Part 1 Base Information

1. Project Title	**SH7/East Arapahoe Ave Bridge Replacement**
2. Project *Start/End* points or Geographic Area *Provide a map with submittal, as appropriate*	38th/Marine Street to SH157/Foothills Parkway - A map is included at the end of this application.
3. Project Sponsor *(entity that will construct/ complete and be financially responsible for the project)*	City of Boulder
4. Project Contact Person, Title, Phone Number, and Email	Gerrit Slatter, Principal Transportation Projects Engineer, 303-441-1978, slatterg@bouldercolorado.gov

5. Does this project touch CDOT Right-of-Way, involve a CDOT roadway, access RTD property, or request RTD involvement to operate service?

☒ Yes ☐ No

If yes, provide applicable concurrence documentation with submittal

6. What planning document(s) identifies this project?

☒ DRCOG 2040 Fiscally Constrained Regional Transportation Plan (2040 FCRTP)

☒ Local plan: City of Boulder Transportation Master Plan, East Arapahoe Transportation Plan

☒ Other(s): Northwest Area Mobility Study, SH7 Planning and Environmental Linkages Study Colorado Dept of Transportation Bridge Enterprise Structure List

Provide link to document/s and referenced page number if possible, or provide documentation with submittal

7. Identify the project's **key elements**.

- ☐ Rapid Transit Capacity (2040 FCRTP)
- ☐ Transit Other:
- ☒ Bicycle Facility
- ☒ Pedestrian Facility
- ☒ Safety Improvements
- ☐ Roadway Capacity or Managed Lanes (2040 FCRTP)
- ☐ Roadway Operational

Grade Separation

- ☐ Roadway
- ☐ Railway
- ☐ Bicycle
- ☐ Pedestrian

- ☐ Roadway Pavement Reconstruction/Rehab
- ☒ Bridge Replace/Reconstruct/Rehab
- ☐ Study
- ☐ Design
- ☐ Transportation Technology Components
- ☐ Other:

8. **Problem Statement** What specific Metro Vision-related subregional problem/issue will the transportation project address?

SH7/East Arapahoe is one of Boulder's busiest travel corridors, connecting Boulder to I-25/Brighton and connecting the 40,000 employees who work in the corridor to destinations throughout the city. Recognizing the need to provide better travel options for commuters and for the greater number of people who will be working and living in the corridor over the coming years, the City has adopted the East Arapahoe Transportation Plan (EATP). The EATP sets out a long-range vision, with safety, access, and mobility improvements that can be phased incrementally and in coordination with the SH 7 Coalition communities to create a regional multimodal corridor with high-quality/high-frequency bus rapid transit (BRT), a regional bikeway, pedestrian improvements and first and final mile supportive

infrastructure. SH 7 is also identified as a planned transit corridor in the 2040 Metro Vision Regional Transportation Plan.

The proposed bridge replacement project is an early action item to realizing the EATP vision. The existing westbound bridge (CDOT Structure No. D-15-AQ) was constructed in 1938 and is a FASTER eligible bridge with a sufficiency rating of 51.90. The eastbound bridge was constructed in 1966. This project would advance the EATP near term action items to enhance safety, access and multimodal connections within the SH7/East Arapahoe corridor with a new bridge and multi-use path facilities on both sides of the roadway.

From Arapahoe Avenue bridge over Boulder Creek looking east.

9. Define the **scope** and **specific elements** of the project.

The project would reconstruct the SH 7/Arapahoe Avenue bridge over Boulder Creek, replacing two existing twin bridges, both of which lack adequate pedestrian facilities and one of which CDOT has classified as structurally deficient.

The new bridge will be designed to safely carry the 28,000 vehicles that cross it today and provide pedestrian and bicycle facilities along both sides of the bridge and connections to the Boulder Creek multi-use path. The new bridge would be designed and constructed to meet AASHTO and ADA design guidelines and to be consistent with the City of Boulder's East Arapahoe Transportation Plan, enhancing access and connections to the well-used Boulder Creek multiuse path and on-street pedestrian, bicycle and transit connections. The new bridge will also enhance the bicycle and pedestrian underpass crossing below it by improving sightlines and underpass crossing width.

The concept plan and project cost estimate are included at the end of this application.

10. What is the status of the proposed project?

The East Arapahoe Transportation Plan was accepted by the Boulder City Council in August 2018 and conceptual level plans have been developed for this section of the project.

