



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

**APPLICATION OVERVIEW**

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**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 \$16,726,000 for Douglas 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](mailto: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](mailto:joann.mattson@state.co.us); CDOT Region 4 – Josie Hadley, [josie.hadley@state.co.us](mailto:josie.hadley@state.co.us); RTD – Chris Quinn, [chris.quinn@rtd-denver.com](mailto: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](mailto: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](mailto: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](mailto: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 <b>substantially</b> address a <b>major</b> regional or subregional problem and benefit people and businesses in multiple subregions.
4	The project benefits will <b>significantly</b> address a <b>major</b> subregional problem primarily benefiting people and businesses in one subregion.
3	The project benefits will either <b>moderately</b> address a <b>major</b> subregional problem or <b>significantly</b> address a <b>moderate</b> -level subregional problem.
2	The project benefits will <b>moderately</b> address a <b>moderate</b> -level subregional problem.
1	The project benefits will address a <b>minor</b> subregional problem.
0	The project does not address a subregional problem.

**Section B. Metro Vision Regional Transportation Plan Priorities .....50%**

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 <b>substantial</b> benefits in the 2050 MVRTP priority area and is determined to be in the <b>top fifth</b> of applications based on the magnitude of benefits in that priority area.
4	The project provides demonstrable <b>significant</b> benefits in the 2050 MVRTP priority area.
3	The project provides demonstrable <b>moderate</b> benefits in the 2050 MVRTP priority area and is determined to be in the <b>middle fifth</b> of applications based on the magnitude of benefits in that priority area.
2	The project provides demonstrable <b>modest</b> benefits in the 2050 MVRTP priority area.
1	The project provides demonstrable <b>slight</b> benefits in the 2050 MVRTP priority area and is determined to be in the <b>bottom fifth</b> 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	<b>Substantial</b> readiness is demonstrated and all known obstacles that are likely to result in project delays have been mitigated.
4	<b>Significant</b> readiness is demonstrated and several known obstacles that are likely to result in project delays have been mitigated.
3	<b>Moderate</b> readiness is demonstrated and some known obstacles that are likely to result in project delays have been mitigated.
2	<b>Slight</b> readiness is demonstrated and some known obstacles that are likely to result in project delays have been mitigated.
1	<b>Few</b> mitigation or readiness activities have been demonstrated.
0	<b>No</b> mitigation or readiness activities have been demonstrated.

## Project Information

1. Project Title		Industrial Tributary Trail	
2. Project Location <i>Provide a map, as appropriate (see Page 1)</i>		Start point: Plum Creek Pkwy at Miller Activity Complex End point: Plum Creek Trail OR Geographic Area: see project location map	
3. Project Sponsor <i>(entity that will be financially responsible for the project)</i>		Town of Castle Rock	
4. Project Contact Person:			
Name	Rich Havel	Title	Trails Planner
Phone	720-733-4482	Email	rhavel@crgov.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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>If yes, provide applicable concurrence documentation</i>
<input type="checkbox"/> <a href="#">DRCOG 2050 Metro Vision Regional Transportation Plan (2050 MVRTP)</a>			
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: Castle Rock Parks and Recreation Master Plan 2015 - <a href="http://crgov.com/DocumentCenter/View/19470/Parks-and-Recreation-Master-Plan-PDF?_ga=2.109367500.813115641.1655926752-1203661843.1565300794">http://crgov.com/DocumentCenter/View/19470/Parks-and-Recreation-Master-Plan-PDF?_ga=2.109367500.813115641.1655926752-1203661843.1565300794</a>	
		Adopting agency (local agency Council, CDOT, RTD, etc.): Town Council	
		Provide date of adoption by council/board/commission, if applicable: 9/1/2015	
	Please describe public review/engagement to date:	Prior to Town Council review and approval, the Master Plan was present for town residence review and comment during an open house presentation	
	Other pertinent details:	<a href="#">Signed resolution No. 2015-77</a>	
7. Identify the project's <b>key phases and the anticipated schedule of phase milestones.</b> (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)		08/2023
<input checked="" type="checkbox"/> Design	Design contract Notice to Proceed (NTP) issued (if using a consultant):		01/2024
	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):		01/2024

	Environmental scoping meeting held with CDOT (if no consultant):	
<input checked="" type="checkbox"/> Right-of-Way	Initial set of ROW plans submitted to CDOT:	07/2024
	ROW acquisition completed: Estimated number of parcels to acquire: 0	
<input checked="" type="checkbox"/> Construction	FIR (Field Inspection Review):	11/2024
	FOR (Final Office Review):	02/2025
	Required clearances:	03/2025
	Project publicly advertised:	04/2025
<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:	First invoice submitted to CDOT/RTD:	03/2024

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

Downtown Castle Rock is the center of Town and the recently opened Miller Activity Complex (MAC) and Philip S. Miller Park are major activity destinations for the Town and region. There are numerous activities that occur at the MAC including an indoor synthetic field and pool as well as play structures and activity rooms for kids. There are also numerous hiking, single track trails, and other activities in Philip S. Miller Park, including concerts at the amphitheater that attract people throughout the Denver region. There are also two new mixed use high density developments approved or proposed between the MAC and Downtown. These developments (Miller's Landing & ACME Brickyard) are seen as an extension of Downtown. The land uses and urban design will be similar to Downtown, but will contain more primary office space which is lacking in Castle Rock. Unfortunately, there is no good bike and pedestrian connection between Downtown, the Miller's Landing and ACME developments, and the MAC or park. All the growth in residential development in Downtown requires a good trail connection to access these destinations and vice-versa. This project will partner with the two developments and construct a continuous trail with grade separated crossings of major arterials and the BNSF railroad from the MAC to Downtown (see project location map).

**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 Transit<sup>1</sup>**

Rapid Transit Capacity (2050 MVRTP)

**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

- Mobility Hub(s)
- Transit Planning Corridors
- Transit Facilities/Service (Expansion/New)

**Safety Improvements**

**Study**

**Other**, briefly describe:

<sup>1</sup>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.

**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 construct 1 mile of 10' wide concrete trail connecting a major regional park (Philip S. Miller Park and the MAC) to the core downtown area and the Plum Creek Trail (aka front range trail). The project will include: one creek crossing; two roadway grade seperated crossings and one grade seperated crossings of the BNSF Railroad. Town staff has met with BNSF staff on the proposed crossing. Engineereed drawings are requested from the railroad for review and approval. The Town is proposing the grade seperated crossing to be pipe-jack beneath the tracks. Connections to the trail will also be required of the proposed new Miller's Landing and ACME Brickyard developments.

**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.***

The project has had discussions with the project stakeholders (e.g. BNSF railroad). The project is in the Town's CIP for the Parks Department and approved by Town Council. The design, environmental clearances and ROW clearance are still needed, but no ROW acquisition is required.

