

Part 1

Base Information

1. Project Title **I-76/Baseline Road Interchange Signalization**
2. Project *Start/End* points or Geographic Area
Provide a map with submittal, as appropriate
I-76/Baseline Road interchange, including overpass and eastbound and westbound ramp intersections. See attached
3. Project Sponsor *(entity that will construct/ complete and be financially responsible for the project)*
Town of Lochbuie
Steve Stamey
Town Administrator
(303) 655-9308
sstamey@lochbuie.org
4. Project Contact Person, Title, Phone Number, and Email
5. Does this project touch CDOT Right-of-Way, involve a CDOT roadway, access RTD property, or request RTD involvement to operate service?

X Yes ☐ No

If yes, provide applicable concurrence documentation with submittal

☐ [DRCOG 2040 Fiscally Constrained Regional Transportation Plan \(2040 FC RTP\)](#)

☐ Local plan:

X Other(s):
The project was identified in several traffic studies for planned development projects along Baseline Road and is being pursued to address current queuing issues on the eastbound off-ramp. See attached map for examples of typical queuing issues.
Provide link to document/s and referenced page number if possible, or provide documentation with submittal
6. What planning document(s) identifies this project?
7. Identify the project's key elements.

☐ Rapid Transit Capacity (2040 FC RTP)
☐ Transit Other:
☐ Bicycle Facility
☐ Pedestrian Facility
☒ Safety Improvements
☐ Roadway Capacity or Managed Lanes (2040 FC RTP)
☒ 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?

Freeway safety and arterial congestion

The Town of Lochbuie and City of Brighton are experiencing significant growth at this time, and the I-76/Baseline Road interchange is reaching the end of its operational lifespan under its current configuration. During the afternoon peak period queues extend back to the I-76 mainline from the EB ramp, creating safety issues on I-76 and impeding

lengthy delays to local traffic. In addition to the off-ramp queuing, westbound Baseline Road traffic turning left onto the Westbound I-76 on-ramp must wait for a gap in eastbound traffic; this issue will get much worse in the near future when trucks from the 76 Commercial development along the East Frontage Road are added to the road system.

The interchange complex includes four intersections: the West Frontage Road, the Westbound I-76 Ramps, the Eastbound I-76 Ramps and the East Frontage Road. The Town is currently installing a roundabout at the West Frontage Road intersection and widening Baseline Road to 4 lanes west of the interchange to address capacity issues at those locations.

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

This project would address the capacity issues at the interchange itself by signalizing the I-76 Westbound Ramps/Baseline Road intersection, restriping the I-76 overpass to provide a center left turn lane, and signalizing the I-76 Eastbound Ramps/Baseline Road intersection.

10. What is the status of the proposed project?

The project is currently in the conceptual design phase. The nature of the improvements (signalization and restriping) are relatively simple in nature, so final design for the project could be completed within 6 months.

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

X Yes ☐ No

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

Partial funding would be acceptable provided it is sufficient to cover one of the project's 2 primary elements:

- Signalization of the westbound ramp
- Signalization of the eastbound ramp

A. Project Financial Information and Funding Request

1. Total Project Cost		\$1,750,000
2. Total amount of DRCOG Subregional Share Funding Request	\$700,000	40 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
Town of Lochbuie	\$200,000	11%
CDOT	\$150,000	9%
Adams County Subregion	\$700,000	40%
Total amount of funding provided by other funding partners (private, local, state, Regional, or federal)	\$1,050,000	60%

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	\$	\$200,000	\$1,200,000	\$	\$1,400,000
State Funds	\$	\$	\$150,000	\$	\$200,000

Local Funds	\$	\$200,000	\$	\$	\$150,000
Total Funding	\$	\$400,000	\$1,350,000	\$0	\$1,750,000
4. Phase to be Initiated <i>Choose from Design, ENV, ROW, CON, Study, Service, Equip. Purchase, Other</i>		ENV, Design	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.

X

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?

The Town of Lochbuie is located on the west side of I-76 approximately 25 miles northeast of downtown Denver, at the outer edge of the metro area. The I-76/Baseline Road (WCR 2) interchange serves as the Town's primary access to the Interstate, and thus provide a critical regional connection between the Town and the jobs, medical facilities, commercial services and recreation that the metro area offers.

