cover of 50%. Success in reaching this goal is dependent on prioritizing resources into current unequitable green spaces.

The importance of planting trees in this area is also underscored by data on the canal's existing trees. The canal tree inventory documented 396 trees over 6" diameter along the pilot project area, but 11% were in poor or worse condition. Of the living trees, 46% are ash and are threatened by Emerald Ash Borer (EAB), which was found in Littleton in 2023. A further 32% of living trees are riparian species that are deteriorating without irrigation water flowing in the canal. Between EAB and lower water availability, over 75% of trees along this reach will be challenged in the coming years.

The canopy decline is reflected in the tree work completed and recommended for this reach. Since 2020, 30 trees have been removed from the project area. An additional 29 removals and 21 prunes are recommended to mitigate hazards in this area. While tree work is ongoing, planting desirable trees is a critical component of proactive canopy management and will help rebuild the canopy in this area.

To address this need, this project will design and construct an irrigated tree planting. The preliminary tap analysis identified an existing connector valve on the canal corridor. The project will begin by designing an irrigation system using a new tap at the identified valve. The number of trees to be planted will be determined during design, based on available pressure and on-the-ground conditions. Littleton will work with Arapahoe County to comply with irrigation design requirements. Hazardous and invasive trees will be removed as necessary to facilitate construction and improve conditions for new tree establishment. The species planted will be chosen following the "right tree in the right place" principle. By choosing species that can provide habitat for wildlife, offer shade for trail users, and withstand hot and dry conditions, this project will positively impact the canal as a recreational and ecological asset.

Identifying long-term water supply is integral to the success of trees in Colorado. Mature trees provide countless benefits. Environmentally, trees produce oxygen, clean air, help manage stormwater, and reduce urban heat island effect. Socially, trees are directly tied to decreased asthma rates, are positively correlated with lower levels of cardiovascular disease and obesity, and reduced stress rates. Economically, trees increase property values, decrease cooling costs, and can help prolong infrastructure replacement rates.

Planting trees is only valuable if trees to grow into maturity and provide their multitude of benefits to the community. With current tree canopy in decline and a drier future ahead, prioritizing consistency in water supply is integral in maintaining, growing, and sustaining canopy cover on the canal. Installing irrigation is a reliable long-term solution to aid in the success of tree development. Though there are alternatives, such as supplemental hand watering, it is neither as cost effective nor as reliable as permanent irrigation. The only shortcoming of installing irrigation is that the infrastructure is expensive to install and potentially to repair. The goal of this project is to pilot the investment in permanent irrigation to support vegetation establishment and success. The hope is that this project will serve as proof to both the long-term cost effectiveness as well as the establishment success of planting efforts on the canal.

Question 2*

What is the extent of the proposed project area (*e.g., miles 56 to 59, between Orchard and Bellevue, within the City of Littleton, etc.*)?

The project is within the City of Littleton, from the Canal's intersection with W Euclid Ave to the west side of the Broadway/Caley Ave intersection in between miles 22 through 23.

Question 3*

Projects funded through this pilot program must be completed by December 31, 2026. Discuss the anticipated timeline, as well as your agency's capacity to complete the project by this deadline.

There are no barriers to this project being completed by December 31, 2026. The preliminary tap feasibility analysis was completed in July 2024 to provide direction for this grant application, giving a head start on the design process. The consultant team that completed the tap feasibility analysis is already familiar with the project area and goals, and would have the ability to dive into full design as soon as grant funds are awarded. The anticipated schedule outlined below is based on grant funds being awarded in December 2024.

Irrigation System Design: Q1-Q2 2025

Irrigation system design will commence in the first quarter of 2025. This will include designing the Central Control system to match the City of Littleton's current system and working with Arapahoe County to implement any Canal-specific design requirements.

Site Preparation: Q1-Q3 2025

As the irrigation system design advances, invasive, undesirable, and hazardous vegetation will be removed to promote a healthy environment for new trees and to facilitate installation of the irrigation line. Rather than including hazardous and invasive trees in tree protection zones, these trees will be removed ahead of construction.

Planting Design: Q2-Q3 2025

Based on the irrigation system design, including flow and existing vegetation conditions, a planting plan will be developed which specifies the number of trees and species to be planted. The preliminary tap analysis estimated that up to 60 trees could be planted on this reach. The planting plan will follow the City of Littleton's diversity goal of no more than 10% of the same genus to be installed. The planting plan will be developed in Q2 and Q3 after the irrigation system design has progressed.

Installation and Planting: Q3-Q4 2025

Once irrigation and planting designs are completed and the site is prepped, installation of the irrigation line and planting of new trees will commence in Q3-Q4 2025. The irrigation line will be installed before ground freeze. Trees will be planted in early October. When the irrigation system is winterized, trees will be truck watered as needed to supplement natural precipitation.