**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)**

<b>Total amount of Subregional Share Funding Request (in \$1,000's)</b> <i>(No less than \$100,000 and not to exceed 90% of the total project cost)</i>		<b>\$5,465</b>	<b>59.63%</b> of total project cost
<input type="checkbox"/> Check box if requesting <b>only state MMOF funds</b> (requires minimum 50% local funds) <sup>1</sup>			
<b>Match Funds (in \$1,000's)</b> List each funding source and contribution amount.		<b>Contribution Amount</b>	<b>% Contribution to Overall Project Total</b>
Annual Trails Improvement Account		\$2,200	24%
Private sector Development		\$1,500	16%
		\$	0%
		\$	0%
		\$	0%
		\$	0%
<b>Total Match</b> <i>(private, local, state, another subregion, or federal)</i>		<b>\$3,700</b>	<b>40.37%</b>
<b>Project Total</b>		<b>\$9,165</b>	
<b>Notes:</b>	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)<sup>1</sup>** (Total funding should match the Project Total from above)

	FY 2023	FY 2024	FY 2025	Total
<b>DRCOG Requested Funds</b>	\$ <input type="text"/>	\$650	\$4,815	\$5,465
<b>CDOT or RTD Supplied Funds<sup>2</sup></b>	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>	\$0
<b>Local Funds (Funding from sources other than DRCOG, CDOT, or RTD)</b>	\$ <input type="text"/>	\$350	\$3,350	\$3,700
<b>Total Funding</b>	\$0	\$1,000	\$8,165	\$9,165
<b>Phase to be Initiated</b>	<a href="#">Choose an item</a>	<a href="#">Design</a>	<a href="#">Construction</a>	
<b>Notes:</b>	<ol style="list-style-type: none"> <li>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.</li> <li>2. Only enter funding in this line if CDOT and/or RTD specifically give permission via concurrence letters or other written source.</li> </ol>			
<b>Affirmation:</b>	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 project will connect the Downtown 'urban center' to regional and sub-regional destinations, such as the Plum Creek Trail (aka - front range trail), Philip S. Miller Park, MAC, and two new high density mixed use developments. The BNSF rail line that travels between Downtown and the above destinations is being evaluated as a potential stop for the front range train and Bustang stop. The proposed trail will provide a direct connection from this potential stop to Downtown and the other major destinations. In the meantime the connection to the regional Plum Creek Trail will give trail users direct access to the park, MAC, and two new developments (see attached location map)

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.

A direct connection with grade separated crossings between the major destinations, including Downtown will be provided by the proposed trail.

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.

Yes, the project will provide regional benefits by connecting to the regional Plum Creek Trail that is also part of the front range trail system. This will give regional trail users direct access to the regional park and amphitheater, MAC, and new mixed use developments.

The proposed TIP project is also a public private partnership (P3) between the Town and Miller's Landing and ACME Brickyard developments. The Town will be constructing the sections of trail that are grade separated from Prairie Hawk Drive, the BNSF railroad, and the creek crossing to Plum Creek Trail and Downtown. The developers will be responsible for the remaining sections of trail along their developments to the MAC.

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	5,366	-	-
	b. Total households	2,348	-	-
	c. Individuals of color	968	18%	33%
	d. Low-Income households	119	5%	9%
	e. Individuals with limited English proficiency	136	3%	3%
	f. Adults age 65 and over	907	17%	13%
	g. Children age 5-17	801	15%	16%
	h. Individuals with a disability	289	5%	9%
	i. Households without a motor vehicle	97	4%	5%
	j. Households that are housing cost-burdened	828	35%	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*: The proposed trail project will be connected to the Town's multimodal streets as they are improved with the two new developments. The surrounding streets will connect to the neighborhoods and businesses, which include the populations identified above. Streets will also include sidepaths and on-street bikelanes once improved. The new streets will connect the west side of the trail at Plum Creek Pkwy and at Prairie Hawk but due to the railroad, Plum Creek, and I-25 obstructions no other bike or pedestrian access to Downtown or Plum Creek Trail is provided in the area. This trail project is vital for quick and easy access between these major destinations and the individuals living in the area. All public trails and rights-of-way will comply with ADA standards.

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. The project area is within a half mile of existing senior housing and income restricted multi-family housing. It is also adjacent to Downtown Castle Rock which has several new mixed use developments that will benefit from the proposed project. The project will provide a bridge between Downtown, two new high density mixed use development projects that are focused on primary employment and the park and MAC. Serving these destinations will help to improve the livability of the community by providing access to future primary employment in Town, thus eliminating the need to commute outside of Town. For additional information on the two new mixed use developments see the Supplemental material provided with this application, or visit the Miller's Landing webpage at (<https://millerslanding.co/>)
- Contain urban development in locations designated for urban growth and services. The project connects the Downtown 'urban center' to two new high density developments in the Town's Interchange Overlay District (IOD) which allows for higher density mixed use projects.
- Increase housing and employment in urban centers. The project connects the Downtown 'urban center' which is experiencing new higher density residential and employment over the last several years. Two additional vertically mixed use buildings have also been recently approved in Downtown. And the new developments will focus on primary employment to better serve the working population that lives in Castle Rock.
- Improve and expand the region's multimodal transportation system, services, and connections. Improved bike, pedestrian and micromobility access to surrounding destinations will be greatly increased. Since it also connects to the regional front range trail system, bike commuting options will improve for people living further away or in other communities to access Downtown and the other major destinations mentioned above.
- Operate, manage, and maintain a safe and reliable transportation system. The proposed grade separated elements of the project will greatly improve public safety when trying to cross major arterials and the BNSF railroad. The new trail will be added to the Town's pavement management program offered by the Town's Parks Department to make sure it is well maintained and reliable for the public.
- Improve air quality and reduce greenhouse gas emissions. Improving bike, pedestrian and micromobility options by making them more direct and convenient will make them more viable and help to reduce greenhouse gas emissions and other harmful pollutants. The project will also help to eliminate short vehicle trips such as trips between the MAC and Downtown that are typically the most polluting.
- Connect people to natural resource and recreational areas. Connections to the Philip S. Miller park with biking and hiking trails, the regional Plum Creek Trail and adjacent open spaces will be improved by the propose project. It will directly connect an 'urban center' to natural/recreational areas.
- Reduce the risk of hazards and their impact. Grade separated crossings will eliminate hazards such as crossing a railroad and major arterials at grade. This project will also provide an direct off-street facility which is safer and preferred by the public according to the DRCOG Active Transportation Plan.