11. Would a smaller DRCOG-allocated funding amount than requested be acceptable, while maintaining the original intent of the project?

☐ Yes ☒ No

If yes, define smaller meaningful limits, size, service level, phases, or scopes, along with the cost for each.

A. Project Financial Information and Funding Request

1. Total Project Cost		**$6,000,000**
2. Total amount of DRCOG Subregional Share Funding Request	**$4,200,000**	**70%** of total project cost
3. Outside Funding Partners ***(other than DRCOG Subregional Share funds)*** List each funding partner and contribution amount.	**$$ Contribution Amount**	**% of Contribution to Overall Total Project Cost**
City of Boulder	$1,800,000	30%
	$	
	$	
	$	
	$	
	$	
Total amount of funding provided by other funding partners *(private, local, state, Regional, or federal)*	**$1,800,000**	30%

Funding Breakdown (year by year)*

**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 an inflation factor of 3% per year from 2019.*

	FY 2020	FY 2021	FY 2022	FY 2023	Total
Federal Funds	$	$210,000	$840,000	$3,150,000	**$4,200,000**
State Funds	$	$	$	$	**$0**
Local Funds	$	$90,000	$360,000	$1,350,000	**$1,800,000**
Total Funding	$0	$300,000	$1,200,000	$4,500,000	**$6,000,000**
4. Phase to be Initiated *Choose from Design, ENV, ROW, CON, Study, Service, Equip. Purchase, Other*	Choose an item	Design	Acquisition	Construction	

5. By checking this box, the applicant's Chief Elected Official (Mayor or County Commission Chair) or City/County Manager for local governments or Agency Director or equivalent for others, has certified it allows this project request to be submitted for DRCOG-allocated funding and will follow all DRCOG policies and state and federal regulations when completing this project, if funded. ☒