Irrigation Start Up: Q2 2026

The irrigation system will be started up again in spring 2026. It is anticipated that the initial startup and troubleshooting will be performed by the contractor that installed the system. The City of Littleton will then assume monitoring and maintenance of the system.

Question 4*

Will the proposed work limit public access to any part of the trail? If so, for how long? Will a detour be available?

Installation of irrigation line will likely require partial or full closure of the trail between Broadway/Caley Ave and W Euclid Ave (0.4 miles) during construction. If possible, a shoulder closure around the work zone will be prioritized over a full trail closure. If the trail is fully closed, a detour will be provided.

Site preparation requiring the removal of invasive, hazardous, and undesirable vegetation will require a full trail closure for safety. A detour will be provided.

In the case that a detour is established for this project, the detour shall not overlap with school commute times. Because this segment of the trail is designed as a “safe route to school,” the City of Littleton will ensure that students are able to access the trail before and after school.

<https://www.littletonco.gov/Government/City-Services/Transportation/Littleton-School-Route-Planner>

Question 5*

Does this project create new maintenance needs (*e.g., establishing new trees*)? Who will be responsible for maintenance? Describe the responsible agency's capacity and experience with this type of maintenance.

This project will create new maintenance needs which will be taken on by the City of Littleton. The newly planted trees and irrigation line will be maintained by Littleton and incorporated into the City's asset management system.

The City of Littleton has capacity and experience with this type of maintenance. The Forestry Division has 3 full-time staff. The Grounds Division has 4 designated irrigation technicians. Additionally, the City has 2 water trucks which could be used for winter watering when the irrigation system is offline.

Project Budget

Budget Narrative*

Provide a clear and concise budget narrative. Include details about expenses in each budget category, justification for any unusual line items, and an explanation of how you arrived at these estimates. If applicable, include amount and sources of matching funds.

The City of Littleton and the Conservancy engaged Dig Studio and Hydrosystems KDI to develop an Opinion of Probable Cost (OPC) to inform this grant application. The OPC includes all estimated costs associated with site prep, irrigation and planting design, installation, preexisting vegetation protection, and restoration costs. The grand total estimate equals \$353,018, which the OPC rounded to \$353,000 .

From the total cost \$353,000, the Conservancy is matching \$120,000 and the City of Littleton is requesting \$233,000 from Arapahoe County in grant funds.

A noteworthy line item is the site preparation estimating a total of 20 trees/\$30,000 for each trail shoulder. The ultimate goal of this project is the long-term pursuit of increased canopy cover. This current segment of the High Line Canal, though lacking in tree canopy, has a notable amount of undesirable and invasive understory species that need to be removed as a way of limiting competition for the newly planted trees.

Budget Forms*

Budget Forms*

Please attach completed Summary Budget Form and Detailed Expense Budget Form as a single PDF document.

Applicant_BudgetForms.pdf

Please name your file as follows:

CityofLittleton_BudgetFormsCombined.pdf

Project Timeline

Project Timeline Form*

Please attach completed Project Timeline Form as a PDF document. *Required forms are available on the ACOS website.*

Please name your file as follows: *Applicant_TimelineForm.pdf*

CityofLittleton_TimelineForm.pdf

Attachments

Attachment 1: Signature Form*

Please attach completed Certification and Authorized Signature Form as a PDF document. Form must be signed by highest authority in agency or authorized individual. *Required forms are available on the ACOS website.*

Please name your file as follows: *Applicant_SignatureForm.pdf*

CityofLittleton_SignatureForm.pdf

Attachment 2: Evidence of Commitment from Project Partners

If applicable, please attach evidence of commitment from project partners (e.g., a letter committing matching funds to the project) as a single PDF document.

Please name your file as follows: *Applicant_PartnerCommitments.pdf*

CityofLittleton_PartnerCommitments.pdf

Attachment 3: Primary Project Photo*

Please attach one high resolution photo in JPG format. This photo will be used for presentations and/or publications.

Please name your file as follows: *Applicant_PrimaryPhoto.jpg*

CityofLittleton_PrimaryPhoto.jpg

Attachment 4: Photos*

Please attach additional photos of existing conditions at the project site as a single PDF document. Include conceptual drawings if applicable.

Please name your file as follows: *Applicant_Photos.pdf*

CityofLittleton_Photos.pdf

Attachment 5: Maps*

Please attach a map showing the extent of the project area or specific site(s) to be addressed.

Please name your file as follows: *Applicant_Maps.pdf*

CityofLittleton_Maps.pdf

Attachment 6: Other Attachments

If applicable, please attach additional supporting documentation (news articles, cost estimates, etc.) as a single PDF document.