- **Increase access to amenities that support healthy, active choices.** Connections to recreational areas, parks, and the MAC to the regional Plum Creek Trail directly supports healthy living and active choices. It will also greatly expand the access to many people living in Downtown and who have access to the regional front range trail system. A new Town Recreation Center is also proposed in the ACME Brickyard development proposal.
- **Improve transportation connections to health care facilities and service providers.** The proposed trail will greatly expand bike, pedestrian and micromobility access to area health care facilities. With the connection to Plum Creek Trail it opens up access to health care facilities that may be further away than the immediate area, such as the Adventist Hospital and associated medical facilities to the north and near Plum Creek Trail. But in the immediate area there are several chiropractors, dental offices, and counseling facilities.
- **Diversify the region's housing stock.** Access to a variety of housing stock will be improved with the project. The connection to Downtown will provide access to new condos and apartments in a mixed use urban setting and access to single family homes along the Plum Creek Trail will also be improved. The two new developments will also include new multi-family homes in a mixed use urban setting much like Downtown. Low income housing within a half mile of the project will also be able to benefit from the trail because it will open up areas that can be accessed via bikes.
- **Improve access to opportunity.** The project is located in an area of Castle Rock that serves many income levels, age groups, and housing cost burdened families. Improving bike, pedestrian and micromobility facilities will enhance the access and mobility for these individuals and all users in the surrounding neighborhoods, including Downtown and the new developments. The trail will be designed and constructed to ADA standards to serve the entire public. In fact, there are income restricted and senior housing developments in the area that will greatly benefit from the project. The trail will also greatly improve people's ability to access other parts of the Town via the Plum Creek Trail, and the Downtown, including Festival Park, Town Hall and Douglas County services, and the Douglas County Library.
- **Improve the region's competitive position.** Project improvements will provide accessible routes to housing, retail, recreational, and jobs, especially primary jobs which is the focus of the high density Miller's Landing development project. It will make a more desirable place to live and work, thus attracting people and businesses to locate here from around the State and Country. In fact, Castle Rock has consistently been identified as one of the best places to live by many national publications.

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: [Downtown Castle Rock](#)

- 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?

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: <https://www.crgov.com/1916/Overlay-District---Interchanges>

If yes, provide how the area is defined in the relevant planning document: The proposed trail project is located along two new development proposals and the Town's "Interchange Overlay Districts" (IOD). The development standards for the IOD were envisioned to allow more compact, transit oriented development (TOD) surrounding I-25 interchanges. Key elements in the IOD zoning include reduced parking requirements, improved pedestrian connectivity, increased compact residential options, and the potential to integrate housing in close proximity to employment and services.

The adjacent Downtown is also a priority development area for the Town, as indicated in the Downtown Master Plan adopted in 2008 and the Downtown Overlay District (DOD) Code adopted in 2010. Both of these documents identify the desire and need to allow multi-family housing in downtown, to generate the density and life needed to have an active Downtown 24 hrs a day, 7 days a week. The DOD Code specifically allows multi-family and mixed use developments. The Town also created a Downtown Development Authority in 2008 that is very active today in Downtown redevelopment projects, enabling the taxing and financing ability to incentivize Downtown development. Over the last several years, Town Council has approved several redevelopment financing agreements for 4 major mixed use projects in Downtown, two are completed (Riverwalk and Encore), one is under construction (The View) and one was recently approved and is moving into construction design. These demonstrate the Town's commitment to strong redevelopment in Downtown.

- 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): Higher density compact multi-

family homes are encouraged in the IOD areas and also Downtown. Both new developments, the ACME Brickyard project and the Miller's Landing development intend to integrate new housing and primary jobs. With the intent to create a better jobs/housing balance and reduce the commutes outside Town, thereby reducing the region's overall VMT and air pollution (GHG emissions).

Provide households and employment data*	2020	2050
Households within ½ mile	2,348	3,230
Jobs within ½ mile	9,130	13,566
Household density (per acre) within ½ mile	1.11	1.85
Job density (per acre) within ½ mile	11.02	14.49

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

The proposed trail will connect Downtown to regional recreation and active living destinations like the regional park and the MAC, as well as the new primary office zoned in the Miller's Landing development and the ACME Brickyard development. The IOD zoning near the project intends to integrate housing in close proximity to employment and services. During the site planning stages these developments will be required to provide multiple direct accessways to the trail through their developments to ease access and viability of trails users. It will also connect existing neighborhoods to Downtown and the regional front range trail or Plum Creek Trail, which will increase access to most of the employment areas in Town.

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 proposed trail will connect Downtown to new developments to the west and regional destinations like Philip S. Miller Park, the MAC, and the Plum Creek Trail. Downtown Castle Rock is an 'urban center' and the Douglas County seat and is a key regional destination by itself. The proposed trail and trail connects will provide better connections and access to key businesses and regional destinations in Downtown and the surrounding area. Here is a list of some of the destinations;

- Castle Rock Town Hall
- Castle Rock Police Department and Court
- Castle Rock Historic Museum
- Douglas County primary offices (engineering, planning, etc...)
- Douglas County Clerk and Recorder
- Douglas County motor vehicle
- Douglas County Treasurer
- Castle Rock Chamber of Commerce
- Douglas County Library and Administration Office
- Philip S. Miller Park
- MAC
- New Castle Rock Recreation Center
- Festival Park
- Plum Creek Trail (aka Front Range Trail)
- Front Street Trail
- Seller's Gulch Trail
- Reyn Rock Apartments (Section 8 Senior Housing)
- Riverwalk Apartments (north and south buildings)
- The Encore Condos
- The View Apartments
- Castle Rock Assisted Living and Home Care
- Numerous Downtown shops and restaurants
  
- Miller's Landing high density mixed use development
- ACME Brickyard high density mixed use development

## 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.): [10-foot wide trail, grade separated crossings](#)
- 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 grade separated trail crossings will mitigate the at grade conflict points between bike/pedestrians and motorized vehicles. Improved time reliability will also be improved with the grade separated crossings and the direct route the trail will take to connect several regional destinations.](#)

## Air Quality

### Improve air quality and reduce greenhouse gas emissions.

(drawn from [2050 MVRTP 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	NO <sub>x</sub>	VOCs	PM 10
	2.71	0.19	0.20	0.02

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 trail will provide another option for people traveling between Downtown and the park, MAC, or the two new developments. Therefore, a reduction in motor vehicle trips can be expected on Plum Creek Pkwy and through the congested I-25/Plum Creek Pkwy interchange. The mode shift to bike, pedestrian, or micromobility trips will result in less congestion at the I-25/Plum Creek Pkwy interchange. The reduction in congestion will also reduce the air pollution and GHG emissions at the congested interchange. The short trip from Downtown to destinations along the trail will also reduce short vehicle trips that are also known to be more polluting. In addition, to the reduction in the pollutants above the project will also reduce the primary GHG emission CO<sub>2</sub> by 182.41 (see below for analysis)

**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? I-25 and the BNSF rail line or front range rail alignment
- 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:*

The project is located in the I-25 and BNSF rail corridor which is on the alignment for the front range passenger rail. If the alignment and stop location for Castle Rock is located adjacent to the project, it will provide a direct connection between the station and Downtown 'urban center.' It will also connect the two new development in the IOD zoning which encourages TOD in a compact mixed use development (see project location map below).

