



DRCOG FY2022-2025 TIP – Arapahoe County Subregion
Subregional Share Air Quality/Multimodal (AQ/MM)
Application Programming Federal Fiscal Years 2023-2025

APPLICATION OVERVIEW

What: The Subregional Share Call for Projects for the FY2022-2025 TIP, programming fiscal years 2023-2025

Funding Available: \$161,292,000 overall. Target of \$30,016,000 for Arapahoe County (estimated as of the open date)

Application: Air Quality & Multimodal (AQ/MM) eligible projects only

Major Project Eligibility Exceptions: Roadway capacity, roadway reconstruction, bridge, interchange projects

Call Opens: May 2, 2022

Call Closes: June 24, 2022, 3 pm

Application Submittals: submit the items below online through the submittal link on the [TIP Data Hub](#)

1. REQUIRED: a **single PDF document** containing the below. Please DO NOT attach additional cover pages, embed graphics in the application, or otherwise change the format of the application form.
 - a. this application
 - b. one location map/graphic
 - c. cost estimate (your own or the CDOT [cost estimate form](#))
 - d. CDOT/RTD concurrence response (if applicable)
 - e. any required documentation based on the application text (i.e., FHWA emissions calculators)
 - f. project support letters and/or [Request for Peer Agency Support](#)
2. OPTIONAL: Submit **one additional** PDF document containing any supplemental materials, if applicable
3. REQUIRED: Submit a zipped GIS shapefile of your project. Requests for assistance with creating a shapefile should be submitted to tipapplications@drcog.org no later than June 3, 2022

Other Notable items:

- **TIP Trainings:** To be eligible to submit an application, at least one person from your agency must have attended one of the two mandatory TIP training workshops ([February 10](#) and [February 16, 2022](#))
- **CDOT/RTD Concurrence:** If required, [CDOT and/or RTD concurrence](#) must be provided with the application submittal. The CDOT/RTD concurrence request is due to CDOT/RTD no later than May 13, 2022, with CDOT/RTD providing a response no later than June 10, 2022. Submit requests to the following: CDOT Region 1 – JoAnn Mattson, joann.mattson@state.co.us; CDOT Region 4 – Josie Hadley, josie.hadley@state.co.us; RTD – Chris Quinn, chris.quinn@rtd-denver.com
- **If a submitted application in Call #1 was not funded,** and you wish to resubmit the same application for this call, please contact DRCOG at tipapplications@drcog.org. In these cases, we can unlock the application, change the title, and save the applicant work in the resubmittal process.
- **Application Data:** To assist sponsors in filling out the application, DRCOG has developed a TIP Data Tool to streamline quantitative analyses requested in the application. A link to the TIP Data Tool and instructions on how to use it are available on the TIP Data Hub. Additionally, sponsors may download datasets to run their own analyses from this same site. Requests for additional data or calculations from DRCOG staff should be submitted to tipapplications@drcog.org no later than June 3, 2022
- **Project Affirmation:** The application must be affirmed by either the applicant’s City or County Manager, Chief Elected Official (Mayor or County Commission Chair) for local governments, or agency director or equivalent for other applicants
- **TIP Policy:** Further details on project eligibility, evaluation criteria, and the selection process are defined in the [Policies for TIP Program Development](#) document (a [quick-guide](#) is also available for reference)
- **Evaluation Process:** DRCOG staff will review submittals for eligibility and post to the DRCOG website (June 27-July 1). Applications and scoring sheets will then be provided to the individual subregional forums no later than July 1. The forums will then review, score, discuss, and rank the applications and provide a recommended funding list within the funding available by August 5. The forums’ recommendations will then be forwarded to the DRCOG committee process for incorporation into the adopted TIP
- If you have any questions or need assistance, reach out to us at tipapplications@drcog.org

APPLICATION FORMAT

The AQ/MM Subregional Share application contains two parts: *project information* and *evaluation questions*.

Project Information

Applicants enter **foundational** information for the *project/program/study* (hereafter referred to as *project*), including a problem statement, project description, and concurrence documentation from CDOT and/or RTD, if applicable. This section is not scored.

Evaluation Questions

This part includes four sections (A-D) for the **applicant to provide qualitative and quantitative responses** to use for scoring projects. The checkboxes and data entry fields should guide the applicant’s responses. They are not directly scored but provide context as reviewers consider the full response to each question. Applicants may access the TIP Data Tool and additional data resources which applicants may find useful [here](#).

Scoring Methodology: Each section will be scored on a scale of 0 to 5, relative to other applications received. All questions will be factored into the final score, with any questions left blank receiving 0 points. The four sections are weighted and scored as follows:

Section A. Subregional Impact of Proposed Projects 30%

Projects will be evaluated on the degree to which they address a significant regional or subregional problem or benefit people throughout the subregion. Relevant quantitative data should be included within narrative responses.

5	The project benefits will substantially address a major regional or subregional problem and benefit people and businesses in multiple subregions.
4	The project benefits will significantly address a major subregional problem primarily benefiting people and businesses in one subregion.
3	The project benefits will either moderately address a major subregional problem or significantly address a moderate -level subregional problem.
2	The project benefits will moderately address a moderate -level subregional problem.
1	The project benefits will address a minor subregional problem.
0	The project does not address a subregional problem.

Section B. Metro Vision Regional Transportation Plan Priorities50%

The TIP’s investments should implement the 2050 Metro Vision Regional Transportation Plan (2050 MVRTP) regional project and program investment priorities, which contribute to addressing the Board-adopted Metro Vision objectives and the federal performance-based planning framework required by the Federal Highway Administration and Federal Transit Administration as outlined in current federal transportation legislation and regulations. Therefore, projects will be evaluated on the degree to which they address the six priorities identified in the 2050 MVRTP: safety, active transportation, air quality, multimodal mobility, freight, and regional transit. It is anticipated that projects may not be able to address all six priorities, but it’s in the applicant’s interest to address as many priority areas as possible. Relevant quantitative data is required to be included within narrative responses. The table below demonstrates how each priority area will be scored.

5	The project provides demonstrable substantial benefits in the 2050 MVRTP priority area and is determined to be in the top fifth of applications based on the magnitude of benefits in that priority area.
4	The project provides demonstrable significant benefits in the 2050 MVRTP priority area.
3	The project provides demonstrable moderate benefits in the 2050 MVRTP priority area and is determined to be in the middle fifth of applications based on the magnitude of benefits in that priority area.
2	The project provides demonstrable modest benefits in the 2050 MVRTP priority area.
1	The project provides demonstrable slight benefits in the 2050 MVRTP priority area and is determined to be in the bottom fifth of applications based on the magnitude of benefits in that priority area.
0	The project does not provide demonstrable benefits in the 2050 MVRTP priority area.

Section C. Project Leveraging (“overmatch”) 10%
 Scores are assigned based on the percent of other funding sources (non-Subregional Share funds).

Score	% non-Subregional Share funds
5	60% and above
4	50-59.9%
3	40-49.9%
2	20-39.9%
1	10.1-19.9%
0	10%

Section D. Project Readiness 10%

Be sure to answer ALL questions. While “Yes” answers will generally reflect greater readiness, opportunities are given to provide additional details to assist reviewers in fully evaluating the readiness of your project.

5	Substantial readiness is demonstrated and all known obstacles that are likely to result in project delays have been mitigated.
4	Significant readiness is demonstrated and several known obstacles that are likely to result in project delays have been mitigated.
3	Moderate readiness is demonstrated and some known obstacles that are likely to result in project delays have been mitigated.
2	Slight readiness is demonstrated and some known obstacles that are likely to result in project delays have been mitigated.
1	Few mitigation or readiness activities have been demonstrated.
0	No mitigation or readiness activities have been demonstrated.

Project Information

1. Project Title		High Line Canal Trail Underpass at Broadway and Arapahoe	
2. Project Location <i>Provide a map, as appropriate (see Page 1)</i>		Start point:	
		End point:	
		OR Geographic Area:	Intersection of S. Broadway and the High Line Canal
3. Project Sponsor <i>(entity that will be financially responsible for the project)</i>		Arapahoe County Open Spaces	
4. Project Contact Person:			
Name	Cathleen Valencia	Title	Capital Improvement Program Manager
Phone	720-237-2415	Email	cvalencia@arapahoegov.com
5. Required CDOT and/or RTD Concurrence: Does this project touch CDOT Right-of-Way, involve a CDOT roadway, access RTD property, or request RTD involvement to operate service?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>If yes, provide applicable concurrence documentation</i>	
		<input type="checkbox"/> DRCOG 2050 Metro Vision Regional Transportation Plan (2050 MVRTP) Provide MVRTP staging period, if applicable capital project:	
6. What planning document(s) identifies this project? <i>Provide link to document(s) and referenced page number if possible, or provide documentation in the supplement</i>	<input checked="" type="checkbox"/> Local/Regional plan:	Planning Document Title: Feasibility Study for High Line Canal Crossings (pg. 53-55), Littleton Transportation Master Plan (pg. 91, 168) The Plan for the High Line Canal (pg. 64, 278- 283) Adopting agency (local agency Council, CDOT, RTD, etc.): Multiple local agencies and stakeholders. Provide date of adoption by council/board/commission, if applicable: May 2014, October 2019, and September 2019 respectively.	
	Please describe public review/engagement to date:	The High Line Conservancy held open house and stakeholder discussion as a part of the "The Plan for the High Line Canal" and reached over 600 community members (pg. 18).	
	Other pertinent details:	The High Line Conservancy has been advocating for continued maintenance and improvements to the High Line Canal Trail since 2014. Other High Line Canal crossing improvements, including grade separated crossings, have been constructed recently and have been met with resounding approval by the public. This project aims to continue multimodal improvements, not only for the High Line Canal Trail, but as a part of the Denver Metro's continued commitment to non-vehicular mobility.	
7. Identify the project's key phases and the anticipated schedule of phase milestones. (phases and dates should correspond with the Funding Breakdown table below)			
Phases to be included:	Major phase milestones:		Anticipated completion date (based on 9/21/2022 DRCOG approval date): (MM/YYYY)