Please name your file as follows: *Applicant_OtherAttachments.pdf*

CityofLittleton_OtherAttachments.pdf

File Attachment Summary

Applicant File Uploads

- CityofLittleton_BudgetFormsCombined.pdf
- CityofLittleton_TimelineForm.pdf
- CityofLittleton_SignatureForm.pdf
- CityofLittleton_PartnerCommitments.pdf
- CityofLittleton_PrimaryPhoto.jpg
- CityofLittleton_Photos.pdf
- CityofLittleton_Maps.pdf
- CityofLittleton_OtherAttachments.pdf

Summary Budget Form - STANDARD Grants (25% minimum cash match)

Source of Funds	Date Funds Secured	Grant Request	Cash Match	Total Project Funds
Arapahoe County Open Spaces Grant		\$233,000		\$233,000
Applicant Cash Match			\$0	\$0
High Line Canal Conservancy	1/1/2024		\$120,000	\$120,000
(Specify) Partner Cash Match/Other Funding Source				\$0
(Specify) Partner Cash Match/Other Funding Source				\$0
Totals		\$233,000	\$120,000	\$353,000

MATCH REQUIREMENTS	Total Project Cost:	\$353,000.00
	Cash Match % Required:	0%
	Cash Match % Budgeted:	34%
	*Match is encouraged, but not required for 2024 HLC Stewardship Grants	

**match fields calculate automatically*

Applicant: City of Littleton

Project Title: High Line Canal Irrigated Tree Planting Pilot

** Please do not include in-kind match on the Budget Forms*

[illegible]



ARAPAHOE COUNTY OPEN SPACES

Project Timeline Form

Applicant: City of Littleton

Project Title: High Line Canal Irrigated Tree Planting Pilot

High Line Canal Stewardship Grants:

Use the sample timeline below as a guide to complete your proposed project timeline. Edit/add rows and columns as necessary to incorporate milestones specific to your project. Projects must be completed by December 31, 2026.

Task	Dec 2024	Jan 2025	Feb 2025	Mar 2025	Apr 2025	May 2025	Jun 2025	July 2025	Aug 2025	Sep 2025	Oct 2025		Apr 2026	May 2026	Jun 2026
Grant Award Notification															
IGA Executed															
Irrigation System Design															
Site Preparation															
Planting Design															
Irrigation Installation & Tree Planting															
Irrigation Start Up															
Final Report															



ARAPAHOE COUNTY
OPEN SPACES

Certification and Authorized Signature Form

Please use this form for the Arapahoe County Open Spaces grant application.

By signing this form, I certify that:

- The information included in this application is true to the best of my knowledge.
- If funded, the applicant commits to completing the proposed project.
- If funded, the applicant accepts responsibility for any cost overruns necessary to complete the project.
- If funded, the completed project will be open to the public or will otherwise serve a public purpose.
- If funded, the applicant agrees to maintain the completed project site or to continue its maintenance agreement with a partner agency as outlined in the application.
- I am authorized to sign on behalf of the applicant.

DocuSigned by:

Jim Becklenberg

Authorized Signature (highest authority in agency or authorized individual)

James L. Becklenberg / City Manager

Printed Name and Title

Highline Canal Irrigated Tree Planting Pilot

Grant Project or Joint Project Name

8/15/2024

Date



TO: Arapahoe County Open Spaces

FROM: High Line Canal Conservancy
Harriet Crittenden LaMair, CEO

DATE: August 13, 2024

SUBJECT: High Line Canal Conservancy Commitment of Funding for Littleton Irrigated Tree Planting Pilot

The Organization

The High Line Canal Conservancy is a nonprofit organization whose mission is to preserve, protect and enhance the 71-mile long High Line Canal in partnership with the public. The Conservancy was formed in 2014 by a passionate coalition of private citizens to provide leadership and harness the region's commitment to protecting the future of the Canal--a 100-foot corridor comprising the canal channel, trail and adjacent vegetation. With support from local jurisdictions and in partnership with Denver Water, the Conservancy is working to ensure that the Canal is protected and enhanced as a natural and recreational corridor for future generations.

Community Outreach

Beginning in 2016, the Conservancy and Denver Water, in close collaboration with a host of regional partners, has engaged with over 5,000 people in a far-reaching community outreach process to envision the future of the High Line Canal. The result was a Community Vision Plan and a subsequent framework plan, The Plan for the High Line Canal. Through this process, the public and partners have focused on a vital future for the Canal as both a recreational and environmental resource.

The Resource

The High Line Canal Trail connects eleven different governmental jurisdictions and sees more than a million users annually. As it traverses the Denver metro area, the Canal beckons walkers, equestrians, families, nature-lovers, bicyclists and neighbors to recreate along its tree-lined banks. Today, the Canal is in a time of transition as Denver Water moves away from delivering irrigation water in the Canal. The Conservancy has spent the last ten years leading robust planning efforts, creating a community vision and a framework plan that envision a connected and natural corridor for all communities. As a partner on the planning of the irrigated tree planting pilot in Littleton, we are pleased to write this letter confirming our support and commitment of funding towards this project.