**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	1	
Serious Injury crashes	7	
Other Injury crashes	151	
Property Damage Only crashes	694	
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	
Serious Injury crashes reduced	0.00	
Other Injury crashes reduced	0.00	
Property Damage Only crashes reduced	0.00	

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

The project is not expected to reduce motor vehicle crashes but it will provide an safe and direct route between regional destinations via an off-street multi-use trail. The project trail will provide grade separated crossings at two major arterials and the BNSF railroad. Eliminating these conflicts points will greatly improve safety for the trail users.

**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:*

[Not applicable](#)

<b>Active Transportation</b>	<b>Expand and enhance active transportation travel options.</b> <small>(drawn from <a href="#">2050 MVRTP priorities</a>; <a href="#">Denver Regional Active Transportation Plan</a>; &amp; <a href="#">Metro Vision objectives 10 &amp; 13</a>)            Examples of Project Elements: shared use paths, sidewalks, regional trails, grade separations, etc.         </small>
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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:	0	
Bicycle Use Calculations	<b>Year of Opening</b>	<b>2050 Weekday Estimate</b>
2. Enter estimated additional average weekday one-way bicycle trips on the facility after project is completed.	200	600
3. Enter number of the bicycle trips (in #2 above) that will be diverting from a different bicycling route. <small>(Example: {#2 X 50%} or other percent, if justified on line 10 below)</small>	0	0
4. = Initial number of new bicycle trips from project (#2 – #3)	200	600
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.). <small>(Example: {#4 X 30%} or other percent, if justified on line 10 below)</small>	60.00	180.00
5. = Number of SOV trips reduced per day (#4 - #5)	140.00	420.00
6. Enter the value of {#6 x 2 miles}. (= the VMT reduced per day) <small>(Values other than 2 miles must be justified by sponsor on line 10 below)</small>	280.00	840.00
7. = Number of pounds GHG emissions reduced (#7 x 0.95 lbs.)	266.00	798.00
8. If values would be distinctly greater for weekends, describe the magnitude of difference:  NA		
9. If different values other than the suggested are used, please explain here:  NA		

**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):	0	
Pedestrian Use Calculations	<b>Year of Opening</b>	<b>2050 Weekday Estimate</b>
3. Enter estimated additional average weekday pedestrian one-way trips on the facility after project is completed	200	600
4. Enter number of the new pedestrian trips (in #2 above) that will be diverting from a different walking route <small>(Example: {#2 X 50%} or other percent, if justified on line 10 below)</small>	0	0
5. = Number of new trips from project (#2 – #3)	200	600
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.). <small>(Example: {#4 X 30%} or other percent, if justified on line 10 below)</small>	60.00	180.00
7. = Number of SOV trips reduced per day (#4 - #5)	140.00	420.00

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)	280.00	840.00
9. = Number of pounds GHG emissions reduced (#7 x 0.95 lbs.)	266.00	798.00
10. If values would be distinctly greater for weekends, describe the magnitude of difference:  NA		
11. If different values other than the suggested are used, please explain here:  NA		

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:*

This project will improve comfort by providing a shared use off-street low stress trail with several grade separated crossings at busy major arterials and the BNSF railroad. In addition, the project will expand a regional active transportation corridor (aka Plum Creek Trail) that will connect to regional recreational and active destinations like the Philip S. Miller Park and the MAC. It also is partially located in a 'short trip opportunity zone' as designated by DRCOG and abuts a 'pedestrian focus area' as well. As the two new mixed use high density developments just west of Downtown develop there is a very good chance that the pedestrian focus area and the short trip opportunity zone could be expanded due to the connection of the proposed trail. Rather than having to use the I-25/Plum Creek Pkwy interchange to travel between Downtown and the new developments and the regional recreation destinations, the project trail will provide an easy and convenient direct off-street connection.

<b>C. Project Leveraging</b>	WEIGHT	<b>10%</b>
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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>	<b>40.37%</b>	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
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<b>D. Project Readiness</b>	WEIGHT	<b>10%</b>
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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:
- Please describe the status to date on each, including 1) anticipated/known pitfalls/roadblocks, and 2) mitigation activities taken to date:
- Utilities: Utilites within the project area are not anticipated to be an issue
  - Railroad: Staff has met with BNSF to discuss the project concept. Final design and engineering is required for BNSF approval
  - Right-of-Way: The town has an existing agreement with CDOT for the trail
  - Environmental/Historic: No known environmental or historical issues
  - Other: The project is at concept 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?

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

### 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 project has been identified and approved for budget in the current 5 year CIP (2023 to 2027) and one of the developers is committed through their Development agreement, but the 2<sup>nd</sup> developer is still going through the entitlement approval process.

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

Yes  No

Please describe:

The project has been identified and approved in the 5-year CIP for budget years 2023 to 2027

### 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 project is identified in the Town of Castle Rock Master Trails Plan 2015, the Transportation Master Plan, and the Downtown Mobility Master Plan. It has strong public support!

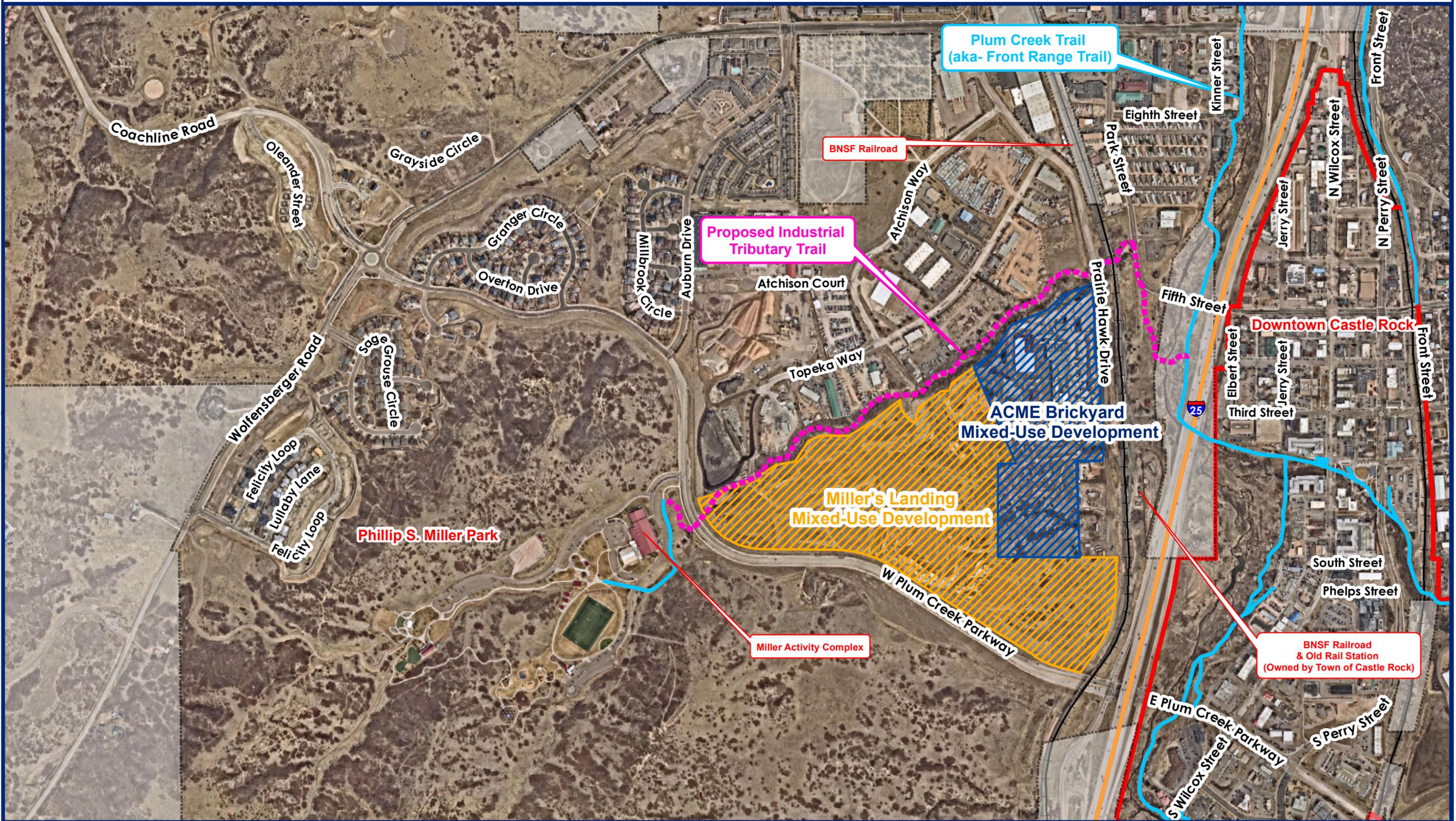
- c. Have any adjacent property owners to the proposed project been contacted and provided with the initial project concept?