<u>FOR ALL PHASES</u>	Intergovernmental Agreement (IGA) executed (with CDOT/RTD; assumed process is 4-9 months)	11/2023
<input checked="" type="checkbox"/> Design	Design contract Notice to Proceed (NTP) issued (if using a consultant):	12/2022
	Design scoping meeting held with CDOT (if no consultant):	
<input checked="" type="checkbox"/> Environmental	Environmental contract Notice to Proceed (NTP) issued (if using a consultant):	03/2023
	Environmental scoping meeting held with CDOT (if no consultant):	
<input checked="" type="checkbox"/> Right-of-Way	Initial set of ROW plans submitted to CDOT:	03/2023
	ROW acquisition completed: Estimated number of parcels to acquire:	
<input type="checkbox"/> Construction	FIR (Field Inspection Review):	
	FOR (Final Office Review):	
	Required clearances:	
	Project publicly advertised:	
<input type="checkbox"/> Study	Kick-off meeting held after consultant NTP (or internal if no consultant):	
<input type="checkbox"/> Bus Service	Service begins:	
<input type="checkbox"/> Equipment Purchase (Procurement)	RFP/RFQ/RFB (bids) issued:	
<input checked="" type="checkbox"/> Other: Utility Relocation	First invoice submitted to CDOT/RTD:	01/2024

8. Problem Statement: What specific subregional problem/issue will the transportation project address?

South Broadway at Arapahoe Road is a 35mph, 30,000+ vehicle per day, 4-lane arterial roadway that runs 16+ miles north-south through the Denver Metro Area. Having only a painted median at the project location, the roadway takes significant effort to cross, even at a stop-controlled intersection. The High Line Canal Trail crosses through 4 counties and 7 different jurisdictions, providing a regional connection for active transportation and recreation. This project focuses on the trail crossing of Broadway just south of Arapahoe Rd. This location, which is surrounded by residential and commercial sites, was identified as a major mobility barrier by The Plan For the High Line Canal study, funded and endorsed by the High Line Conservancy, Denver Water, and local jurisdictions along the Canal. The Study concluded that a grade separated crossing would close a gap between the two existing bike/ped facilities on either side of S. Broadway and greatly improve the safety and mobility of all current and future trail users, as well as provide a link between multiple jurisdictions. This project aims to tear down the existing mobility barrier and expand the regional opportunities of those living and working in the area who desire alternative modes of transportation.

9. Identify the project's key elements. A single project may have multiple project elements.

Roadway

Operational Improvements

Grade Separation

Roadway

Railway

Bicycle

Pedestrian

Regional Transit¹

Rapid Transit Capacity (2050 MVRTF)

Mobility Hub(s)

Transit Planning Corridors

Transit Facilities/Service (Expansion/New)

Safety Improvements

Active Transportation Improvements

Bicycle Facility

Pedestrian Facility

Air Quality Improvements

Improvements Impacting Freight

Multimodal Mobility (i.e., accommodating a broad range of users)

Complete Streets Improvements

Study

Other, briefly describe:

¹For any project with transit elements, the sponsor must coordinate with RTD to ensure RTD agrees to the scope and cost. Be sure to include RTD’s concurrence in your application submittal.

10. Define the **scope and **specific elements** of the project (including any elements checked in #9 above). *DO NOT include scope elements that will not be part of the DRCOG funded project or your IGA scope of work (i.e., adjacent locally funded improvements or the project merits and benefits). Please keep the response to this question tailored to details of the scope only and no more than five sentences.***

The project will design an underpass at the intersection of the High Line Canal Trail and South Broadway, approximately 200’ south of Arapahoe Road. The project also includes utility relocation and ROW acquisition if applicable. The underpass is anticipated to be a 16’ wide by 12’ tall box culvert structure.

11. What is the current status of the proposed scope as defined in Question 10 above? *Note that overall project readiness is addressed in more detail in Section D below.*

Arapahoe County Open Spaces conducted a study in September of 2021 to determine the feasibility of underpasses at 7 locations along the High Line Canal Trail in partnership with the High Line Canal Conservancy and local municipalities. The location at Broadway and Arapahoe was deemed feasible during preliminary design. To date, the project team has performed a field survey, initial utility investigation, stakeholder outreach and discussion, and completed 30% (FIR) design plans for this location. This project is currently ready to start the final design process.

12. Would a smaller DRCOG-allocation than requested be acceptable, while maintaining the original intent of the project?

Yes No

*If yes, smaller meaningful limits, size, service level, phases, or scopes, along with the cost, **MUST** be defined.*

Smaller DRCOG funding request:

Outline the differences between the scope outlined above and the reduced scope:

Project Financial Information and Funding Request		(All funding amounts in \$1,000s)	
Total amount of Subregional Share Funding Request (in \$1,000's) <i>(No less than \$100,000 and not to exceed 90% of the total project cost)</i> <input type="checkbox"/> Check box if requesting only state MMOF funds (requires minimum 50% local funds) ¹		\$1,437	79.83% of total project cost
Match Funds (in \$1,000's) List each funding source and contribution amount.		Contribution Amount	% Contribution to Overall Project Total
Arapahoe County Open Spaces		\$121	7%
City of Centennial		\$121	7%
City of Littleton		\$121	7%
		\$	0%
		\$	0%
		\$	0%
Total Match <i>(private, local, state, another subregion, or federal)</i>		\$363	20.17%
Project Total		\$1,800	
Notes:	1. Per CDOT action, the following jurisdictions are only required to provide 25% match on the MMOF funds: Englewood, Jamestown, and Wheat Ridge. The following jurisdictions are not required to provide a match on the MMOF funds: Federal Heights, Lakeside, Larkspur, Sheridan, and Ward. All sponsors will still be required to have 20% match on any added federal funds.		

Funding Breakdown (in \$1,000s) (by program year)¹ (Total funding should match the Project Total from above)

	FY 2023	FY 2024	FY 2025	Total
DRCOG Requested Funds	\$799	\$158	\$480	\$1,437
CDOT or RTD Supplied Funds²	\$	\$	\$	\$0
Local Funds (Funding from sources other than DRCOG, CDOT, or RTD)	\$201	\$42	\$120	\$363
Total Funding	\$1,000	\$200	\$600	\$1,800
Phase to be Initiated	Design	ROW	Other	
Notes:	<ol style="list-style-type: none"> 1. Fiscal years are October 1 through September 30 (e.g., FY 2023 is October 1, 2022 through September 30, 2023). The proposed funding plan is not guaranteed if the project is selected for funding. While DRCOG will do everything it can to accommodate the applicants' request, final funding will be assigned at DRCOG's discretion within fiscal constraint. Funding amounts must be provided in year of expenditure dollars using a recommended 3% inflation factor. 2. Only enter funding in this line if CDOT and/or RTD specifically give permission via concurrence letters or other written source. 			
Affirmation:	By checking this box, the applicant's Chief Elected Official (Mayor or County Commission Chair/City or County Manager/Agency Director) has certified it allows this application to be submitted for potential DRCOG-allocated funding and will follow all local, DRCOG, state, and federal policies and regulations if funding is awarded. <input checked="" type="checkbox"/>			

Evaluation Questions

A. Subregional Impact of Proposed Project

WEIGHT

30%

Provide **qualitative and quantitative** responses to the following questions on the regional impact of the proposed project. Be sure to provide all required information for each question. Quantitative data from DRCOG is available [here](#).

1. Why is this project subregionally important? Relevant quantitative data in your response is required.

The 71-mile High Line Canal Trail connects five different municipalities across Arapahoe County and connects to three other counties in the region, making it a critical connection for active transportation and recreation. A 2021 trail count completed by the High Line Canal Conservancy registered over one million annual users on the trail corridor. The Cities of Littleton and Centennial are two of the best used reaches of the Canal trail and the challenging crossing at Broadway and Arapahoe forms a major barrier between these two communities. During development of The Plan for the High Line Canal, significant public interest in safety improvements on the Broadway Corridor led to this area being identified as one of seven primary opportunity areas prioritized in The Plan.

2. How will the proposed project address the specific transportation problem described in the **Problem Statement** (as submitted in Project Information, #8)? Relevant quantitative data in your response is required.