The Town of Lochbuie and City of Brighton are experiencing significant growth at this time, and the I-76/Baseline Road interchange is reaching the end of its operational lifespan under its current configuration. During the afternoon peak period queues extend back to the I-76 mainline from the EB ramp, creating safety issues on I-76 and imparting lengthy delays to local traffic. In addition to the off-ramp queuing, westbound Baseline Road traffic turning left onto the Westbound I-76 on-ramp must wait for a gap in eastbound traffic; this issue will get much worse in the near future when trucks from the 76 Commercial development along the East Frontage Road are added to the road system.

The interchange complex includes four intersections: the West Frontage Road, the Westbound I-76 Ramps, the Eastbound I-76 Ramps and the East Frontage Road. The Town is currently installing a roundabout at the West Frontage Road intersection and widening Baseline Road to 4 lanes west of the interchange to address capacity issues at those locations. This project is therefore the next logical step to providing a seamless connection between the Town and the regional freeway system

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

Yes. Baseline Road is the county line between Weld County and Adams County. The northwest and southwest quadrants of the interchange are within the Town of Lochbuie, the northeast quadrant is unincorporated Weld County, the southeast quadrant is within the City of Brighton, and the area further east and south of Baseline is unincorporated Adams County. Thus, the improvements would benefit the following municipalities:

- Weld County
- Adams County
- City of Brighton
- Town of Lochbuie

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

Yes. Baseline Road is the county line between Weld County and Adams County. Thus the project benefits the following subregions:

- ADCOG
- SW Weld County

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

This project would address the capacity issues at the interchange itself by signalizing the I-76 Westbound Ramps/Baseline Road intersection, restriping the I-76 overpass to provide a center left turn lane, and signalizing the I-76 Eastbound Ramps/Baseline Road intersection. The signals will eliminate the issue of queues extending back to the I-25 mainline and significantly reduce the travel delays at the ramp intersections.

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?**

As noted in #1 above, the interchange serves as the key connection between the Town of Lochbuie and metro-area jobs, medical facilities, commercial services and recreation. The improvements will eliminate delays faced by all interchange user, effectively removing any travel barriers faced by those users.

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

Not applicable. The area is located at the extreme northeast corner of the metro area, so it does not have transit service. Furthermore, the project does not include pedestrian or bicycle facilities as there are no pedestrian or bicycle attractors/generators near the interchange that generate trips via those modes.

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

This project will be jointly funded between CDOT, ADCOG, SW Weld County COG and the Town of Lochbuie, with a portion of the Town of Lochbuie's funding coming from private development.

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)**.

The Town of Lochbuie currently has no medical facilities. The nearest emergency room is located at the Platte Valley Regional Medical Center, which is a full-service hospital located off I-76 south of Bromley Lane; emergency vehicles use the interchange to access that facility, so they are currently impeded by traffic and queuing at the interchange. The improvements at the interchange will eliminate existing delays for emergency vehicles at the interchange and ensure quicker access to the hospital.

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

Not Applicable. The project addresses vehicle-focused issues and does not include multimodal elements. As noted in the response to Question A.6 above, there is no transit service in the area, and pedestrian and bicycle mode share is minimal around the interchange

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

During the afternoon peak period, traffic at the eastbound ramp Intersection extends down the ramp and onto the I-76 mainline, creating a significant safety hazard between the stopped traffic heading to Baseline Road and the through traffic travelling at 75-80 mph on mainline I-76. The signal and turn lanes at the ramp intersection with Baseline Road will eliminate this condition.

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?

X Yes ☐ No

Describe, including supporting quantitative analysis

The Town of Lochbuie and City of Brighton are experiencing significant growth at this time, and the existing interchange is reaching the end of its operational lifespan. The Town of Lochbuie is doing their part to address this growth by widening Baseline Road to four lanes west of the interchange, and installing a roundabout at the West Frontage Road intersection. However, without improvements to the interchange, additional planned development in the area would face considerable delays at the interchange ramp terminals and create queues that regularly extend back onto the I-76 mainline. With the planned improvements, the interchange will be able to accommodate this planned growth.