Yes  No  N/A

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

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

# INDUSTRIAL TRIBUTARY TRAIL LOCATION MAP



- - - Proposed Industrial Tributary Trail
- Plum Creek Trail
- Acme Brickyard
- Millers Landing
- Town Boundary
- BNSF Railroad



Disclaimer: The data presented has been compiled from various sources, each of which introduces varying degrees of inaccuracies or inconsistencies. Such discrepancies in data are inherent and in supplying this product to the public the Town of Castle Rock assumes no liability for its use or accuracy. For questions or comments regarding omissions, corrections, or updates please visit [CRgov.com/directory](http://CRgov.com/directory) for contact information.  
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# INDUSTRIAL TRIBUTARY TRAIL CONCEPT COST ESTIMATE

Town of Castle Rock

Bid Schedule

June 23, 2022

ITEM	UNITS	UNIT	UNIT COST	TOTAL UNIT COST
Earthwork Grading and Placement	1	LS	\$100,000.00	\$100,000.00
6" Thick 10' Wide Concrete Trail	1,800	SY	\$80.00	\$144,000.00
BNSF Pipe Jack Structure Below Grade Crossing	1	LS	\$4,000,000.00	\$4,000,000.00
BNSF Debris Canopy Structure	1	LS	\$50,000.00	\$50,000.00
Prairie Hawk Dr. Box Culvert Below Grade Crossing	1	LS	\$400,000.00	\$400,000.00
Structural Concrete Walls	1	LS	\$200,000.00	\$200,000.00
Low Water Creek Crossings	1	EA	\$80,000.00	\$80,000.00
<b>SUB TOTAL CONSTRUCTION</b>				<b>\$4,974,000.00</b>
Construction Mobilization 10%	1	LS	\$497,400.00	\$497,400.00
Construction Survey 2%	1	LS	\$99,480.00	\$99,480.00
Geotechnical Testing and Inspection 2%	1	LS	\$99,480.00	\$99,480.00
Erosion and Sediment Control BMP's 20%	1	LS	\$994,800.00	\$994,800.00
<b>TOTAL CONSTRUCTION</b>				<b>\$6,665,160.00</b>
Design and Engineering 15% Construction Cost	1	LS	\$999,774.00	\$999,774.00
Miller's Landing & ACME Brickyard Portion	1	LS	\$1,500,000.00	\$1,500,000.00
<b>PROJECT TOTAL</b>				<b>\$9,164,934.00</b>

File

# STATE OF COLORADO

## DEPARTMENT OF TRANSPORTATION

4201 East Arkansas Avenue  
Denver, Colorado 80222  
(303) 757-9011



CASTLE ROCK  
I 25 PLUM CREEK

SA  
10537

March 2, 1994

Mr. Bruff Shea  
Town of Castle Rock  
680 N. Wilcox  
Castle Rock, CO 80104

Dear Mr. Shea:

Please find attached your fully executed original License Contract with the Colorado Department of Transportation regarding I 25/Plum Creek Bikepath, dated February 10, 1994 for your records.

Sincerely,

T. J. Harris  
Agreements Engineer

TJH/rs  
Attach.

cc: Unbewust, Region 1 (2)  
Tormohlen, Staff Right of Way (original + 2)  
McCullar, Accounting  
Seymour, Audit  
Harris, Agreements   
Central Files (original)

94595

I 25/PLUM CREEK

LICENSE CONTRACT

THIS CONTRACT, made this 10<sup>th</sup> day of February, 1994, by and between the State of Colorado for the use and benefit of THE STATE DEPARTMENT OF TRANSPORTATION, hereinafter referred to as the State, and the TOWN OF CASTLE ROCK, STATE OF COLORADO, hereinafter referred to as the contractor or Local Agency,

WHEREAS, required approval, clearance and coordination has been accomplished from and with the appropriate agencies; and

WHEREAS, the State owns certain property described in Exhibit A, hereinafter referred to as "the State's right of way" which is used for I 25 right of way; and

WHEREAS, the Local Agency has planned and anticipates a project for the construction of a bikepath; and

WHEREAS, the Local Agency desires to construct a portion of the bikepath within the State's I 25 right-of-way; and

WHEREAS, the Local Agency has requested permission to construct the bikepath to allow for bicycle traffic to enter I 25 right-of-way, pass beneath the structures which carry I 25 over East Plum Creek south of the Wolfensberger Interchange, and then exit the I 25 right-of-way ("the Bikepath Project"); and

WHEREAS, the State desires to allow the Local Agency to use the State's right of way for construction and use of a bikepath, as described herein, subject to the terms and conditions of this contract; and

WHEREAS, the Local Agency recognizes that the State must retain the superior right to use the State's right of way for highway purposes, and the Local Agency desires to agree to relinquish the use of such right of way without any cost or liability to the State, pursuant to the terms of this contract; and

WHEREAS, the Bikepath Project is to be specifically described in the plans and specifications ("the Plans"), which Plans shall be prepared by the Local Agency; and

WHEREAS, the Local Agency desires to pay for the complete cost of the Bikepath Project; and

WHEREAS, the State desires to review the design and construction of the proposed Bikepath Project to ensure the integrity of I 25 in the project area; and

WHEREAS, the State and Local Agency consider it to be in their mutual interest to cooperate in and to agree upon certain responsibilities with regard to performance of the Bikepath Project; and

WHEREAS, this contract is executed by the State pursuant to the provision of Sections 43-2-103 and 43-2-144, C.R.S., as amended; and

WHEREAS, the Local Agency has executed this contract under the authority of an appropriate ordinance or resolution, a copy of which is attached hereto and made a part hereof.