The Project

The City of Littleton is home to over 5 miles of the historic 71-mile High Line Canal. The High Line Canal was central to the growth of the City of Littleton, providing irrigation water to a growing community, and remains an important historic and natural resource. During development of The Community Vision Plan, input gathered from stakeholders across the region identified protecting



the Canal's natural character as the number one priority for the community. The Plan for the High Line Canal further highlights the importance of preserving and enhancing the Canal's ecosystems, and recommends planting an average of 50 trees per mile on the Canal over 15 years.

To help address this priority, the Conservancy began tree planting pilots on the Canal in 2021, including planting 50 trees on the Canal in Littleton. These trees are being truck watered for up to five years for establishment, but will not have access to permanent irrigation. The Conservancy is excited to collaborate with Littleton on this irrigated tree planting pilot project which will provide valuable data to inform future planting and watering plans, helping to ensure that trees are planted strategically to maximize survival and realize lasting benefits for Canal users and the environment. Additionally, this project will address a community need and City priority by planting trees along a reach that ranked as one of the highest need areas on the Canal based on Littleton's tree equity scoring system.

The Conservancy is thrilled to support Littleton's request to fund this pilot project. The Conservancy is also pleased to be a funding partner for this project, providing \$120,000 in privately raised funds to match this grant application and implement Littleton's first irrigated tree planting on the Canal.

Thank you for your consideration and please feel free to contact me with any additional questions or comments at harriet@highlinecanal.org or 720-217-2056.

Sincerely,

A handwritten signature in black ink, appearing to read "Harriet Crittenden LaMair".

Harriet Crittenden LaMair, Executive Director
High Line Canal Conservancy





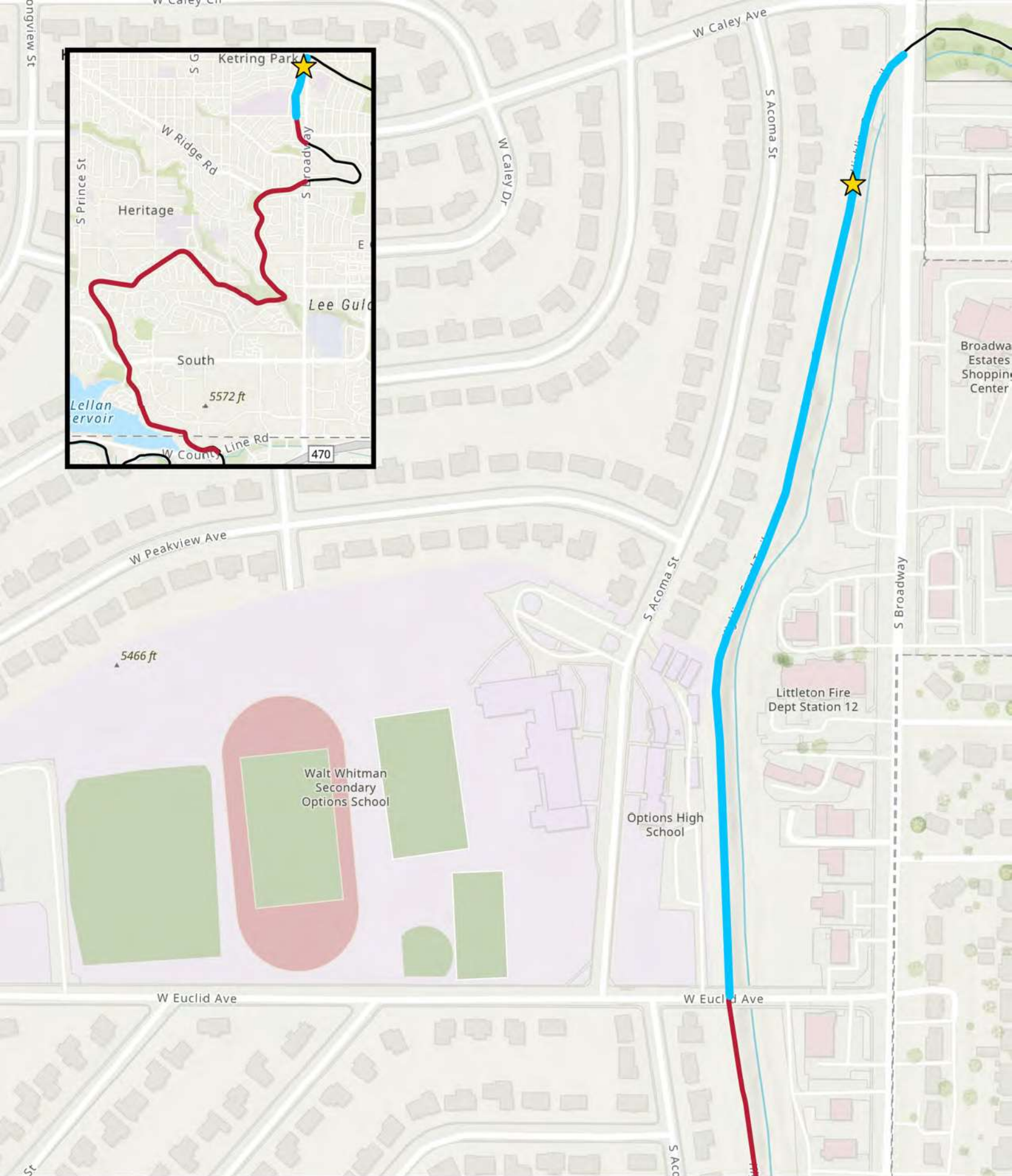
Image 1. Potential planting location on west side of trail. Area is lacking canopy coverage.