Current Interchange Delay: 47 vehicle-hours per weekday

Interchange Delay with the Improvements: 17 vehicle-hours per weekday

[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

While the project is not located within an Urban Center, the planned new development in the Town of Lochbuie is primarily single family homes, and the improvements will ensure that this housing stock (over 1,000 additional homes have been approved to date that would use the interchange) will be more seamlessly connected to the jobs in the metro area.

[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

No. As noted in the response to Question A.6 above, there is no transit service in the area, and pedestrian and bicycle mode share is minimal around the interchange. As a result, the project addresses vehicle-focused issues and does not include multimodal elements.

[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

During the afternoon peak period, traffic at the Eastbound Ramp intersection queues down the ramp and results in extensive vehicle delay. In addition to the off-ramp queuing, westbound WCR 2 traffic turning left onto the Westbound I-76 on-ramp must wait for a gap in eastbound traffic; this issue will get much worse in the near future when trucks from the 76 Commercial development along the East Frontage Road are added to the road system. The turn lanes on WCR 2 across the overpass will allow westbound traffic to avoid getting stuck behind those left turning vehicles. In both cases, the delay reductions from the proposed improvements will result in a corresponding reduction in air pollution.

Current emissions at the Interchange: 6.6 kg CO, 1.3 kg NOx, 1.6 kg VOC

Interchange emissions with the Improvements: 4.5 kg CO, 0.9 kg NOx, 1.0 kg VOC

[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

No. As noted in the response to Question A.6 above, pedestrian and bicycle mode share is minimal around the interchange. As a result, the project addresses vehicle-focused issues and does not include multimodal elements.

[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

Barr Lake State Park, with its system of trails, is located off I-76 south of 144th Avenue, and nearly all Town residents use the interchange to access that facility. Thus, the project will provide improved access to recreation.

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

The project provides the following benefits:

Improved Access to Medical Facilities: The nearest emergency room is located at the Platte Valley regional medical center, a full-service hospital located off I-76 south of Bromley Lane; emergency vehicles use the interchange to access that facility. The improvements at the interchange will eliminate existing delays at the interchange and ensure quicker access to the hospital for emergency vehicles and town residents with non-emergency medical needs.

Improved Access to Employment. Nearly all of the jobs in the metro area are located south of Lochbuie (Commerce City, Downtown Denver, Aurora, DIA, etc.) so most town residents use the I-76 interchange as part of their work commute.

Improved Access to Commercial Services. Prairie Center, the major commercial center for the northeast metro area is located off I-76 south of Bromley Lane, so nearly all Town residents use the interchange to access that facility.

Improved Access to Recreation. Barr Lake State Park is located off I-76 south of 144th Avenue, so nearly all Town residents use the interchange to access that facility.

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

Reasonably priced housing is a critical need in the metro area. Because Lochbuie is located on the outer fringe of the metro area, home prices tend to be lower than elsewhere in the metro area. As noted above the planned new development in the Town of Lochbuie is primarily single family homes, so the improvements will ensure that this housing stock (over 1,000 additional homes have been approved to date that would use the interchange) will be more accessible and desirable to those working elsewhere in the metro area.

D. Project Leveraging

WEIGHT 10%

- | | | |
|--|-----|--|
| 9. What percent of outside funding sources (non-DRCOG-allocated Subregional Share funding) does this project have? | 20% | 60%+ outside funding sourcesHigh
30-59%Medium
29% and belowLow |
|--|-----|--|

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	6,000	100	6,100
2040	8,900	200	9,100

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:
N/A

10. If different values other than the suggested are used, please explain here:

This area is not served by transit.