NOW, THEREFORE, it is hereby agreed that:

- A. The Local Agency shall be responsible for the preparation of the Plans and for the accuracy and completeness of the Plans. The Plans are made a part of this contract by this reference. Use of the bikepath will be limited to bicycles and pedestrians. No equestrian or motorized vehicle use will be permitted, with the exception of motorized vehicles necessary for maintenance of the bikepath.
- B. The Local Agency shall be responsible for the construction of the Bikepath Project in accordance with the Plans and intends to retain an independent contractor to construct the Project. The Local Agency shall administer and provide technical direction to its contractor concerning such construction, as provided herein.
- C. The State shall review the Plans for the Bikepath Project, and review construction of the Bikepath Project as described herein, so that construction of the Bikepath Project by the Local Agency is consistent with Federal and State standards, the provisions of this

- contract and the Local Agency's construction contract.
- D. The Local Agency shall be solely responsible for all costs of the Bikepath Project including, but not limited to, costs of design and construction of the Bikepath Project. The State shall not have any responsibility for any cost or expense incurred in the design and construction of the Bikepath Project.
  - E. The Local Agency shall be solely responsible for any and all damage to the interstate roadway, structures and/or associated facilities caused by the construction, operation, or maintenance of the bikepath within the I 25 right-of-way. Such damage shall be corrected in accordance with the State's standards at the Local Agency's sole expense.
  - F. The Local Agency shall be solely responsible and liable for any and all claims, damages, liability and court awards including costs, expenses and attorney fees incurred as a result of the construction, operation, or maintenance of the bikepath within the I 25 right-of-way.
  - G. The State will provide liaison with the Local Agency through the State Region Transportation Director, Region I, located at 18500 E. Colfax Avenue, Aurora, CO 80011. Said Region Transportation Director will also be responsible for coordinating the State's activities under this contract.
  - H. The Local Agency will provide:
    - 1. Preliminary engineering, design services and preparation of construction plans, special provisions and estimates.
    - 2. Design worksheets used in design of the Bikepath Project.
  - I. The Local Agency will comply with the following:
    - 1. The Local Agency will be responsible for the plans being accurate and complete.

2. Notwithstanding any review or consents given by the State for said plans or the performance by the State of the construction review services, the State will not be liable or responsible in any manner for the design, details or construction of the Bikepath Project.
- J. The Local Agency will comply with the applicable provisions of the State's approved Action Plan, including all Federal directives contained therein by reference.
- K. The State will review construction plans, special provisions and estimates and indicate those changes necessary to assure compliance with State and FHWA requirements. The Local Agency will afford the State ample opportunity to review the construction plans, special provisions and estimates, as changed, and said plans shall be considered final when accepted by the parties hereto.
- L. The Local Agency will be responsible for construction of the Bikepath Project. The Local Agency shall not start construction of the Project on State right of way, nor authorize its contractor to start construction, until the State issues a written notice to proceed to the Local Agency, which notice shall not be unreasonably withheld or unduly delayed. In the event the Local Agency contracts for construction of the Bikepath Project, the Local Agency shall provide final assembly of construction contract documents, advertise the call for bids, receive and open bid proposals, award the construction contract, administer the construction contract and prepare and issue any contract amendments. All such documents and procedures, including award of the construction contract, shall substantially comply with standard State construction specifications and legal requirements and shall be subject to review by the State. The construction contract between the Local

Agency and its contractor, together with the plans and specifications for the construction, shall be subject to prompt review and concurrence by the State, which concurrence shall be evidenced by a letter from the Region I Transportation Director. Such construction contract between the Local Agency and its contractor shall contain provisions to protect the interests of the State, including, but not limited to:

- a. The Local Agency shall procure from its construction contractor certificates of insurance and shall deliver copies of the same directly to the State. The types and limits of insurance shall be at a minimum as follows:
  - (1) Worker's Compensation Insurance in accordance with prevailing laws.
  - (2) Comprehensive general liability \$600,000 combined single limit bodily injury and property damage, each occurrence; \$2,000,000 annual aggregate. If said aggregate is reduced by claim payments or otherwise exhausted, the Local Agency's contractor shall immediately purchase additional aggregate limits for the remainder of the Contract and furnish certificates of such insurance to the Local Agency and the State.
  - (3) Automobile liability \$600,000 combined single limit bodily injury and property damage, each accident.

Policies (2) and (3) enumerated above shall name the Local Agency and the State as an additional insured.

- b. To the extent authorized by law, the Local Agency's contractor shall indemnify, save and hold harmless the State, its employees and agents, against any and all claims, damages, liability, and court awards including costs, expenses, and attorney fees incurred as a result of any act or omission by the contractor, or its employees, agents, subcontractors, or assignees pursuant to the terms of this contract.

- M. The State hereby grants a license to the Local Agency to use a section of the State's I 25 right of way as described in detail in Exhibit A, attached hereto and made a part hereof. The sole purpose of the license is for the construction and maintenance of a bikepath to allow for bicycle traffic to enter I 25 right-of-way, pass beneath the structures which carry I 25 over East Plum Creek south of the Wolfensberger Interchange, and then exit the I 25 right-of-way. The State grants the license subject to the conditions stated herein and in consideration of payment by the Local Agency of \$300.00 for administrative costs incurred by the State. The Local Agency shall pay such consideration to the State within 60 days of execution of this contract.
- N. The Local Agency recognizes that the State must retain the superior right to use the State's right of way for highway purposes and that the Local Agency's use of the State right of way, as described in Exhibit A, is at all times subordinate to and subject to any and all current and future interstate roadway operations, maintenance and State highway needs and purposes, as determined by the State in its discretion. The Local Agency agrees that this license is limited in scope, use, and time, as described herein. The license is granted solely as a courtesy to the Local Agency, and vests no interest or right of any nature in the State right of way to the Local Agency. The Local Agency agrees that this license is revocable by the State at no expense to the State pursuant to the following provisions:
- a) The State may revoke this license, and the Local Agency shall relinquish all use of the State right of way without any cost or liability to the State whenever the State, in its sole discretion, determines that the State right of way is required for any emergency state highway purpose. The State has the right, if it determines that an emergency

situation exists, to terminate this license, to stop construction of the bikepath, or to close the bikepath at any time to protect public safety, to facilitate interstate activities, or for other highway purposes.