Part 2 Evaluation Criteria, Questions, and Scoring

A. Subregional significance of proposed project

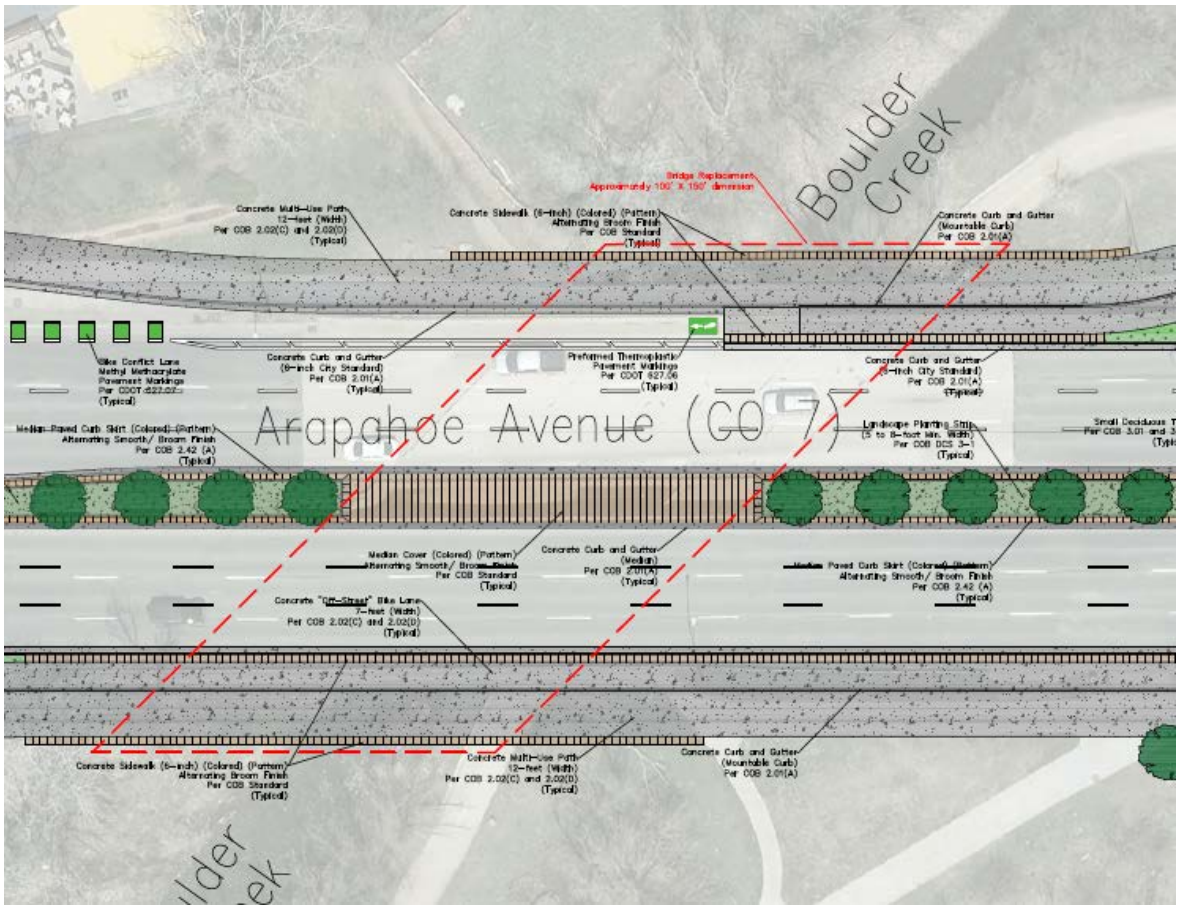
WEIGHT **40%**

*Provide **qualitative and quantitative** (derived from Part 3 of the application) responses to the following questions on the subregional significance of the proposed project.*

1. Why is this project important to your subregion?

SH7/Arapahoe Avenue SH7/Arapahoe Avenue is a key east-west corridor in the City of Boulder serving regional and local travel needs. SH 7/East Arapahoe Avenue connects Boulder to I-25/Brighton connecting the 40,000 employees who work in the corridor to destinations throughout the city including access to corridor businesses, Boulder Community Health main hospital campus, University of Colorado and the 29th Street Retail Center. This project intersects with the Boulder's Greenway System and the Boulder Creek path.

This project's improvements support the Boulder County subregion and its focus on multimodal network, regional connections and safety. The new, reconstructed bridge replaces a bridge that is considered structurally deficient and in need of replacement and lacks adequate pedestrian and bicycling infrastructure. The multi-use paths will provide improved bicycling and pedestrian facilities designed for a wider range of ages and abilities. Providing infrastructure in good maintenance condition with facilities designed for a wide range of bicycle and pedestrian user types will support safer and more comfortable travel for all travel modes accessing regional and local transit services as well as planned future BRT services.



Concept Drawing for the Arapahoe Bridge Replacement; a complete set and cost estimate are in the attachments

2. Does the proposed project cross and/or benefit multiple **municipalities**? If yes, which ones and how?

Yes, Arapahoe Avenue/SH7 is a major east-west travel corridor connecting Boulder to Brighton and benefits residents and employees accessing the local and regional transit services connecting the many corridor

communities together with an improved multimodal transportation network serving regional and local travel needs.

3. Does the proposed project cross and/or benefit another **subregion(s)**? If yes, which ones and how?

Yes, the project's benefits support the first and final mile access to transit benefiting the residents and employees of Boulder, Broomfield and Adams subregions.

4. How will the proposed project address the specific transportation problem described in the **Problem Statement** *(as submitted in Part 1, #8)*?

The project would advance the EATP near term action items to enhance safety, access and multimodal connections within the SH7/East Arapahoe corridor by replacing an aging and structurally deficient bridge with a new bridge with multi-use path facilities on both sides of the roadway.

5. One foundation of a sustainable and resilient economy is physical infrastructure and transportation. How will the **completed** project allow people and businesses to thrive and prosper?

This project fulfills economic sustainability goals by increasing safety access and connections for all travel modes which benefits local businesses through improved transportation for customers, goods, services and employees. As evidenced by transportation investments along other city corridors including 30th Street, north of Arapahoe Avenue, and the US 36/28th Street corridor, private dollars follow public investment. Additionally, as evidenced by the past federal stimulus efforts, construction of transportation infrastructure is considered a good mechanism for stimulating local economies through the creation of direct construction jobs and supporting positions and the purchases of goods and services.

6. How will connectivity to different travel modes be improved by the proposed project?

The project includes multi-use paths on boths sides of the roadway and improvements to the bicycle and pedestrian underpass crossing for Boulder Creek Greenway path and Arapahoe Avenue which will improve sightlines and underpass crossing width.

7. Describe funding and/or project partnerships *(other subregions, regional agencies, municipalities, private, etc.)* established in association with this project.