Image 2. Potential planting location on east side of trail. site preparation required to plant, including invasive understory and hazardous dead tree removal





Image 3. Potential planting location on west side of trail adjacent to school. Area is lacking canopy coverage.




High Line Canal
Irrigated Tree Planting Pilot
City of Littleton

 Potential Tap Location

 Pilot Project Extent


 HLC Littleton

 HLC

00.050.1

Miles

N



LITTLETON HIGH LINE CANAL TAP FEASIBILITY ANALYSIS

FOCUS SEGMENT A

LEGEND

- Main Line
- Hydrant Branch
- Main Valve
- Hydrant
- Connector Valve

TIER 1 IRRIGATION OPPORTUNITY

- Existing 1" DIA Connector Valve
- Connection point within Canal corridor
- No ROW crossing required to connect
- Potential to irrigate .37 Mi segment from single Tap.
(Outlined In Green)
- Will require new Tap

TIER 2 IRRIGATION OPPORTUNITIES

- Existing 12" DIA Main Valve & 2" DIA Main Valve
- Connection point within Canal corridor
- No ROW crossing required to connect
- Potential to irrigate .18 Mi segment from single Tap.
(Outlined In Purple)
- Will require new Tap

Existing Shoulder Frame lacking many canopy trees along this .13 mi. stretch of the Canal
(magenta line)

ex. very dry, bare

WHITMAN
SCHOOL

EUCLID
MIDDLE
SCHOOL

W. EUCLID AVE

Roadway crossing would be a costly barrier to extending service from Tier 1 connection point to the final 0.18 mi. segment of this reach, but could be feasible based on available tap pressure

east side of trail dense veg, but undesirable overall

pretty dense and narrow ex veg.

E. ARAPAHOE RD

1" = 500'

0 240 480 960

Littleton Pilot Planting & Irrigation Project
Littleton, CO



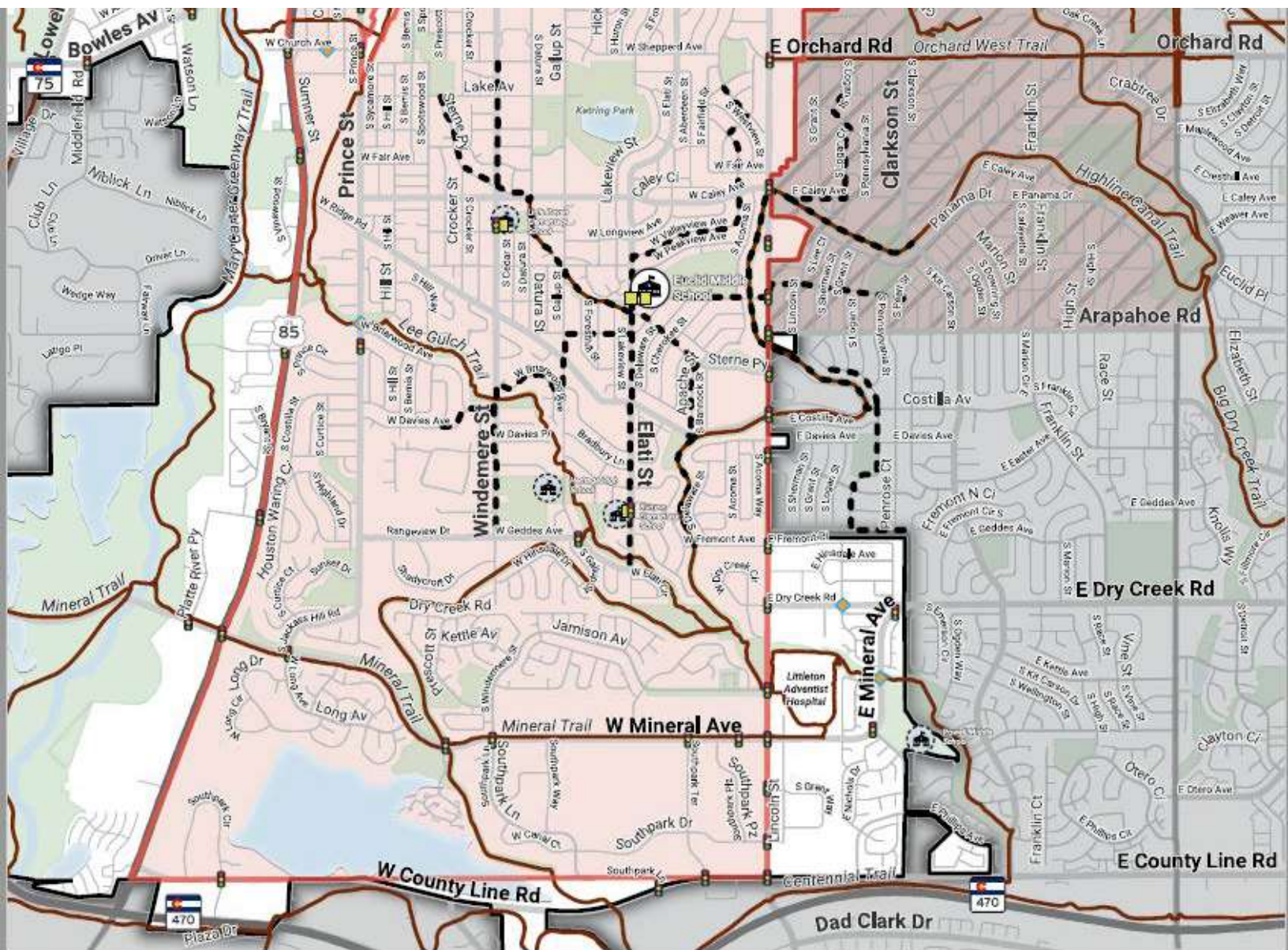
Broadway Pilot Trail Segment - New Irrigation Service OPC