- b) In non-emergency situations, the State may revoke this license and, in that event, the Local Agency shall relinquish the use of the State right of way without any cost or liability to the State within 180 days after receipt of written notice from the State that such right of way is needed for current or future interstate roadway operations, maintenance, or other State highway needs and purposes.
- O. The Local Agency will be responsible for acquiring any additional rights-of-way required for the completion of the Bikepath Project, including any necessary construction easements. Prior to this project being advertised for bids, the Local Agency must certify in writing to the State that all right-of-way has been secured or that no additional right of way is required.
- P. The Local Agency shall obtain any required proper clearance or approval from any utility company or ditch company which may become involved in this project, by separate agreement between the Local Agency and other entity, if necessary. Prior to the Bikepath Project being advertised for bids, the Local Agency must certify in writing to the State that all such clearances have been obtained.
- Q. For the Bikepath Project:
  - 1. a. The State will review and inspect the construction of the Bikepath Project within or affecting State right-of-way to ensure it is consistent with Federal and State standards and the Plans.

- b. The State's inspector will not have direct contact with the Local Agency's contractor but will notify the Local Agency's project representative, as identified in the construction contract documents, of any State recommendations and directions concerning proposed construction contract modifications, and will coordinate such modifications and its construction review services with the Local Agency. After consultation of the State's inspector and the Local Agency's project representative, the State's recommendations, or directions will be implemented. In the event that the Local Agency project representative fails to concur in any State construction recommendations, or directions, then the matter will be referred to the State's Region 1 Construction Engineer for resolution.
- c. The State's inspector may, in writing, suspend the construction of those portions of the Bikepath Project within or affecting State right-of-way, wholly or in part due to the failure of the Local Agency or its construction contractor to correct conditions unsafe for the workmen or the general public; for failure to carry out provisions of this contract or the construction contract including construction modifications or directions required by the State; for such periods as he may deem necessary due to unsuitable weather; for conditions considered unsuitable for the prosecution of the work or for any other condition or reason deemed to be in the public interest. The State shall notify the Local Agency and provide

opportunity to correct such conditions prior to any suspension. The Local Agency shall include this provision in its contract with the construction contractor.

2. a. The Local Agency shall provide construction engineering during the construction of all elements of the Bikepath Project. Said construction engineering will include field and office engineering, land survey controls, inspection and material testing and control.
- b. The Local Agency shall be responsible for the administration of and payment to its contractor of all costs incurred for project construction under the construction contract with the contractor.

R. Upon satisfactory completion of construction of the Bikepath Project, the Local Agency will issue to the State a Certificate of Final Completion showing the date of final completion and certifying that the Bikepath Project has been constructed according to the approved plans and specifications.

Determination of satisfactory completion of the Bikepath Project shall be made by the State in accordance with the following procedures:

1. Upon due notice from the Local Agency's project representative of presumptive completion of the Bikepath Project, the State's inspector will participate in an inspection of the Bikepath Project with the Local Agency's contractor.
2. If construction of those portions of the Bikepath Project, within or affecting State right-of-way is found completed to the satisfaction of the State's Project Engineer, that inspection shall constitute the final inspection and the State's inspector will notify the Local Agency in writing of the State's

- acceptance of the Bikepath Project as of the date of the final inspection.
3. If the inspection discloses any work, in whole or in part as being unsatisfactory, the State's inspector will give the Local Agency recommendations and directions for correction of same, and the Local Agency shall direct its contractor to implement the State's recommendations and directions subject to the provisions of paragraph Q.1.b. of this contract.
  4. Upon correction of the work, another inspection will be made which shall constitute the final inspection provided the work has been satisfactorily completed. In such event, the State's inspector will notify the Local Agency in writing of the State's acceptance of the Bikepath Project as of the date of the final inspection.
  5. Final acceptance by the State under this paragraph does not waive any State legal rights contained herein.
- S. The State shall not be precluded or estopped by acceptance of the Bikepath Project work from showing at a later time that the Project work as constructed does not in fact conform to the approved Plans. The State shall not be precluded or estopped by acceptance of the Bikepath Project work from recovering from the Local Agency such damage as the State may sustain by reason of the Local Agency's failure to comply with the terms of this contract. Neither acceptance by the State of the Bikepath Project work nor any possession of the constructed Bikepath Project facilities by the State, shall operate as a waiver of any portion of this contract or of any power herein reserved, or of any right to damages. A waiver of any breach of this contract shall not be held to be a waiver of any other

or subsequent breach.

- T. Within 60 days after Local Agency issuance and State acceptance of the Certificate of Final Completion, the Local Agency shall prepare and deliver to the State the final sets of plans and specifications (the "As-built" plans) for the Bikepath Project, based upon field notes maintained by the Local Agency. A copy of said plans shall be made a part of this contract by reference.
- U. The Local Agency will maintain and operate the improvements constructed under this contract, at its own cost and expense during their useful life, in a manner satisfactory to the State, and will make ample provision for such maintenance each year. Such maintenance and operations shall be in accordance with all applicable statutes and ordinances, and regulations promulgated thereunder, which define the Local Agency's obligation to maintain such improvements. The State will make periodic inspections of the Bikepath Project to verify that such improvements are being adequately maintained with respect to protection of I 25 and the right-of-way.
- V. In the event the portion of I 25 which passes over the improvements constructed under the Bikepath Project is widened, the Local Agency shall take all reasonable actions to provide the funding necessary for any required relocation or reconstruction of the bikepath. The State will provide the Local Agency the opportunity to review and comment on State plans for widening.
- W. The State hereby reserves the right to revoke the use of I 25 right-of-way by the Local Agency in the event the bikepath is not used as intended or if the bikepath is found to be detrimental to the Interstate or its structures.

- X. Notwithstanding any review and concurrence with the Bikepath Project design plans or acceptance of the final constructed Bikepath Project, the State shall not have any liability for the construction, maintenance, or use of the Bikepath Project or for any act or omission by the Local Agency or its contractor.
- Y. The parties hereto agree that this contract is contingent upon all funds designated for the work herein being made available from the Local Agency. Should the Local Agency fail to provide necessary funds as agreed upon herein, the contract may be terminated by either party. Any party terminating its interest and obligation herein shall not be relieved of any financial obligations which existed prior to the effective date of such termination. After the construction contract has been awarded and the construction contract is fully executed, this contract may not be terminated by the Local Agency until the construction of the Bikepath Project is completed and final bills are paid in full, unless the Local Agency restores the project site to its prior condition or completes the Project to the extent necessary to ensure public safety and to comply with the State's obligations under the state highway system.
- Z. The term of this contract, except for provisions regarding maintenance, shall continue through the completion and final acceptance of the Bikepath Project by the Local Agency with concurrence from the State. The covenants with regard to maintenance of the improvements constructed under this contract shall remain in effect in perpetuity or until such time as the Local Agency is, by law or otherwise, relieved of such responsibility.
- AA. The Special Provisions attached hereto are hereby made a part of this contract.
- AB. This contract shall inure to the benefit of and be binding upon the parties, their successors and assigns.