Broadway creates a significant barrier for High Line Canal Trail users and isolates a small, 600+-resident, low-income community of condos on the east side of Broadway along a loop of the High Line Canal trail between the signalized crossing at the High Line Canal and Ridge Road and this crossing south of Arapahoe Road. High Line Canal Conservancy annual trail user counts from 2021 recorded 92,752 trail users west of Broadway in Littleton and 130,960 trail users east of Broadway in Centennial. However, trail user counts along the loop between these two Broadway crossings recorded just 30,035 users that same year. This data shows substantial demand for use of the High Line Canal trail and demonstrates the significant barrier that is formed by this dangerous crossing of Broadway. Installation of an underpass at Broadway and Arapahoe aims to significantly increase the number of trail users continuing along the path (by removing the barrier), improve safety for all Canal trail users, and increase mobility along the Broadway corridor.

3. Does the proposed project benefit multiple municipalities and/or subregions? If yes, which ones and how? Also describe any funding partnerships (*other subregions, regional agencies, municipalities, private, etc.*) established in association with this project.

The proposed project will directly benefit the Cities of Littleton and Centennial as Broadway forms the border between these communities. In addition, the project will benefit the three additional municipalities in Arapahoe County along the High Line Canal Trail and three other counties the Canal traverses. This project was a high priority in The Plan for the High Line Canal, a collaborative effort that was developed by these eleven jurisdictions, Denver Water, and the High Line Canal Conservancy. The Plan was jointly funded by these partners to bring a cohesive vision to the 71-mile Canal corridor and has been endorsed by each governing body. Preliminary design for the project was funded by Arapahoe County Open Spaces and managed by Arapahoe County Public Works. Staff from the Cities of Littleton and Centennial as well as the High Line Canal Conservancy participated in the design process. The local match for the project will be funded jointly by Arapahoe County and the Cities of Littleton and Centennial.

4. Describe how the project will improve access and mobility for each of the applicable disproportionately impacted and environmental justice population groups identified in the table below. This data is available in the TIP Data Tool.

Completing the below table and referencing relevant quantitative data in your response is required.

	DI and EJ Population Groups	Number within ½ mile	% of Total	Regional %
Use 2015-2019 American Community Survey Data (In the TIP Data Tool, use a 0.5 mile buffer)	a. Total population	8,914	-	-
	b. Total households	3,730	-	-
	c. Individuals of color	1,491	17%	33%
	d. Low-Income households	351	9%	9%
	e. Individuals with limited English proficiency	141	2%	3%
	f. Adults age 65 and over	1,695	19%	13%
	g. Children age 5-17	1,469	16%	16%
	h. Individuals with a disability	336	4%	9%
	i. Households without a motor vehicle	104	3%	5%
	j. Households that are housing cost-burdened	721	19%	32%

For Lines c. – i. use definitions in the [DRCOG Title VI Implementation Plan](#). For Line j., as defined in C.R.S. 24-38.5-302(3)(b)(I): “cost-burdened” means a household that spends more than thirty percent of its income on housing.”

Describe how this project will improve access and mobility for each of the applicable groups, *including the required quantitative analysis:*

All residents within a 0.5 mile buffer of the project will benefit from improved safety and connectivity along the Broadway corridor. Individuals of color and low-income individuals will benefit from improved multimodal connections in the area. This project will be particularly beneficial for the low-income households in the condo communities on the east side of Broadway who live along the High Line Canal between the intersections of Broadway and Ridge and Broadway and Arapahoe. The Canal creates a major barrier for this community, leading to limited active transportation options, and the block group that contains this community scores the highest rating on DRCOG’s measure of vulnerable populations (the block group immediately across Broadway that would be connected by this underpass also scores a 4 out of 5 for vulnerability). This block group makes up for 15% of the residents within the 0.5 mile buffer and has rates of disabilities, households without vehicles and poverty that are above the regional average. This community has a significantly larger proportion of adults with a disability (over 13%), a constituency that will benefit significantly from improved accessibility along the Broadway corridor. It is important to note that while the many of the DI and EJ population groups are at or below the regional average within the 0.5 mile buffer, the communities along Broadway where the underpass will be located both have above average representation of many of these groups and score highly across vulnerability indicators.

Older adults and children will also benefit from improved safety and connectivity along the High Line Canal trail. With two schools immediately west of Broadway, the proposed underpass has the opportunity to provide a safe route to school for youth ages 5 to 17. This area also has a large proportion of older adults, with nearly all of the Census block groups within the 0.5 mile buffer of the project showing on DRCOG’S vulnerable populations map as having 65+ populations that are above the regional average. Households with limited English proficiency and households that are cost burdened will also benefit from improved access to opportunity. Finally, households without a motor vehicle will likely receive the greatest benefit, as improved safety and connectivity along Broadway will enhance multimodal transportation options and recreational opportunities close to home, allowing for these residents to access the trail network and transit system without a personal vehicle.

5. How will this project move the region toward achieving the shared [regional transportation outcomes](#) established in [Metro Vision](#)?

- Improve the diversity and livability of communities. With the installation of an underpass at this location, residents would be able to cross South Broadway with much less worry and anxiety, to access all the amenities across the barrier that is South Broadway and enhance the recreation on the High Line Canal Trail.

- Contain urban development in locations designated for urban growth and services. The area surrounding this location is largely built out, so it would appear that major growth could be limited. However, removing a mobility barrier would allow the bike and pedestrian parts of the community to grow and flourish.
- Increase housing and employment in urban centers. The closest urban center to this location is over 1 mile east along Arapahoe Rd.
- Improve and expand the region's multimodal transportation system, services, and connections. This project aims squarely at expanding the bicycle and pedestrian accessibility within the subregion by removing the nearly insurmountable barrier of crossing South Broadway on the High Line Canal Trail. Additionally, with non-vehicular traffic separated from the roadway, the possibility of crashes and slow-downs involving bikes or pedestrian drops significantly.
- Operate, manage, and maintain a safe and reliable transportation system. With the installation of an underpass, this project aims to promote safe and efficient travel for many years.
- Improve air quality and reduce greenhouse gas emissions. Crossing South Broadway can be a challenge for a pedestrian or bicyclist to navigate. The high volume of vehicles per day along the roadway is a significant barrier to non-vehicular travel. The roadway in this location is primarily geared for vehicular traffic conveyance, however, by removing Broadway as a barrier, more individuals will be able to walk or ride a bicycle to work/play/school thus removing vehicle trips and reducing greenhouse gas emissions.
- Connect people to natural resource and recreational areas. Removing the mobility barrier that is South Broadway would connect residents and amenities in Centennial to residents and amenities in Littleton, including parks, open spaces, and schools. This project would also enhance the recreation on the High Line Canal Trail by allowing user to connect between communities and take advantage of this recreational and ecological amenity.
- Reduce the risk of hazards and their impact. Separating motorized vehicles from non-motorized drastically reduces the level of potential hazard. The risk to pedestrians and other trail uses is far less than when attempting to cross the street.
- Increase access to amenities that support healthy, active choices. This project would not add distance to the High Line Canal Trail's 71 miles, but it would increase the safety of moving from one section to the next in this area, while making this crossing a much more convenient and enticing location. This is already one of the best used sections of the High Line Canal Trail but significantly lower user counts crossing at South Broadway demonstrate the potential to increase use of the Trail, catalyzing healthy, and active living. Additionally, as comfortability increases so does anxiety decrease, allowing for a broader range of users to utilize the Trail.
- Improve transportation connections to health care facilities and service providers. na
- Diversify the region's housing stock. On both sides of Broadway are commercial establishments and high-density housing. Removing the mobility barrier would better allow residents in the area to access amenities including schools and other residents in the area.
- Improve access to opportunity. Removing mobility barriers would allow residents of the area, and passers through, to access more than current conditions with Broadway acting as a barrier. Improving safety of this active transportation corridor is particularly important to provide access to opportunity for those without a vehicle.
- Improve the region's competitive position. Broadway is a significant barrier to moving between Littleton and Centennial in this location. Installation of an underpass would allow better movement between the two communities, making living in the area more desirable. The High Line Canal Trail is also one of the most unique and enticing recreational amenities the region has to offer. Supporting connectivity and safety along the Trail will only further enhance the asset and make it a greater draw.

6. Describe how the project will improve access to and/or connectivity between DRCOG-defined urban centers, multimodal corridors, mixed-use areas, Transit Oriented Development (transit near high-density development), or locally defined priority growth areas. Items marked with an asterisk (*) below are available in the TIP Data Tool.

- Is there a DRCOG designated urban center within ½ mile of the project limits?*
- Yes No If yes, please provide the name:
- Does the project connect two or more urban centers?*
- Yes No If yes, please provide the names:
- Is there a transit stop or station within ½ mile of the project limits?*
- Bus stop: Yes No If yes, how many? 21
- Rail station: Yes No If yes, how many?
- Is the project in a locally-defined priority growth and development area?
- Yes No
- If yes, provide a link to the relevant planning document:
- If yes, provide how the area is defined in the relevant planning document:
- Is the project in an area with zoning that supports compact, mixed-use development patterns and a variety of housing options?
- Yes No If yes, please provide the zoning district designation(s):

Provide households and employment data*	2020	2050
Households within ½ mile	8,570	9,150
Jobs within ½ mile	558	1,008
Household density (per acre) within ½ mile	3.21	3.42
Job density (per acre) within ½ mile	2.09	3.77

Describe how this project will improve access to and/or connectivity between the above identified areas, including the required quantitative analysis:

There are over 8,000 households within ½ mile of the project area and over 550 jobs. Household density is 3.21 and job density is 2.09 within ½ mile of the project site. Constructing an underpass along the High Line Canal at Broadway would eliminate a barrier for citizens who desire to use alternate modes of transportation to get to and from work.