The project has had extensive community engagement in the development of the recommended design. The City of Boulder has been working with the Colorado Department of Transportation on this corridor and a near term pavement resurfacing project on Arapahoe Avenue in Boulder. These improvements will optimize the investment that CDOT will be making and discussions will continue to see if there are opportunities to minimize construction impacts or costs. A request for project funding match was made to CDOT but they are unable to provide a match at this time.

B. DRCOG Board-approved Metro Vision TIP Focus Areas

WEIGHT **30%**

*Provide **qualitative and quantitative** (derived from Part 3 of the application) responses to the following questions on how the proposed project addresses the three DRCOG Board-approved Focus Areas (in bold).*

1. Describe how the project will **improve mobility infrastructure and services for vulnerable populations (including improved transportation access to health services).**

This section of SH7/Arapahoe Avenue serves over 28,000 daily vehicles (including local and regional transit buses) and over 1,500 daily bicyclists and pedestrians. Improvements to this bridge crossing will support continuous safe travel and maintain important transportation infrastructure in good functional and operational condition.

2. Describe how the project will **increase reliability of existing multimodal transportation network.**

This project will increase reliability of the existing multimodal transportation network by expanding the options to a wider range of current and potential users and providing transportation infrastructure in good functional and operational condition.

3. Describe how the project will **improve transportation safety and security.**

This SH7/Arapahoe Avenue project's components of multi-use path travel comfort and security for users of a wider range of ages and abilities. As shown in Part 3 Section F, it is anticipated that there will be reduction of 1 Serious injury crash and 6 other injury crashes from these improvements.

C. Consistency & Contributions to Transportation-focused Metro Vision Objectives

WEIGHT 20%

*Provide **qualitative and quantitative** responses (derived from Part 3 of the application) to the following items on how the proposed project contributes to Transportation-focused Objectives (in bold) in the adopted Metro Vision plan. Refer to the expanded Metro Vision Objective by clicking on links.*

MV objective 2	**Contain urban development in locations designated for urban growth and services**.

1. Will this project help focus and facilitate future growth in locations where urban-level infrastructure already exists or areas where plans for infrastructure and service expansion are in place? ☒ Yes ☐ No

Describe, *including supporting quantitative analysis*

The SH7/East Arapahoe bridge replacement project is within the City of Boulder's Area 1 Planning Area, as defined Boulder in the Valley Comprehensive Plan which fully supports growth where urban-level infrastructure already exists and/or there are plans in place for infrastructure and service expansion. Consistent with the BVCP, the urban level infrastructure has been planned to accommodate any and all future redevelopment.

MV objective 3	**Increase housing and employment in urban centers**.

2. Will this project help establish a network of clear and direct multimodal connections within and between urban centers, or other key destinations? ☒ Yes ☐ No

Describe, *including supporting quantitative analysis*
The SH7/East Arapahoe bridge replacement project is within the central and east Boulder residential areas which has higher density residential uses along the corridor and links to regional transit service.

MV objective 4	**Improve or expand the region's multimodal transportation system, services, and connections**.

3. Will this project help increase mobility choices within and beyond your subregion for people, goods, or services? ☒ Yes ☐ No

Describe, *including supporting quantitative analysis*

The SH7/Arapahoe Avenue bridge replacement project includes multi-use paths on both sides of the roadway which will provide clear and direct multimodal connections to the existing and adjacent pedestrian, bicycle and transit stop facilities and services and are within the Boulder urban center.

MV objective 6a	**Improve air quality and reduce greenhouse gas emissions**.

4. Will this project help reduce ground-level ozone, greenhouse gas emissions, carbon monoxide, particulate matter, or other air pollutants? ☒ Yes ☐ No

Describe, *including supporting quantitative analysis*

The SH7/Arapahoe Avenue project supports and encourages the shift towards active transportation which supports a reduction in greenhouse gas (GhG) emissions.

MV objective 7b	**Connect people to natural resource or recreational areas**.

5. Will this project help complete missing links in the regional trail and greenways network or improve other multimodal connections that increase accessibility to our region's open space assets? ☒ Yes ☐ No

Describe, *including supporting quantitative analysis*

This project expands the connection from the intersecting Boulder Greenways system to and from the SH7/Arapahoe Avenue corridor and allows residents and visitors to easily access this walking and bicycling path system through the multimodal network.