August 8, 2024

West Trail Shoulder	\$172,638.17
East Trail Shoulder	\$180,380.38
Total	\$353,018.55






West Trail Shoulder				
Item	Units	Qty	Unit Cost	Total Cost
Mobilization (+/-7%)	LS	1	\$3,750.00	\$3,750.00
Construction Surveying	LS	1	\$3,500.00	\$3,500.00
Site Prep - Hazard Tree Mitigation & Invasive Tree Removal	EA	20	\$1,500.00	\$30,000.00
Irrigation System Design	T&M		\$10,000.00	\$10,000.00
Planting Plan	T&M		\$5,000.00	\$5,000.00
Tap Fee - minimum (for 5,000 sq ft)	EA	1	\$8,150.00	\$8,150.00
Irrigation Tap -1" Size (does not include tap fee)	LS	1	\$24,250.00	\$24,250.00
Irrigation Tap Connection Boring Under Trail	LF	10	\$35.00	\$350.00
Irrigation Backflow Assembly, cover MV, FS	EA	1	\$5,000.00	\$5,000.00
Irrigation Controller -2 wire Rain Bird	EA	1	\$8,500.00	\$8,500.00
Power Drop - for controller (120V, 15 amp service)	EA	1	\$5,000.00	\$5,000.00
Irrigation Mainline, installed w/ fittings -2"	LF	1,963	\$4.57	\$8,970.91
Electric Control Valves -1" Drip Valve Assemblies w/ decoders	EA	2	\$525.00	\$1,050.00
Irrigation Tree Rings	EA	20	\$75.00	\$1,500.00
Irrigation Lateral Trenching -1.25"	LF	600	\$3.94	\$2,364.00
Grounding -2 wire	EA	3	\$350.00	\$1,050.00
Perforated Drain Piping, Pea Gravel, Geotextile	LF	2,563	\$5.00	\$12,815.00
Deciduous Trees	EA	20	\$882.00	\$17,640.00
Native Seed Mix (Mainline Trenching Restoration, 3' wide)	LF	5,889	\$0.16	\$942.24
Native Seed Mix (Lateral Trenching Restoration, 3' wide)	LF	1,800	\$0.16	\$288.00
Subtotal West Trail Shoulder				\$150,120.15
Contingency (15%)				\$22,518.02
Total West Trail Shoulder				\$172,638.17

East Trail Shoulder				
Mobilization (+/-7%)	LS	1	\$3,750.00	\$3,750.00
Construction Surveying	LS	1	\$1,000.00	\$1,000.00
Site Prep - Hazard Tree Mitigation & Invasive Tree Removal	EA	20	\$1,500.00	\$30,000.00
Tap Fee - additional irrigated area	SF	48,000	\$1.22	\$58,560.00
Tree Protection Fencing	LS	1	\$2,000.00	\$2,000.00
Irrigation Mainline, installed w/ fittings -2"	LF	290	\$4.57	\$1,325.30
Electric Control Valves -1" Drip Valve Assemblies w/ decoders	EA	4	\$525.00	\$2,100.00
Irrigation Tree Rings	EA	40	\$75.00	\$3,000.00
Irrigation Lateral Trenching -1.25"	LF	1,900	\$3.94	\$7,486.00
Grounding -2 wire	EA	1	\$350.00	\$350.00
Perforated Drain Piping, Pea Gravel, Geotextile	LF	2,190	\$5.00	\$10,950.00
Deciduous Trees	EA	40	\$882.00	\$35,280.00
Native Seed Mix (Mainline Trenching Restoration, 3' wide)	LF	870	\$0.16	\$139.20
Native Seed Mix (Lateral Trenching Restoration, 3' wide)	LF	5,700	\$0.16	\$912.00
Subtotal East Trail Shoulder				\$156,852.50
Contingency (15%)				\$23,527.88
Total East Trail Shoulder				\$180,380.38