Euclid Middle School is just northwest of the project. There is a large section of Littleton east of South Broadway from Arapahoe Road to Belleview Avenue that attends the middle school and South Broadway acts as a barrier for those communities. The construction of an underpass at Broadway and Arapahoe would allow middle school children to safely cross South Broadway on their way to school. Heritage High School also has a large boundary area to the east of South Broadway that could utilize the underpass to safely cross South Broadway on the way to school. In addition, the High Line Condos are bordered by the High Line Canal and South Broadway to the west. Construction of an underpass at South Broadway would allow citizens to safely access parks, shopping, or a low stress bike ride or walk along the High Line Canal to the west.

The High Line Canal is itself a significant recreational amenity drawing over 1 million users annually. This project would improve connectivity and accessibility of the High Line Canal and allow for trail users to connect to several recreation facilities along its reach, including Writers' Vista Park and Horseshoe Park in Littleton as well as Milliken Park and deKoevend Park in Centennial. By providing a safe, grade-separated crossing on the Canal trail, this project will remove a significant barrier to connectivity in this area and allow for more users to utilize the Trail as a connection across the region

7. Describe how this project will improve **access** and **connections** to key employment centers or regional destinations, including health services; commerce, educational, cultural, and recreational opportunities; or other important community resources. In your answer, define the key destination(s) and clearly explain how the project improves **access** and/or **connectivity**.

The High Line Canal is an experience like no other in the Denver region. The Canal winds its way with the region's topography revealing to its users views, encounters, and experiences that make you forget you are in the city. The Plan for the High Line Canal (2019) serves as a pathway to revitalize and transition the Canal into a regional greenway. The Plan recommends specific locations for underpass crossings including the location at South Broadway. Not all users currently enjoy equal access to a quality green space and outdoor activities. The Plan promotes a safe and continuous 71-mile greenway for all people and communities. An underpass at South Broadway for High Line Canal users is another step toward making The Plan a reality.

B. MVRTP Priorities

WEIGHT

50%

- **Qualitative and quantitative** responses are **REQUIRED** for the following items on how the proposed project contributes to the project and program investment priorities in the adopted 2050 Metro Vision Regional Transportation Plan. To be considered for full points, you must fully answer all parts of the question, including incorporating quantitative data into your answer. (see scoring section for details). Quantitative data from DRCOG is available [here](#).
- Checkboxes and data tables help to provide context and guide responses, but do not account for the full range of potential improvements and are not directly scored, but are required to be completed.
- Not all proposed projects will necessarily be able to answer all questions, however it is in the applicant's interest to address as many priority areas as possible.

Multimodal Mobility

Provide improved travel options for all modes.

(drawn from [2050 MVRTP priorities](#); [federal travel time reliability, infrastructure condition, & transit asset management performance measures](#); & [Metro Vision objective 4](#))

Examples of Project Elements: combinations of improvements that support options for a broad range of users, such as complete streets improvements, or a bicycle/pedestrian access to transit, etc.

How does this project help increase mobility choices for people, goods, and/or services? Note that any roadway operational improvements must be on the DRCOG [Regional Roadway System](#) and/or [Regional Managed Lanes System](#).

- What modes will project improvements directly address?
 Walking Bicycling Transit Roadway Operations Other:
- List the elements of this project which will address the above modes (i.e., sidewalk, shared use path, bus stop improvements, signal interconnection, etc.): [New underpass for High Line Canal Trail to cross Broadway, and new ramps from High Line Canal Trail to existing Broadway sidewalks](#)
- Will the completed project be a complete street as described in the [Regional Complete Streets Toolkit](#)? This data is available in the TIP Data Tool.
 Yes No If yes, describe how it implements the Toolkit's strategies in your response.
- Does this project improve travel time reliability?
 Yes No
- Does this project improve asset management of active transportation facilities and/or transit vehicle fleets?
 Yes No
- Does this project implement resilient infrastructure that helps the region mitigate natural and/or human-made hazards?
 Yes No

Describe how this project increases mobility choices for all users, *include quantitative information, including any items referenced above, in your response:*

The proposed project will improve the trail crossing of High Line Canal Trail at Broadway for pedestrians and bicyclists traveling east-west on the trail. The project also provides access to existing sidewalks along Broadway for bicyclists and pedestrians on both sides of the road, creating a safe and comfortable way for users to continue north and south on Broadway. Trail user counts from the High Line Canal Trail suggest that fewer than 1/3 of the users who utilize the trail in Littleton and fewer than 1/4 of users who utilize the trail in Centennial pass through the Broadway corridor. With significant demand on either side of Broadway, a grade separated crossing bridges the gap between these neighboring communities.

The High Line Canal Trail underpass at Broadway will implement the Regional Complete Streets Toolkit with strategies consistent with the Regional Connector Street. The improved bicycle and pedestrian connections will enhance overall mobility across and along Broadway, increasing travel mode opportunities for residents to access and use various transportation alternatives, as well as access the regional trail system in the area with improved comfort and safety.

Air Quality

Improve air quality and reduce greenhouse gas emissions.

(drawn from [2050 MVRTD priorities](#); [state greenhouse gas rulemaking](#); [federal congestion & emissions reduction performance measures](#); [Metro Vision objectives 2, 3, & 6a](#))

Examples of Project Elements: active transportation, transit, or TDM elements; vehicle operational improvements; electric vehicle supportive infrastructure; etc.

How does this project help reduce congestion and air pollutants, including but not limited to, carbon monoxide, ground-level ozone precursors, particulate matter, and greenhouse gas emissions?

- Does this project reduce congestion?
 Yes No
- Does this project reduce vehicle miles traveled (VMT)?
 Yes No
- Does this project reduce single-occupant vehicle (SOV) travel?
 Yes No

Emissions Reduced (kg/day)	CO	NOx	VOCs	PM 10
	0.09	0.01	0.01	0.001

Use the [FHWA CMAQ Calculators](#) or a similar reasonable methodology to determine emissions reduced. Base your calculations on the year of opening. Please attach a screenshot of your work (such as the FHWA calculator showing the inputs and outputs) as part of your submittal packet.

Note: if not using the FHWA Calculators, please note your methodology in your narrative below.

Describe how this project reduces air pollutants, include quantitative information, including any items referenced above, in your response:

The proposed project will improve the trail crossing of High Line Canal Trail at Broadway and eliminate a crossing challenge for trail users. The new underpass will strengthen access to the Trail and provide enhanced connectivity to neighborhoods, schools, parks and open space, restaurants, retail shopping, and the Broadway/Lincoln BRT system. These improved connections will promote multimodal travel options and will reduce VMT and SOV on Broadway, Arapahoe Rd, and the surrounding neighborhood streets.

To estimate reduction in vehicle trips due to this project (and hence measure air quality implications), the project team applied a methodology created by the California Air Resources Board (ABR) and modified by The Trust for Public Land's Climate-Smart Cities Program. This methodology looks at number of days per year the facility will be utilized, annual average daily traffic, location near a university area, and number of activity centers within a half or quarter mile of the project. The resulting estimate is a reduction of 224 daily vehicle trips after implementation of the proposed project.

Crossing Broadway St can be a challenge for a pedestrian or bicyclist to navigate, the high volume of vehicles per day along the roadway is a significant barrier to non-vehicular travel. The roadway in this location is primarily geared for vehicular traffic conveyance, however, by removing Broadway as a barrier, more individuals will be able to walk or ride a bicycle to work/play/school thus removing vehicle trips and reducing greenhouse gas emissions

**Regional
Transit**

Expand and improve the region’s transit network.

(drawn from [2050 MVRTP priorities](#), [Coordinated Transit Plan](#), [RTD’s Regional Bus Rapid Transit Feasibility Study](#))

Examples of Project Elements: transit lanes, station improvements, new/expanded service, etc.

Note: For any project with transit elements, the sponsor must coordinate with RTD to ensure RTD agrees to the scope and cost. Be sure to include RTD’s concurrence in your application submittal.

How does this project improve connections to or expand the region’s transit system, as outlined in the [2050 MVRTP](#)? Note that rapid transit improvements must be on the [Regional Rapid Transit System](#). Items marked with an asterisk (*) below are available in the TIP Data Tool.

- Does this project implement a portion of the [regional bus rapid transit \(BRT\) network](#)?*
 Yes No If yes, which specific corridor will this project focus on?
- Does this project involve a [regional transit planning corridor](#)?*
 Yes No If yes, which specific corridor will this project focus on? **Broadway/Lincoln BRT**
- Does this project implement a mobility hub as defined in the [2050 MVRTP](#)?
 Yes No
- Does this project improve connections between transit and other modes?
 Yes No If yes, please describe in your response.
- Is this project adding new or expanded transit service?
 Yes No If yes, who will operate the service?
- Does this project add and/or improve transit service to or within a DRCOG-defined urban center?*
 Yes No If yes, provide the name of the urban center:

Describe how this project improves connections to or expands the region’s transit system, *include quantitative information, including any items referenced above, in your response:*

Broadway has been identified by DRCOG as a part of the regional bus rapid transit (BRT) network. The proposed project provides a safer way for pedestrians and bicyclists to access RTD’s Bus Route 0, which serves Broadway between downtown Denver and Highlands Ranch. Additional nearby bus service is provided along Arapahoe Rd by RTD’s Route 66, which extends between Broadway and Interstate 25.