MV objective 10	**Increase access to amenities that support healthy, active choices.**

6. Will this project expand opportunities for residents to lead healthy and active lifestyles? ☒ Yes ☐ No

Describe, *including supporting quantitative analysis*

The improvements supports the active transportation modes of walking and bicycling.

MV objective 13	**Improve access to opportunity**.

7. Will this project help reduce critical health, education, income, and opportunity disparities by promoting reliable transportation connections to key destinations and other amenities? ☒ Yes ☐ No

Describe, *including supporting quantitative analysis*

Providing a multimodal transportation network that is designed to appeal to residents, employees and visitors of a wider range of ages and abilities connecting is anticipated to promote reliable transportation connections to local and regional transit service and key destinations and employers along SH7/Arapahoe Avenue including Boulder Community Health, Ball Aerospace, the central Boulder business district and nearby Flatirons Business Park and University of Colorado.

MV objective 14	**Improve the region's competitive position**.

8. Will this project help support and contribute to the growth of the subregion's economic health and vitality? ☒ Yes ☐ No

Describe, *including supporting quantitative analysis*

The project's multi-use path system connections to local and regional transit increases options for residents and employees to this employment center which includes regional employers such as the University of Colorado, Boulder Community Health, Ball Aerospace and the Flatirons Business Park.

D. Project Leveraging

WEIGHT **10%**

9. What percent of outside funding sources (non-DRCOG-allocated Subregional Share funding) does this project have?	30%	60%+ outside funding sources .....High 30-59% .....Medium 29% and below .....Low

Part 3 Project Data Worksheet – Calculations and Estimates

(Complete all subsections applicable to the project)

A. Transit Use

1.	Current ridership weekday boardings	0
2.	Population and Employment	

Year	Population within 1 mile	Employment within 1 mile	Total Pop and Employ within 1 mile
2020	0	0	**0**
2040	0	0	**0**

Transit Use Calculations	Year of Opening	2040 Weekday Estimate
3. Enter estimated additional daily transit boardings after project is completed. *(Using 50% growth above year of opening for 2040 value, unless justified)* *Provide supporting documentation as part of application submittal*	0	0
4. Enter number of the additional transit boardings (from #3 above) that were previously using a different transit route. (Example: **{#3 X 25%}** *or other percent, if justified)*	0	0
5. Enter number of the new transit boardings (from #3 above) that were previously using other non-SOV modes (walk, bicycle, HOV, etc.) (Example: **{#3 X 25%}** *or other percent, if justified)*	0	0
6. = Number of SOV one-way trips reduced per day (#3 – #4 – #5)	**0**	**0**
7. Enter the value of **{#6 x 9 miles}**. (= **the VMT reduced per day**) *(Values other than the default 9 miles must be justified by sponsor; e.g., 15 miles for regional service or 6 miles for local service)*	0	0
8. = Number of pounds GHG emissions reduced (#7 x 0.95 lbs.)	**0**	**0**
9. If values would be distinctly greater for weekends, describe the magnitude of difference:		
10. If different values other than the suggested are used, please explain here:		

B. Bicycle Use

1.	Current weekday bicyclists	1,030
2.	Population and Employment	

Year	Population within 1 mile	Employment within 1 mile	Total Pop and Employ within 1 mile
2020	30,262	48,684	**78,946**
2040	31,545	61,220	**92,765**

Bicycle Use Calculations	Year of Opening	2040 Weekday Estimate
3. Enter estimated additional weekday one-way bicycle trips on the facility after project is completed.	78	788
4. Enter number of the bicycle trips (in #3 above) that will be diverting from a different bicycling route. (Example: **{#3 X 50%}** *or other percent, if justified)*	39	394
5. = Initial number of new bicycle trips from project (#3 – #4)	39	394
6. Enter number of the new trips produced (from #5 above) that are replacing an SOV trip. (Example: **{#5 X 30%}** *(or other percent, if justified)*	12	118
7. = Number of SOV trips reduced per day (#5 - #6)	27	276
8. Enter the value of **{#7 x 2 miles}**. (= the VMT reduced per day) *(Values other than 2 miles must be justified by sponsor)*	54	552
9. = Number of pounds GHG emissions reduced (#8 x 0.95 lbs.)	51	524
10. If values would be distinctly greater for weekends, describe the magnitude of difference:		
11. If different values other than the suggested are used, please explain here:		