Euclid Middle School

Littleton Safe Routes to School

-  Euclid Middle School
-  School Boundary within City of Littleton
-  School Boundary outside City of Littleton
-  Other Schools
-  Proposed School Route

-  Existing Trails
-  Rectangular Rapid Flashing Beacon
-  Crossing Guard
-  Traffic Signal
-  Parks and Open Spaces
-  Littleton City Boundary



0 0.25 0.5 mi



LITTLETON
PUBLIC 
SCHOOLS

Littleton

TOOLE
DESIGN

City of Littleton: High Line Canal 5-Year Work Plan Overview

Overview

With the launch of the Canal Collaborative regional management structure, each partner has developed a 5-year work plan that reflects jurisdictional priorities, potential funding partners and Canal-wide projects. These work plans are a critical tool to advance implementation of The Plan for the High Line Canal. This document provides an overview of projects underway and planned in the City of Littleton for the period of 2024-2028.

2024 Projects

Irrigated Tree Planting Pilot Project Design

The City of Littleton is partnering with the Conservancy to complete a tap analysis for the reach of the Canal in Littleton and design an irrigated tree planting pilot project. The Conservancy has secured funding for the tap analysis and design and additional funding will be needed as a match to implement the pilot project in 2025.

Euclid Stormwater Project

The City of Littleton has converted an additional half mile of the Canal to green stormwater infrastructure, assuming maintenance and management of the Canal between the second and third crossing of S. Broadway. This is Littleton's second stormwater project after converting a one-mile reach from Windermere Street to Lee Gulch.

Jackass Gulch Improvements

The City of Littleton is advancing water quality and channel stabilization improvements along Jackass Gulch, including in an open space adjacent to the Canal just north of Mineral Avenue. Littleton is working on incorporating a pause place along the Canal for users to stop and enjoy the incredible views of the front range and the soon-to-be improved gulch. The project also includes improved trails within the adjacent open space to provide connections to the gulch and the nearby Mineral Spur Trail. Littleton will continue to work with SSPRD and the Conservancy to incorporate these recreation improvements in the project.



JACKASS POND AND STABILIZATION

Preliminary Design of the Jackass Gulch Improvements

C-470 Trail Connection Design

The City of Littleton has secured federal funding to improve the connection between the High Line Canal Trail and the C-470 Trail (also called the Centennial Trail) just south of County Line Rd. This project will improve east/west connectivity within Littleton and improve the safety of this challenging trail juncture.

Mineral Avenue Crossing Enhancements

The City of Littleton is making at-grade improvements to the Canal's crossing at Mineral Avenue and has secured funding from Arapahoe County Open Spaces to study the potential for an underpass at this location. At-grade enhancements will reconfigure the crossing with improved pedestrian ramps, better visibility, enhanced striping and signage. This crossing was identified for an underpass in Littleton's Transportation Master Plan.

Broadway Corridor Study

The City of Littleton is partnering with the City and County of Denver, Arapahoe County, Douglas County, City of Englewood and City of Centennial to study the transportation and land use conditions along an 11-mile stretch of



Broadway. This study includes funding for early action projects, one of which is to assess all three High Line Canal crossings of S. Broadway and evaluate potential safety improvements that could be made at-grade.

5-Year Work Plan Projects

Irrigated Tree Planting Pilot Project

The Conservancy began tree planting pilot projects in 2021, including planting 50 trees in Littleton. The Conservancy will continue to support tree planting in Littleton and has allocated an additional \$187,000 towards tree planting, watering and irrigation implementation in Littleton over the next five years. The 2021 pilot included primarily xeric, drought-tolerant trees that will be truck irrigated for five years of establishment and a small number of riparian trees planted in the Canal channel. The Conservancy and the City of Littleton are currently evaluating the potential to install permanent irrigation as a part of a pilot project in 2025 to support tree establishment and allow for a broader palette of trees to be considered.



Conservancy volunteers plant a Kentucky Coffeetree

Broadway and Arapahoe Underpass Design

Arapahoe County and the Cities of Littleton and Centennial secured federal funding to advance the design of an underpass at the challenging intersection of S. Broadway and Arapahoe Rd. This effort will include design, engineering, right-of-way and utilities to prepare for a potential future underpass. An underpass in this location was prioritized in The Plan for the High Line Canal as well as in Littleton's Transportation Master Plan.

C-470 Trail Connection

The City of Littleton has secured federal funding to improve the connection between the High Line Canal Trail and the C-470 Trail (also called the Centennial Trail) just south of County Line Rd. This project will improve east/west connectivity within Littleton and improve the safety of this challenging trail juncture.