Pre-covid service for Route 0 on Broadway provided weekday peak period frequencies as short as 7.5 minutes up to 30 minutes. Weekday non-peak period frequencies ranged from 10 to 30 minutes. Average weekday boardings from 2017 data were 9,420.

Safety **Increase the safety for all users of the transportation system.**
 (drawn from [2050 MVRTP priorities](#), [Taking Action on Regional Vision Zero](#), [CDOT Strategic Transportation Safety Plan](#), & [federal safety performance measures](#))
 Examples of Project Elements: bike/pedestrian crossing improvements, vehicle crash countermeasures, traffic calming, etc.

How does this project implement safety improvements (roadway, active transportation facility, etc.), particularly improvements in line with the recommendations in [Taking Action on Regional Vision Zero](#)? Note that any improvements on roadways must be on the DRCOG [Regional Roadway System](#). Items marked with an asterisk (*) below are available in the TIP Data Tool.

- Does this project address a location on the [DRCOG High-Injury Network or Critical Corridors](#) or corridors defined in a local Vision Zero or equivalent safety plan?*
 Yes No
- Does this project implement a safety countermeasure listed in the [countermeasure glossary](#)?
 Yes No

Provide the current number of crashes involving motor vehicles, bicyclists, and pedestrians* <i>(using the 2015-2019 period – in the TIP Data Tool, use a 0.02 mile buffer of your project)</i> <i>NOTE: if constructing a new facility, report crashes along closest existing alternative route</i>		Sponsor must use industry accepted crash reduction factors (CRF) or accident modification factor (AMF) practices (e.g., NCHRP Project 17-25, NCHRP Report 617, or DiExSys methodology).
Fatal crashes	0	
Serious Injury crashes	1	
Other Injury crashes	11	
Property Damage Only crashes	42	
Estimated reduction in crashes <u>applicable to the project scope</u> <i>(per the five-year period used above)</i>		Provide the methodology below:
Fatal crashes reduced	0.00	CRF=100 (Gan et. al., 2005). The proposed underpass would eliminate all crashes at the Broadway crossing.
Serious Injury crashes reduced	1.00	
Other Injury crashes reduced	11.00	
Property Damage Only crashes reduced	42.00	

Describe how this project will improve safety, *include quantitative information, including any items referenced above, in your response:*

The proposed project improves safety for pedestrians and bicyclists at the High Line Canal Trail crossing of Broadway, which is included in the DRCOG High-Injury Network. The proposed Trail underpass is not specifically listed on the DRCOG Taking Action on Regional Vision Zero, but would remove the risk of crossing Broadway at-grade and without signals or a marked crossing. Creating the grade separated crossing across Broadway and ramps on both sides of the trail to access existing sidewalks on Broadway creates a safer transportation system by reducing the risk of vehicle collision while crossing a high volume road.

The statistics in this section were generate using the 0.02-mile radius, per the TIP Data Tool suggestion. However, due to the proximity of the trail crossing to the intersection, the intersection and trail crossing were combined and considered a single location.

Freight

Maintain efficient movement of goods within and beyond the region.

(drawn from [2050 MVRTP priorities](#); [Regional Multimodal Freight Plan](#); [Colorado Freight Plan](#), [federal freight reliability performance measure](#); [Metro Vision objective 14](#))

Examples of Project Elements: roadway operational improvements, etc.

How does this project improve the efficient movement of goods, specifically improvements identified in the [Regional Multimodal Freight Plan](#)? Note that any improvements on roadways must be on the DRCOG [Regional Roadway System](#). Items marked with an asterisk (*) below are available in the TIP Data Tool.

- Is this project located in or impact access to a [Freight Focus Area](#)?*
 Yes No If yes, please provide the name:
- Is the project located on the [Tier 1 or Tier 2 Regional Highway Freight Vision Network](#)?*
 Yes No
- If this project is located in a [Freight Focus Area](#) does it address the relevant Needs and Issues identified in the Plan (see text located within each Focus Area)?
 Yes No If yes, please describe in your response.
- Check any items from the [Inventory of Current Needs](#) which this project will address:
 Truck Crash Location Rail Crossing Safety ([eligible locations](#))
 Truck Delay Truck Reliability
Please provide the location(s) being addressed:
- Does this project include any innovative or non-traditional freight supportive elements (i.e., curb management strategies, cargo bike supportive infrastructure, etc.)?
 Yes No If yes, please describe in your response.

Describe how this project will improve the movement of goods, *include quantitative information, including any items referenced above, in your response:*

The proposed project is located on Broadway, which is on the Tier 2 Regional Highway Freight Vision Network. The project elements would reduce or eliminate pedestrian/bicyclist crossing conflicts with freight vehicles which results in significant safety, schedule, and cost savings.

Active Transportation

Expand and enhance active transportation travel options.

(drawn from [2050 MVRTP priorities](#); [Denver Regional Active Transportation Plan](#); & [Metro Vision objectives 10 & 13](#))

Examples of Project Elements: shared use paths, sidewalks, regional trails, grade separations, etc.

How does this project help expand the active transportation network, close gaps, improve comfort, and/or improve connections to key destinations, particularly improvements in line with the recommendations in the [Denver Regional Active Transportation Plan](#)? Items marked with an asterisk (*) below are available in the TIP Data Tool.

- Does this project close a gap or extend a facility on a [Regional Active Transportation Corridor](#) or locally-defined priority corridor?*
 Yes No
- Does this project improve pedestrian accessibility and connectivity in a [pedestrian focus area](#)?*
 Yes No
- Does this project improve active transportation choices in a [short trip opportunity zone](#)?*
 Yes No
- Does this project include a high-comfort bikeway (like a sidepath, shared-use path, separated bike lane, bicycle boulevard)?
 Yes No If yes, please describe in your response.

Bicycle Use

NOTE: if constructing a new facility, report bike usage along closest existing alternative route

1. Current Average Single Weekday Bicyclists:	63	
Bicycle Use Calculations	Year of Opening	2050 Weekday Estimate
2. Enter estimated additional average weekday one-way bicycle trips on the facility after project is completed.	39	51
3. Enter number of the bicycle trips (in #2 above) that will be diverting from a different bicycling route. (Example: {#2 X 50%} or other percent, if justified on line 10 below)	19	25
4. = Initial number of new bicycle trips from project (#2 – #3)	20	26
1. Enter number of the new trips produced (from #4 above) that are replacing a trip made by another non-SOV mode (bus, carpool, vanpool, bike, etc.). (Example: {#4 X 30%} or other percent, if justified on line 10 below)	6.00	7.80
5. = Number of SOV trips reduced per day (#4 - #5)	14.00	18.20
6. Enter the value of {#6 x 2 miles} . (= the VMT reduced per day) (Values other than 2 miles must be justified by sponsor on line 10 below)	28.00	36.40
7. = Number of pounds GHG emissions reduced (#7 x 0.95 lbs.)	26.60	34.58
8. If values would be distinctly greater for weekends, describe the magnitude of difference: Comparing weekday to weekend volumes, the bicycle weekend volume is approximately 17% higher than the average daily volume used above.		
9. If different values other than the suggested are used, please explain here:		

Pedestrian Use

NOTE: if constructing a new facility, report pedestrian usage along closest existing alternative route

2. Current Average Single Weekday Pedestrians (including users of non-pedaled devices such as scooters and wheelchairs):	40	
Pedestrian Use Calculations	Year of Opening	2050 Weekday Estimate
3. Enter estimated additional average weekday pedestrian one-way trips on the facility after project is completed	24	32
4. Enter number of the new pedestrian trips (in #2 above) that will be diverting from a different walking route (Example: {#2 X 50%} or other percent, if justified on line 10 below)	12	16
5. = Number of new trips from project (#2 – #3)	12	16
6. Enter number of the new trips produced (from #4 above) that are replacing a trip made by another non-SOV mode (bus, carpool, vanpool, bike, etc.). (Example: {#4 X 30%} or other percent, if justified on line 10 below)	3.60	4.80
7. = Number of SOV trips reduced per day (#4 - #5)	8.40	11.20

8. Enter the value of {#6 x .4 miles}. (= the VMT reduced per day) (Values other than .4 miles must be justified by sponsor on line 10 below)	3.36	4.48
9. = Number of pounds GHG emissions reduced (#7 x 0.95 lbs.)	3.19	4.26
10. If values would be distinctly greater for weekends, describe the magnitude of difference: Comparing weekday to weekend volumes, the pedestrian weekend volume is approximately 15% higher than the average daily volume used above.		
11. If different values other than the suggested are used, please explain here:		

Describe how this project will expand the active transportation network, close gaps, improve comfort, and/or improve connections to key destinations, *include quantitative information, including any items referenced above, in your response:*

The High Line Canal Trail links major activity centers throughout the Denver Metropolitan area. The proposed project will provide safer, more comfortable, and more efficient alternative transportation opportunities for users to recreate on the trail, commute to work, connect to the BRT network, and use the trail to access major recreation amenities and economic centers. The project improvements will increase mobility choices and encourage trail users to use non-motorized transportation to access destinations by walking, cycling, and using transit.