C. Pedestrian Use

1. Current weekday pedestrians (include users of all non-pedaled devices)	410
2. Population and Employment	

Year	Population within 1 mile	Employment within 1 mile	Total Pop and Employ within 1 mile
2020	30,262	48,684	**78,946**
2040	31,545	61,220	**92,765**

Pedestrian Use Calculations	Year of Opening	2040 Weekday Estimate
3. Enter estimated additional weekday pedestrian one-way trips on the facility after project is completed	10	102
4. Enter number of the new pedestrian trips (in #3 above) that will be diverting from a different walking route (Example: **{#3 X 50%}** *or other percent, if justified)*	5	51
5. = Number of new trips from project (#3 – #4)	5	51
6. Enter number of the new trips produced (from #5 above) that are replacing an SOV trip. (Example: **{#5 X 30%}** *or other percent, if justified)*	1	15
7. = Number of SOV trips reduced per day (#5 - #6)	4	36
12. Enter the value of **{#7 x .4 miles}**. (**= the VMT reduced per day**) *(Values other than .4 miles must be justified by sponsor)*	1	14

8. = Number of pounds GHG emissions reduced (#8 x 0.95 lbs.)	0	13
9. If values would be distinctly greater for weekends, describe the magnitude of difference:		
10. If different values other than the suggested are used, please explain here:		

D. Vulnerable Populations

	Vulnerable Populations	Population within 1 mile
Use Current Census Data	**1.** Persons over age 65	2,817
	2. Minority persons	9,565
	3. Low-Income households	3,866
	4. Linguistically-challenged persons	755
	5. Individuals with disabilities	3,415
	6. Households without a motor vehicle	2,015
	7. Children ages 6-17	2,531
	8. Health service facilities served by project	18

E. Travel Delay *(Operational and Congestion Reduction)*

Sponsor must use industry standard Highway Capacity Manual (HCM) based software programs and procedures as a basis to calculate estimated weekday travel delay benefits. *DRCOG staff may be able to use the Regional Travel Model to develop estimates for certain types of large-scale projects.*

1. Current ADT (average daily traffic volume) on applicable segments	0
2. 2040 ADT estimate	0
3. Current weekday vehicle hours of delay (VHD) (before project)	0
Travel Delay Calculations	**Year of Opening**
4. Enter calculated future weekday VHD (after project)	0
5. Enter value of **{#3 - #4} =** Reduced VHD	0
6. Enter value of **{#5 X 1.4}** = **Reduced person hours of delay** *(Value higher than 1.4 due to high transit ridership must be justified by sponsor)*	0
7. **After project peak hour congested average travel time reduction** per vehicle (includes persons, transit passengers, freight, and service equipment carried by vehicles). *If applicable, denote unique travel time reduction for certain types of vehicles*	0
8. If values would be distinctly different for weekend days or special events, describe the magnitude of difference.	
9. If different values other than the suggested are used, please explain here:	

F. Traffic Crash Reduction

1. Provide the current number of crashes involving motor vehicles, bicyclists, and pedestrians *(most recent **5-year** period of data)*		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	6	
Property Damage Only crashes	21	
2. Estimated reduction in crashes <u>applicable to the project scope</u> *(per the five-year period used above)*		
Fatal crashes reduced	0	
Serious Injury crashes reduced	1	
Other Injury crashes reduced	0	
Property Damage Only crashes reduced	0	

G. Facility Condition

Sponsor must use a current industry-accepted pavement condition method or system and calculate the average condition across all sections of pavement being replaced or modified.
Applicants will rate as: Excellent, Good, Fair, or Poor

Roadway Pavement	
1. Current roadway pavement condition	Choose an item
2. Describe current pavement issues and how the project will address them.	
3. Average Daily User Volume	0
Bicycle/Pedestrian/Other Facility	
4. Current bicycle/pedestrian/other facility condition	Choose an item
5. Describe current condition issues and how the project will address them.	
6. Average Daily User Volume	0

H. Bridge Improvements

1. Current bridge structural condition from CDOT	
2. Describe current condition issues and how the project will address them.	
3. Other functional obsolescence issues to be addressed by project	
4. Average Daily User Volume over bridge	0

I. Other Beneficial Variables *(identified and calculated by the sponsor)*	
1.	
2.	
3.	

J. Disbenefits or Negative Impacts *(identified and calculated by the sponsor)*	
1. Increase in VMT? *If yes, describe scale of expected increase*	☐ Yes ☐ No
2. Negative impact on vulnerable populations	
3. Other:	