B. Bicycle Use

1. Current weekday bicyclists 0
2. Population and Employment

Year	Population within 1 mile	Employment within 1 mile	Total Pop and Employ within 1 mile
2020	6,000	100	6,100
2040	8,900	200	9,100

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.	0	0
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)	0	0
5. = Initial number of new bicycle trips from project (#3 – #4)	0	0
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)	0	0
7. = Number of SOV trips reduced per day (#5 - #6)	0	0
8. Enter the value of {#7 x 2 miles}. (= the VMT reduced per day) (Values other than 2 miles must be justified by sponsor)	0	0
9. = Number of pounds GHG emissions reduced (#8 x 0.95 lbs.)	0	0
10. If values would be distinctly greater for weekends, describe the magnitude of difference: There may be a few recreational bicycle trips through the interchange on the weekend (10-15 per day), but this area does not experience significant bicycle traffic.		
11. If different values other than the suggested are used, please explain here: N/A		

C. Pedestrian Use

- Current weekday pedestrians (include users of all non-pedaled devices) 0
- Population and Employment

Year	Population within 1 mile	Employment within 1 mile	Total Pop and Employ within 1 mile
2020	6,000	100	6,100
2040	8,900	200	9,200

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	0	0
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)	0	0
5. = Number of new trips from project (#3 – #4)	0	0
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)	0	0
7. = Number of SOV trips reduced per day (#5 - #6)	0	0

12. Enter the value of {#7 x .4 miles}. (= the VMT reduced per day)

(Values other than .4 miles must be justified by sponsor)

0

0

8. = Number of pounds GHG emissions reduced (#8 x 0.95 lbs.)

0

0

9. If values would be distinctly greater for weekends, describe the magnitude of difference:

N/A

10. If different values other than the suggested are used, please explain here:

There are no pedestrian generators/attractors in the vicinity of the interchange, so there is no pedestrian traffic across it.

D. Vulnerable Populations

	Vulnerable Populations	Population within 1 mile
Use Current Census Data	1. Persons over age 65	415
	2. Minority persons	3,460
	3. Low-Income households	685 out of 1,750
	4. Linguistically-challenged persons	615
	5. Individuals with disabilities	690
	6. Households without a motor vehicle	70 out of 1,750
	7. Children ages 6-17	1,830
	8. Health service facilities served by project	0

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	7,500 AWDT on overpass
2. 2040 ADT estimate	19,700 AWDT
3. Current weekday vehicle hours of delay (VHD) (before project)	47 hrs

Travel Delay Calculations	Year of Opening
4. Enter calculated future weekday VHD (after project)	17 hrs
5. Enter value of {#3 - #4} = Reduced VHD	30 hrs
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)	42 hrs
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	24 seconds per vehicle through the interchange

8. If values would be distinctly different for weekend days or special events, describe the magnitude of difference.

Congestion is currently not an issue at the interchange on the weekends. There are no special events in the area that generate significant traffic.

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*)

Fatal crashes	0
Serious Injury crashes	1
Other Injury crashes	5
Property Damage Only crashes	40

2. Estimated reduction in crashes applicable to the project scope
(*per the five-year period used above*)

CRF = 0.44 (CRF Clearinghouse value for signalization, all crash types and severity)

Fatal crashes reduced	0
Serious Injury crashes reduced	0.4
Other Injury crashes reduced	2.2
Property Damage Only crashes reduced	17.6

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*).

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	Good
2. Describe current pavement issues and how the project will address them. There are no current pavement issues that need to be addressed by the project	
3. Average Daily User Volume	7,500 AWDT

Bicycle/Pedestrian/Other Facility

4. Current bicycle/pedestrian/other facility condition	Good
5. Describe current condition issues and how the project will address them. Bicycles and pedestrians use the existing 8-10-foot wide paved shoulders on the overpass and will continue to do so with the project. The re-striped bridge will have 4 foot paved shoulders to accommodate pedestrians and bicyclists	10-15 bicyclists on summer weekends
6. Average Daily User Volume	

H. Bridge Improvements

1. Current bridge structural condition from CDOT

Good

2. Describe current condition issues and how the project will address them.

There are no current condition issues with the bridge.

3. Other functional obsolescence issues to be addressed by project

The bridge will be restriped to 3 lanes to address left turn queuing issues across the structure. To address capacity issues at the ramp terminal intersections, both will be signalized.

4. Average Daily User Volume over bridge

7,500 AWDT

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 X No

2. Negative impact on vulnerable populations

None.

3. Other:

None