The installation of an underpass in this location would also likely reduce the number of short trips generated per day. There are two high schools on the west side of Broadway whose school boundaries extend east of Broadway. Students could use the underpass to walk or bike to school instead of being driven. This change of transportation would also contribute to lower GHG emissions.

C. Project Leveraging	WEIGHT	10%
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<p>What percent of outside funding sources (non-Subregional Share funding) does this project have? <i>(number will automatically calculate based on values entered in the Funding Request table)</i></p>	20.17%	<table style="width: 100%; border-collapse: collapse;"> <tr><td>60%+ outside funding sources</td><td>5 pts</td></tr> <tr><td>50-59.9%</td><td>4 pts</td></tr> <tr><td>40-49.9%</td><td>3 pts</td></tr> <tr><td>20-39.9%</td><td>2 pts</td></tr> <tr><td>10.1-19.9%</td><td>1 pt</td></tr> <tr><td>10%.....</td><td>0 pts</td></tr> </table>	60%+ outside funding sources	5 pts	50-59.9%	4 pts	40-49.9%	3 pts	20-39.9%	2 pts	10.1-19.9%	1 pt	10%.....	0 pts
60%+ outside funding sources	5 pts													
50-59.9%	4 pts													
40-49.9%	3 pts													
20-39.9%	2 pts													
10.1-19.9%	1 pt													
10%.....	0 pts													

D. Project Readiness	WEIGHT	10%
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Provide responses to the following items to demonstrate the readiness of the project. DRCOG is prioritizing those projects that have a higher likelihood to move forward in a timely manner and are less likely to experience a delay.

Section 1. Avoiding Pitfalls and Roadblocks

a. Has a licensed engineer (CDOT, consultant, local agency, etc.) reviewed the impact the proposed project will have on utilities, railroads, ROW, historic and environmental resources, etc. and have those impacts and pitfalls been mitigated as much as possible to date before this submittal?
 Yes No N/A (for projects which do not require engineering services)

If yes, please type in the engineer’s name below which certifies their review and that impacts have been evaluated and mitigated as much as possible before your application is submitted:

Cody Keraga, PE, David Evans and Associates, Inc.

Please describe the status to date on each, including 1) anticipated/known pitfalls/roadblocks, and 2) mitigation activities taken to date:

- **Utilities:** Performed Subsurface Utility Engineering (SUE) Investigation to quality Level B (QLB) requirements. Reviewed utility conflicts and followed up with SUE QLA test holes to verify conflicts with preliminary design. Identified conflicts, relocation strategies, and discussed with utility owners based on preliminary design.
- **Railroad:** None in this location
- **Right-of-Way:** Identified right of way impacts based on preliminary design, performed review of impacts and mitigation alternatives, but could not avoid. Identified potential cost and schedule to obtain temporary easements. No permanent impacts.
- **Environmental/Historic:** Performed initial site review for environmental. Additional historic resources coordination will be occur during final design as the High Line Canal is historic and mitigation will be required.
- **Other:** Design. The consultant team has progressed the design for this project to the ~30% design level.

b. Is this application for a single project phase only (i.e., design, environmental, ROW acquisition, construction only, study, bus service, equipment purchase, etc.)?
 Yes No

If yes, are the other prerequisite phases complete? Yes No N/A

If this project is for construction, please note the NEPA status: *In Progress*

c. Has all required ROW been identified? Yes No N/A
 Has all required ROW already been acquired and cleared by CDOT? Yes No N/A

d. Based on the current status provided in Project Information, question 11, do you foresee being able to execute your IGA by October 1 of your first year of funding (or if requesting first year funding, beginning discussions on your IGA as soon as possible), so you can begin your project on time?

Yes No

Does your agency have the appropriate staff available to work on this project? Yes No

If yes, are they knowledgeable with the federal-aid process? Yes No

e. Have other stakeholders in your project been identified and involved in project development?

Yes No N/A

If yes, who are the stakeholders? [Staff from the City of Littleton and City of Centennial](#)

Please provide any additional details on any of the items in Section 1, if applicable.

[The PM team consisted of staff from Arapahoe County, the High Line Conservancy, and the County's consultant \(David Evans and Associates\). The PM also collaborated with the stakeholders identified in part e above, as well as staff from SEMSWA, South Suburban Parks and Rec, and Denver Water to advance the project to the current state of design.](#)

Section 2. Local Match

a. Is all the local match identified in your application currently available, and if a partnering agency is also committing match, do you have a commitment letter?

Yes No

Please describe:

[The City of Littleton and City of Centennial have both provided Letters of Support for this project and committed to providing the requested local match.](#)

b. Is all funding for this project currently identified in the sponsor agency's Capital Improvement Program (CIP)?

Yes No

Please describe:

[Arapahoe County received approval from the Open Spaces Technical Advisory Board and the Board of County Commissioners to proceed with the applicaiotn for this project. Local match funding will be available if the project is awarded funding. The City of Littleton and the City of Centennial have both agreed to fund the local match if the project is awarded funding.](#)

Section 3. Public Support

a. Has the proposed project previously been through a public review process (public comment period, public hearing, etc.)?

Yes No

b. Has the public had access to translated project materials in relevant languages for the local community?

Yes No

Please describe:

[The Plan for the High Line Canal \(2019\) had extensive public involvement including: held 4 community open houses with over 600 attendees, 14 stakeholder meetings with various communities and youth groups, 6 focus group meetings with 57 community leaders, 362 in-person surveys along the Canal, 6 BioBlitzes, inaugural "Dine for the High Line Canal", and Dogs & Donuts Events. One key takeaway from the community engagement was that improved crossings and closing trail gaps is a top priority for all users. 96% of respondents requested improved crossings along the Canal with underpasses being the preferred crossing treatment at busy roads.](#)

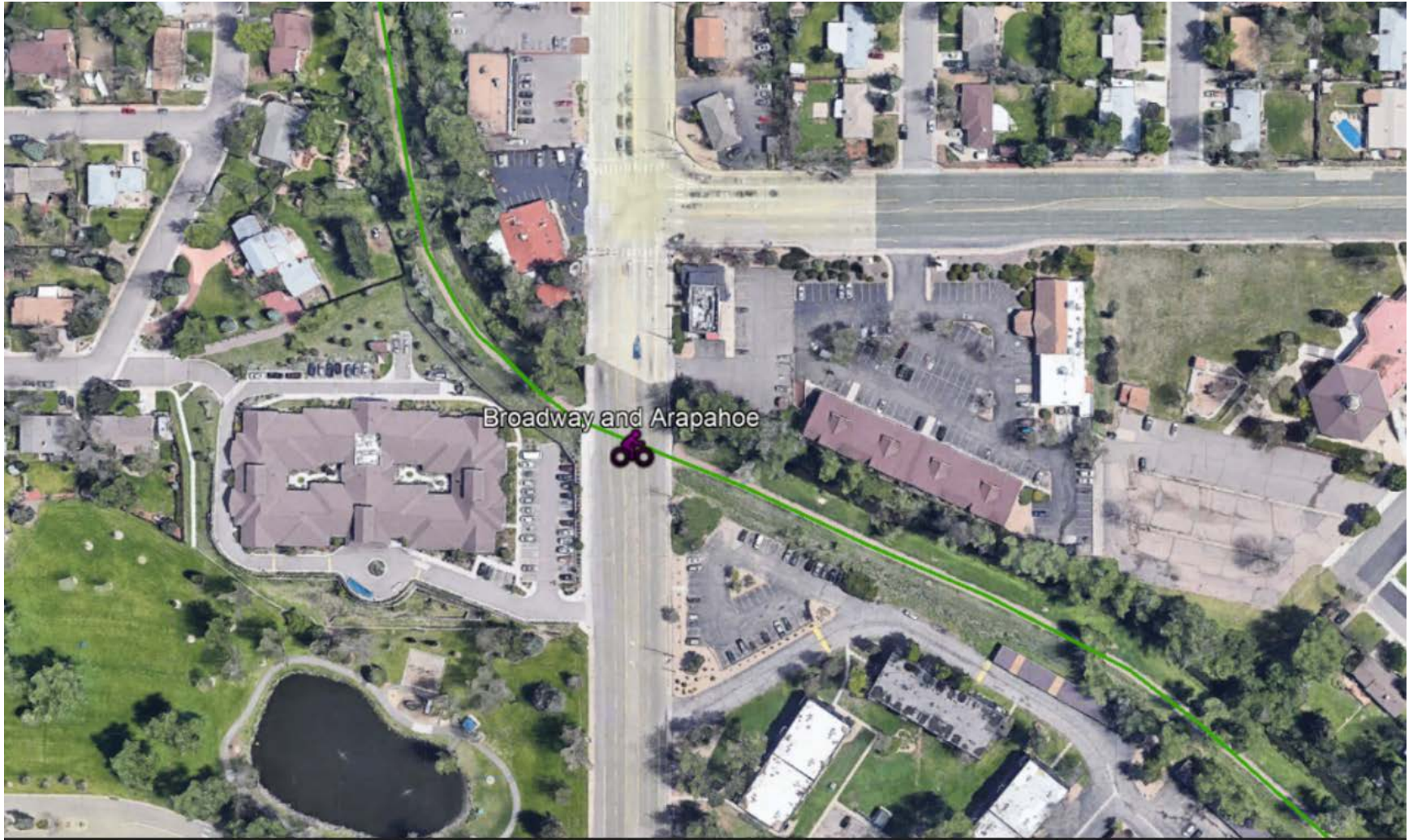
c. Have any adjacent property owners to the proposed project been contacted and provided with the initial project concept?