AC. The Local Agency represents and warrants that it has taken all actions that are necessary or that are required by its procedures, bylaws, or applicable law, to legally authorize the undersigned signatory to execute this contract on behalf of the Local Agency and to bind the Local Agency to its terms.

IN WITNESS WHEREOF, the parties hereto have executed this contract the day and year first above written.

ATTEST:

By Timothy J. Harris  
Chief Clerk

STATE OF COLORADO  
ROY ROMER, GOVERNOR

By W. F. Reardon  
Executive Director  
DEPARTMENT OF TRANSPORTATION

ATTEST:

By Sally Musson  
Title Town Clerk

CASTLE ROCK, COLORADO

By Mark C. Williams  
Title Mayor

## SPECIAL PROVISIONS

### CONTROLLER'S APPROVAL

1. This contract shall not be deemed valid until it shall have been approved by the Controller of the State of Colorado or such assistant as he may designate. This provision is applicable to any contract involving the payment of money by the State.

### FUND AVAILABILITY

2. Financial obligations of the State of Colorado payable after the current fiscal year are contingent upon funds for that purpose being appropriated, budgeted, and otherwise made available.

### BOND REQUIREMENT

3. If this contract involves the payment of more than fifty thousand dollars for the construction, erection, repair, maintenance, or improvement of any building, road, bridge, viaduct, tunnel, excavation or other public work for this State, the contractor shall, before entering upon the performance of any such work included in this contract, duly execute and deliver to the State official who will sign the contract, a good and sufficient bond or other acceptable surety to be approved by said official in a penal sum not less than one-half of the total amount payable by the terms of this contract. Such bond shall be duly executed by a qualified corporate surety conditioned upon the faithful performance of the contract and in addition, shall provide that if the contractor or his subcontractors fail to duly pay for any labor, materials, team hire, sustenance, provisions, provender or other supplies used or consumed by such contractor or his subcontractor in performance of the work contracted to be done or fails to pay any person who supplies rental machinery, tools, or equipment in the prosecution of the work the surety will pay the same in an amount not exceeding the sum specified in the bond, together with interest at the rate of eight per cent per annum. Unless such bond is executed, delivered and filed, no claim in favor of the contractor arising under such contract shall be audited, allowed or paid. A certified or cashier's check or a bank money order payable to the Treasurer of the State of Colorado may be accepted in lieu of a bond. This provision is in compliance with CRS 38-26-106.

### INDEMNIFICATION

4. To the extent authorized by law, the contractor shall indemnify, save, and hold harmless the State, its employees and agents, against any and all claims, damages, liability and court awards including costs, expenses, and attorney fees incurred as a result of any act or omission by the contractor, or its employees, agents, subcontractors, or assignees pursuant to the terms of this contract.

### DISCRIMINATION AND AFFIRMATIVE ACTION

5. The contractor agrees to comply with the letter and spirit of the Colorado Antidiscrimination Act of 1957, as amended, and other applicable law respecting discrimination and unfair employment practices (CRS 24-34-402), and as required by Executive Order, Equal Opportunity and Affirmative Action, dated April 16, 1975. Pursuant thereto, the following provisions shall be contained in all State contracts or sub-contracts.

During the performance of this contract, the contractor agrees as follows:

(a) The contractor will not discriminate against any employee or applicant for employment because of race, creed, color, national origin, sex, marital status, religion, ancestry, mental or physical handicap, or age. The contractor will take affirmative action to insure that applicants are employed, and that employees are treated during employment, without regard to the above mentioned characteristics. Such action shall include, but not be limited to the following: employment upgrading, demotion, or transfer, recruitment or recruitment advertisements; lay-offs or terminations; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the contracting officer setting forth provisions of this non-discrimination clause.

(b) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, creed, color, national origin, sex, marital status, religion, ancestry, mental or physical handicap, or age.

(c) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, notice to be provided by the contracting officer, advising the labor union or workers' representative of the contractor's commitment under the Executive Order, Equal Opportunity and Affirmative Action, dated April 16, 1975, and of the rules, regulations, and relevant Orders of the Governor.

(d) The contractor and labor unions will furnish all information and reports required by Executive Order, Equal Opportunity and Affirmative Action of April 16, 1975, and by the rules, regulations and Orders of the Governor, or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency and the office of the Governor or his designee for purposes of investigation to ascertain compliance with such rules, regulations and orders.

(e) A labor organization will not exclude any individual otherwise qualified from full membership rights in such labor organization, or expel any such individual from membership in such labor organization or discriminate against any of its members in the full enjoyment of work opportunity because of race, creed, color, sex, national origin, or ancestry.

(f) A labor organization, or the employees or members thereof will not aid, abet, incite, compel or coerce the doing of any act defined in this contract to be discriminatory or obstruct or prevent any person from complying with the provisions of this contract or any order issued thereunder; or attempt, either directly or indirectly, to commit any act defined in this contract to be discriminatory.

# Bicycle and Pedestrian Improvements

This calculator will estimate the reduction in emissions resulting from improvements to bicycle and pedestrian infrastructure and associated mode shift from passenger vehicles to bicycling or walking, including but not limited to sidewalks, dedicated bicycle infrastructure, improved wayfinding, mid-block crossing installations, bike share systems, and bike parking improvements.

## Navigator

### Bicycle and Pedestrian Improvements

### INPUT

(1) What is your project evaluation year?

(2) Estimate the shift in daily motorized passenger vehicle trips to non-motorized travel due to the bicycle and pedestrian project.

Daily Passenger Vehicle Trips		
Before	After	Change
13000	12600	400

(3a) Select the data type used for entering the typical one-way trip distance of passenger vehicles below:

**Trip Distance Source**

(3b) If you selected "Average" above, enter the typical one-way trip distance. If you selected "Distribution" above, enter the typical distribution of one-way trip distances.

Typical Trip Distance (miles one way)	Distribution of Trip Distances (daily fraction per mileage bin)					Sum
	$x < 1$	$1 \leq x < 2$	$2 \leq x < 3$	$3 \leq x < 4$	$4 \leq x \leq 5$	
<input type="text" value="1.25"/>						

### OUTPUT

#### EMISSION REDUCTIONS

Pollutant	Total
Carbon Monoxide (CO)	2.712
Particulate Matter <2.5 μm (PM <sub>2.5</sub> )	0.007
Particulate Matter <10 μm (PM <sub>10</sub> )	0.021
Nitrogen Oxide (NOx)	0.193
Volatile Organic Compounds (VOC)	0.203
Carbon Dioxide Equivalent (CO <sub>2</sub> e)	182.416
Total Energy Consumption (MMBTU/day)	2.352

\*Units in kg/day unless otherwise noted