Footbridge Park Crossing Enhancement

The Plan proposes improving the safety of the at-grade crossing at Footbridge Park, enhancing this connection between Heritage High School and the High Line Canal Trail.

Canal Collaborative Projects

Natural Resources Management Plan

The Plan for the High Line Canal calls for a Natural Resources Management Plan (NRM Plan) that inventories the existing conditions on the corridor, guides natural resources management and recommends landscape enhancement strategies that can improve the Canal's environmental health. A steering committee that includes Arapahoe County Open Spaces, Denver Parks and Recreation, Douglas County Parks, Trail and Building Grounds, the High Line Canal Conservancy the Mile High Flood District selected the consultant team of Biohabitats, Dig Studios and HydroSystems to lead the Canal-wide NRM Plan. The planning effort kicked off in May 2024 and will continue into the second quarter of 2025.

Stormwater Transition and Management Plan

The Mile High Flood District has launched a Stormwater Transition and Management Plan (STAMP) to guide the Canal's transition from irrigation delivery to stormwater conveyance. The STAMP will be led by Icon Engineering and the scope includes both Canal-wide and jurisdiction-specific work. The Canal-wide scope will address Canal operations and management, the regulatory environment related to the Canal's use for stormwater conveyance, and refine capital improvement recommendations put forward in the 2018 stormwater master plan. The jurisdiction-specific scope will include refining the stormwater operational model for the Canal and prioritizing capital improvements required to safely convey stormwater in the Canal. The planning effort kicked off in April 2024 and will continue into 2025.

Tree Canopy Care



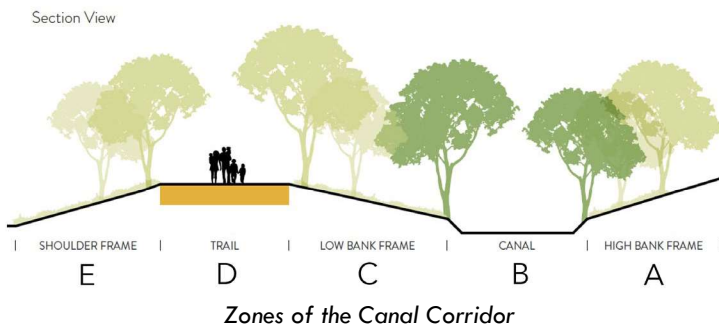
Canal Collaborative partners came together to complete a Canal-wide tree risk assessment in 2022, evaluating the more than 8,000 trees along the corridor that are greater than 12" in diameter at breast height (DBH). Denver Water and several Canal Collaborative partners continue to prune and remove hazardous trees prioritized in the assessment and in 2024 the Conservancy has begun investing in hazard tree mitigation through the Stewardship Fund.

Russian Olive Removal

Russian olive is an invasive species that competes with trees and desired vegetation for scarce water resources. The Conservancy has partnered with Mile High Youth Corps (MHYC), a non-profit organization that employs youth and exposes them to natural resource professions, to remove and treat Russian olive since 2022, covering a total of 25 miles throughout Denver, Greenwood Village and Centennial. In 2024, MHYC will work in Cherry Hills Village and Aurora, with a goal to cover an additional 15 miles.

Corridor Transition and Maintenance

As the Canal's primary function evolves from irrigation system to recreational, ecological and stormwater resource, responsibility for the care of the Canal is shifting to the entities with primary use of the Canal for both recreation and



stormwater management. The Canal Collaborative leadership team is working through the details of this process, including the timeline for the corridor's transition, responsibilities associated with care of the Canal and the areas of responsibility that may be maintained by various partners. The goal is to complete this transition of responsibilities by the beginning of 2027. The zone map on the left shows the cross-sections of the Canal that are being used to detail responsibilities for each section of the Canal corridor and coordinate between these partner agencies.

Adopt-a-Bench and Adopt-a-Tree Programs

The Conservancy has launched the High Line Canal Adopt-a-Bench and Adopt-a-Tree Programs to create donor recognition opportunities that provide critical funds for the Conservancy's operations while enhancing the corridor. The Conservancy is responsible for installation and maintenance of new benches on the Canal and is willing to take over maintenance of existing benches if they can be folded into the Adopt-a-Bench program. As the Conservancy advances tree planting projects, donors are being recognized with hang tags on newly planted trees for six months and permanently recognized in the Conservancy's GIS database.

Historic Context and Interpretive Plan

The Conservancy has applied to a grant from the State Historical Fund in the Spring of 2024 to develop a historic context and interpretive plan for the Canal. The historic context will document a comprehensive history of the Canal, engaging Canal Collaborative partners, local history museums and historic societies to develop historic narratives and themes that will guide future interpretation. The interpretive plan will generate a detailed approach to educating the public about the Canal's unique history, ecology and changing uses.