Yes No N/A

Please provide any additional details on the items in Section 3, if applicable.

[Adjacent property owners were contacted for permission for survey crews to preform topographic maps, etc for the purposes of preliminary design for this project, but no preliminary designs have been circulated to the property owners or residents in the area.](#)

Submit completed applications through the [TIP Data Hub](#) no later than 3pm on June 24, 2022.



BROADWAY & ARAPAHOE UNDERPASS

**ARAPAHOE COUNTY
ENGINEER'S OPINION OF PROBABLE COST
FIR ESTIMATE - April 28, 2022**

DEA Project No. ARPC0000-0015





Project Name	High Line Canal Trail Underpasses - Broadway & Arapahoe	County Project Number	Date: 04/28/22	
County of	Arapahoe	C21-019	Length (Ft) 1,000	Length (Mi) 0.19
Type	Trail Underpass; Design-Bid-Build			
Prepared by	Alfred Benesch & Company	Pavement Depths (in):	Trail: 6	Shoulders: 6

In providing opinions of probable construction cost, the Client understands that Alfred Benesch & Company has no control over costs or the price of labor, equipment or materials, or over the Contractor's method of pricing, and that the opinions of probable construction costs provided herein are to be made on the basis of our qualifications and experience. These costs do not reflect escalation for future costs. Benesch makes no warranty, expressed or implied, as to the accuracy of such opinions as compared to bid or actual costs.

MAJOR BASE BID ITEMS

Item No.	Item Description	Unit	Quantity	Unit Cost	Total Cost	Notes
201-00000	Clearing and Grubbing	LS	1	\$ 20,000.00	\$ 20,000	
202-00200	Removal of Sidewalk	SY	116	\$ 30.00	\$ 3,480	
202-00203	Removal of Curb and Gutter	LF	157	\$ 15.00	\$ 2,355	
202-00220	Removal of Asphalt Mat	SY	1001	\$ 8.00	\$ 8,008	
202-00240	Removal of Asphalt Mat (Planning)	SY	377	\$ 135.00	\$ 50,895	
202-00810	Removal of Ground Sign	EACH	2	\$ 135.00	\$ 270	
202-01130	Removal of Guardrail Type 3	LF	14	\$ 6.00	\$ 84	
203-00000	Unclassified Excavation (Complete In Place)	CY	46700	\$ 22.00	\$ 1,027,400	
203-00100	Muck Excavation	CY	40	\$ 75.00	\$ 3,000	
203-00400	Rock Excavation	CY	500	\$ 100.00	\$ 50,000	
203-01100	Proofrolling	HOUR	40	\$ 140.00	\$ 5,600	
203-01597	Potholing	HOUR	30	\$ 300.00	\$ 9,000	
206-00000	Structure Excavation	CY	15190	\$ 30.00	\$ 455,700	
206-00050	Structure Backfill (Special)	CY	290	\$ 85.00	\$ 24,650	
206-00100	Structure Backfill (Class 1)	CY	5500	\$ 45.00	\$ 247,500	
206-00200	Structure Backfill (Class 2)	CY	60	\$ 30.00	\$ 1,800	
206-01001	Bed Course Material (Special)	CY	60	\$ 100.00	\$ 6,000	Soldier piling/ 20' excavation height
206-01750	Shoring	LS	1	\$ 400,000.00	\$ 400,000	
208-00004	Reinforced Rock Berm	LF	540	\$ 20.00	\$ 10,800	
208-00008	Sediment Control Log	LF	1800	\$ 10.00	\$ 18,000	
208-00045	Concrete Washout Structure	EACH	1	\$ 3,500.00	\$ 3,500	
208-00051	Inlet Protection	EACH	3	\$ 15.00	\$ 45	
208-00070	Vehicle Tracking Pad	EACH	2	\$ 4,100.00	\$ 8,200	
208-00207	Erosion Control Management	DAY	30	\$ 365.00	\$ 10,950	
216-00022	Erosion Control Blanket	SY	690	\$ 4.00	\$ 2,760	
240-00000	Wildlife Biologist	HOUR	40	\$ 140.00	\$ 5,600	
240-00010	Removal of Nests	HOUR	40	\$ 150.00	\$ 6,000	
250-00010	Environmental Health and Safety Management	LS	1	\$ 15,000.00	\$ 15,000	
250-00110	Health and Safety Officer	HOUR	40	\$ 150.00	\$ 6,000	
250-00120	Material Sampling and Delivery	EACH	4	\$ 950.00	\$ 3,800	
304-06007	Aggregate Base Course (Class 6)	CY	615	\$ 30.00	\$ 18,450	
304-09006	Aggregate Base Course (Special)	SY	200	\$ 40.00	\$ 8,000	
403-00721	Hot Mix Asphalt (Patching) (Asphalt)	SY	11	\$ 250.00	\$ 2,750	
403-34841	Hot Mix Asphalt (Grading X) (XX) (PG XX-XX)	TON	727	\$ 100.00	\$ 72,700	
514-00100	Hand Rail	LF	826	\$ 200.00	\$ 165,200	
601-03050	Concrete Class D (Wall)	CY	1170	\$ 800.00	\$ 936,000	
601-40302	Structural Concrete Coating (Anti-Graffiti)	SF	3080	\$ 3.00	\$ 9,240	
601-40401	Structural Concrete Stain	SF	12890	\$ 16.00	\$ 206,240	
602-00020	Reinforcing Steel (Epoxy Coated)	LB	167245	\$ 2.00	\$ 334,490	
603-01180	18 Inch Reinforced Concrete Pipe	LF	576	\$ 130.00	\$ 74,880	
603-71612	16x12 Foot Concrete Box Culvert (Precast)	LF	128	\$ 4,000.00	\$ 512,000	
604-13005	Inlet Type 13 (5 Foot)	EACH	2	\$ 4,500.00	\$ 9,000	
604-30010	Manhole Box Base (10 Foot)	EACH	2	\$ 8,500.00	\$ 17,000	
604-30015	Manhole Box Base (15 Foot)	EACH	1	\$ 8,500.00	\$ 8,500	
607-11525	Fence (Plastic)	LF	1870	\$ 4.00	\$ 7,480	
608-00005	Concrete Sidewalk (Special)	SY	467	\$ 80.00	\$ 37,360	
608-00006	Concrete Sidewalk (6 Inch)	SY	111	\$ 60.00	\$ 6,660	
608-00026	Concrete Bikeway (6 Inch)	SY	2404	\$ 75.00	\$ 180,300	
609-21020	Curb and Gutter Type 2 (Section II-B)	LF	168	\$ 40.00	\$ 6,720	
609-24002	Gutter Type 2 (2 Foot)	LF	983	\$ 50.00	\$ 49,150	
620-00001	Field Office (Class 1)	EACH	1	\$ 10,000.00	\$ 10,000	
620-00020	Sanitary Facility	EACH	1	\$ 3,500.00	\$ 3,500	
625-00000	Construction Surveying	EACH	1	\$ 15,000.00	\$ 15,000	
625-00001	Construction Surveying (Hourly)	HOUR	40	\$ 200.00	\$ 8,000	
626-00000	Mobilization	LS	1	\$ 400,000.00	\$ 400,000	
626-01113	Public Information Management (Tier III)	DAYS	120	\$ 140.00	\$ 16,800	Assumed 120 working days
630-00003	Uniformed Traffic Control	HOUR	150	\$ 100.00	\$ 15,000	
630-00007	Traffic Control Inspection	DAY	60	\$ 265.00	\$ 15,900	
630-00012	Traffic Control Management	DAY	120	\$ 1,000.00	\$ 120,000	
630-80001	Flashing Beacon (Portable)	EACH	4	\$ 1,000.00	\$ 4,000	
630-80335	Barricade (Type 3 M-A) (Temporary)	EACH	2	\$ 175.00	\$ 350	
630-80337	Barricade (Type 3 M-C) (Temporary)	EACH	2	\$ 100.00	\$ 200	
830-80341	Constructoin Traffic Sign (Panel Size A)	EACH	90	\$ 65.00	\$ 5,850	
830-80342	Constructoin Traffic Sign (Panel Size B)	EACH	10	\$ 90.00	\$ 900	
830-80343	Constructoin Traffic Sign (Panel Size C)	EACH	4	\$ 90.00	\$ 360	
830-80344	Constructoin Traffic Sign (Special)	EACH	2	\$ 50.00	\$ 100	
830-80355	Portable Message Sign Panel	EACH	4	\$ 7,000.00	\$ 28,000	
700-70010	F/A Minor Contract Revisions	FA	1	\$ 100,000.00	\$ 100,000	
700-70023	F/A On-The-Job Trainee	FA	1	\$ 10,000.00	\$ 10,000	
700-70082	F/A Furnish & Install Electrical Service	FA	1	\$ 15,000.00	\$ 15,000	

ARAPAHOE COUNTY				DEA Project No. ARPC0000-0015			
ENGINEER'S OPINION OF PROBABLE COST				 			
FIR ESTIMATE - April 28, 2022							
Project Name	High Line Canal Trail Underpasses - Broadway & Arapahoe			County Project Number	Date: 04/28/22		
County of	Arapahoe			C21-019	Length (Ft) 1,000	Length (Mi) 0.19	
Type	Trail Underpass; Design-Bid-Build						
Prepared by	Alfred Benesch & Company			Pavement Depths (in):	Trail: 6	Shoulders: 6	
<p>In providing opinions of probable construction cost, the Client understands that Alfred Benesch & Company has no control over costs or the price of labor, equipment or materials, or over the Contractor's method of pricing, and that the opinions of probable construction costs provided herein are to be made on the basis of our qualifications and experience. These costs do not reflect escalation for future costs. Benesch makes no warranty, expressed or implied, as to the accuracy of such opinions as compared to bid or actual costs.</p>							
700-70380	F/A Erosion Control	FA	1	\$ 10,000.00	\$	10,000	
700-70589	F/A Environmental Health & Safety Management	FA	1	\$ 15,000.00	\$	15,000	
Project Construction Major Base Bid Items Subtotal (A)				SUBTOTAL (A)	\$	5,769,777	
GENERAL PROJECT CONSTRUCTION/BID ITEMS							
Item No.	Item Description	% Range	% of (A)	Cost	Notes		
	General Project Bid Items	(1 - 10% of (A))	1%	\$ 57,698			
208 / 212	Erosion Control/SWMP	(2 - 5% of (A))	0%	\$ -			
214	Landscaping	(1 - 20% of (A))	1%	\$ 57,698			
240 / 250	Environmental Mitigation	(1 - 5% of (A))	0%	\$ -			
603 / 604	Additional Drainage	(4 - 15% of (A))	0%	\$ -			
613	Lighting	(1 - 5% of (A))	1%	\$ 57,698			
623	Irrigation	(1 - 2% of (A))	1%	\$ 57,698			
630	Signing and Striping	(1 - 5% of (A))	1%	\$ 57,698			
630	Construction Signing & Traffic Control	(2 - 20% of (A))	0%	\$ -	Assumes Full Closures		
	Mobilization	(4 - 20% of (A+Above))	0%	\$ -			
	Force Accounts	(5 - 10% of (A))	0%	\$ -			
General Project Construction/Bid Items Subtotal (B)				SUBTOTAL (B)	\$	288,489	
				SUBTOTAL - PROJECT CONSTRUCTION BID ITEMS (C) = (A) + (B)	\$	6,058,266	
UTILITY RELOCATIONS/COSTS							
Item No.	Utility Description	Unit	Quantity	Unit Cost	Cost	Notes	
XCEL-E-106	Xcel - Electric	LF	110	\$ 68	\$ 7,500	OH	
DWD-W-102	Denver Water - 12" Ductile Water	LF	300	\$ 400	\$ 120,000	UG	
DWD-W-101	Denver Water - Water	EA	1	\$ 11,000	\$ 11,000	UG	
ZAYO-FO-101	Zayo - Fiber	LF	220	\$ 45	\$ 10,000	UG	
LV3-FO-101	Level 3 - Fiber	LF	220	\$ 45	\$ 10,000	UG	
XCEL-G-107	Xcel - 4" Gas	LF	350	\$ 95	\$ 33,250	UG	
XCEL-G-108	Xcel - 6" Gas	LF	350	\$ 100	\$ 35,000	UG	
ATT-FO-101	ATT - Fiber	LF	700	\$ 29	\$ 20,000	UG	
MCI-FO-102	MCI - Fiber	LF	350	\$ 77	\$ 27,000	UG	
DWD-W-103	Denver Water - Water	LF	48	\$ 479	\$ 23,000	UG	
LUM-T-101/102	Lumen - Fiber Duct Bank	LS	1	\$ 250,000	\$ 250,000	UG	
Utility Relocations/Costs Subtotal (D)				SUBTOTAL (D)	\$	546,750	
RIGHT OF WAY/EASEMENTS							
Item No.	ROW/Easement Description	Unit	Quantity	Unit Cost	Cost	Notes	
	Temporary Construction Easement #1 (Denver Water)	SF	6,319	\$ 8.00	\$ 50,552	West Canal Impacts	
	Temporary Construction Easement #2 (Denver Water)	SF	10,085	\$ 8.00	\$ 80,680	East Canal Impacts	
	Permanent Easement #1 (Denver Water)	SF	152		\$ 152	Maintenance Easement for West Wall	
	Permanent Easement #2 (Denver Water)	SF	2,241		\$ 2,241	Maintenance Easement for East Wall	
Right of Way/Easement Subtotal (D)				SUBTOTAL (E)	\$	133,625	
				SUBTOTAL - BASE CONSTRUCTION COSTS (F) = (C) + (D) + (E)	\$	6,738,641	
CONSTRUCTION CONTINGENCIES							
Item No.	Contingency Description	% Range	% of (F)	Cost	Notes		
	Inflation Contingency	(2 - 5% per year)	17%	\$ 1,145,569	4% per year for 4 years == 17%		
	Miscellaneous Quantities and Unknown Contingency	(10 - 30% of (F))	15%	\$ 1,010,797			
Contingencies Subtotal (I)				SUBTOTAL (G)	\$	2,156,366	
				SUBTOTAL - TOTAL CONSTRUCTION COSTS (H) = (F) + (G)	\$	8,895,007	
DESIGN / ENGINEERING / PROGRAM COSTS							
Item No.	Engineering Description	% Range	% of (F)	Cost	Notes		
	Final Design Engineering	(8 - 12% of (F))	10%	\$ 673,865			
	Design Services during Construction	(3 - 6% of (F))	3%	\$ 202,160			
	Construction Engineering / Material Testing	(10 - 20% of (F))	10%	\$ 673,865			
	Engineering Contingency & Inflation	(5 - 30% of Cont. Items)	10%	\$ 154,989			
Design / Engineering / Program Costs Subtotal (J)				SUBTOTAL (J)	\$	1,704,879	
TOTAL PROJECT COST				TOTAL (K) = (H) + (J) =	\$	10,599,900	



ARAPAHOE COUNTY

BOARD OF COUNTY COMMISSIONERS

Administration Building
5334 South Prince Street
Littleton, Colorado 80120
303-795-4630
arapahoegov.com

June 15, 2022

CARRIE WARREN-GULLY

District 1

NANCY N. SHARPE

District 2

JEFF BAKER

District 3

NANCY JACKSON

District 4

BILL L. HOLEN

District 5

To: Denver Regional Council of Governments staff

RE: DRCOG FY 2022-2025 TIP, Call 2 – DRCOG funding application for High Line Canal Underpass at Broadway and Arapahoe

Dear DRCOG staff:

Arapahoe County is pleased to submit a 2022-2025 TIP Call #2 application for the High Line Canal Trail underpass at Broadway and Arapahoe. The High Line Canal Trail is an important recreational amenity that provides 72 miles of multi-use trail through multiple communities in the Denver metropolitan area. The Canal connects over 8,000 acres of adjacent open space from state parks to pocket parks and sees over 500,000 users annually. It passes through 11 jurisdictions, 13 existing underpasses, 13 regional trail connections, and 85 at-grade crossings.

The County recently completed a 30% design of seven proposed underpasses along the Canal and the underpass at Broadway and Arapahoe was one of four that was deemed feasible. This underpass location is important as it will eliminate the conflict between trail users and motorists and will best address considerable safety concerns and trail user delays at the intersection of the Canal and Broadway.

The County has been working with the City of Centennial and the City of Littleton and both jurisdictions support the project and are willing to provide the required local match for the TIP application.

This letter is intended to convey Arapahoe County Commissioner support for the High Line Canal Trail underpass at Broadway and Arapahoe. Please share this support with other members of the Selection Committee. If you have any questions or need additional information regarding this project and involvement of Arapahoe County, please do not hesitate to contact me at your convenience.

Sincerely,

ARAPAHOE COUNTY BOARD OF COMMISSIONERS

Commissioner Nancy Jackson
Chair of Board

If yes, provide amount: \$121,000 Fiscal year(s) funds are provided in: FY23-FY25

If yes, where are funds coming from:

Local Agency (i.e., non-DRCOG funds)

Subregional Funding Target (forum must approve)

13. Please enter your name and date below which certifies the above information is accurate and complete, and your subregion/agency will honor any financial commitments made above:

Name: Jeff Dankenbring

Date: 6/23/2022

If yes, where are funds coming from:

Local Agency (i.e., non-DRCOG funds)

Subregional Funding Target (forum must approve)

13. Please enter your name and date below which certifies the above information is accurate and complete, and your subregion/agency will honor any financial commitments made above:

Name: Keith Reester

Date: 6/23/2022