Part 1 Base Information

1. Project Title	**Peoria Street / Easter Avenue Alternative Intersection Improvements**
2. Project *Start/End* points or Geographic Area *Provide a map with submittal, as appropriate*	(See Map) - Exhibit 1 Peoria Street / Easter Avenue Intersection in Arapahoe County
3. Project Sponsor *(entity that will construct/ complete and be financially responsible for the project)*	Arapahoe County
4. Project Contact Person, Title, Phone Number, and Email	Bryan Weimer, Director, Public Works and Development 720.874.6500 bweimer@arapahoegov.com
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:

Arapahoe County 2035 Transportation Plan (http://www.arapahoegov.com/948/2035-Transportation-Plan), Arapahoe Road Corridor Plan https:/www.codot.gov/projects/archived-project-sites/I25-Arapahoe/arapahoe-corridor-study

City of Centennial Transportation Master Plan (http://www.centennialco.gov/Community-Development/city-wide-studies.aspx), and

Havana Street / Easter Avenue Intersection Alternatives Analysis Report.

☐ Other(s):

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?

The Arapahoe Road corridor is the primary east-west arterial between I-25 and Parker Road that serves the mobility needs of the public. Each year the corridor becomes more congested, a concern for which Arapahoe County and other regional stakeholders have been evaluating solutions to effectively serve the east-west mobility of commuters and residents. The current route requires several turn movements in order to negotiate around the Centennial Airport. As such, there are two potential bottleneck locations that have been identified that could preclude a continuous east-west route parallel to Arapahoe Road, one of which includes the Peoria Street / Easter Avenue intersection. Alternatives for full reconstruction of Peoria Street / Easter Avenue to prioritize the northbound-to-westbound and eastbound-to-southbound movements, were established in the Peoria Street / Easter Avenue Intersection Alternatives Analysis, along with a corridor analysis to ensure the recommended alternative did not adversely impact the other intersections along the corridor.

The parallel reliever route to Arapahoe Road is a proposed six-lane principal arterial street that will extend from Dry Creek / I-25 on the west to Broncos Parkway / Parker Road on the east. Within this corridor is a physical barrier outlined by the Centennial Airport property which precludes a straight roadway along the Dry Creek Road / Bronco Parkway alignment. As a result, the intersection of Havana Street / Easter Avenue and Peoria Street / Easter Avenue have north-south through movements that do not facilitate east-west mobility.

The alternative intersection improvement at Peoria Street and Easter Avenue will improve mobility infrastructure and services for vulnerable populations – by reducing congestion through the intersection. It will also improve transportation and security – by reducing congestion and left-turn related crashes traveling through the intersection.

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

The Intersection Alternatives Analysis Report for Peoria Street and Easter Avenue Final Report, completed in 2015, identifies the project recommendations. The alternative intersection is recommended to improve existing and future traffic flow and safety for the overall proposed Dry Creek corridor. This project will move the recommendation through design and construction of the proposed displaced left turn intersection. See Appendix B, Figure 3.

10. What is the status of the proposed project?

The Intersection Alternatives Analysis Report for Peoria Street and Easter Avenue Final Report, completed in 2015, analyzed alternatives for improving traffic operations, safety, and accessibility at and around the Peoria Street and Easter Avenue intersection. The study recommended the improvements to be included in the project. This project is the next step in implementation of improvements at the intersection.

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.

It is our understanding that reducing the amount of federal funding is considered at the end of the evaluation and recommendation process. However, if this were to occur there are several options that the funding partners would consider to move the project forward in some fashion. This could include allocation reallocation of partnership funding for the various partners, value engineering, and potential modification of the scope but still meet the goals of the project.

A. Project Financial Information and Funding Request

1. Total Project Cost		**$7,527,000**
2. Total amount of DRCOG Subregional Share Funding Request	**$5,193,630**	**69%** 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**
Arapahoe County	$777,790	10%
Dove Valley Metro	$777,790	10%
DSTMA / SPIMD	$777,790	10%
	$	
	$	
	$	
Total amount of funding provided by other funding partners *(private, local, state, Regional, or federal)*	**$2,333,370**	31%

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	$	$416,181	$321,564	$4,455,885	**$5,193,630**
State Funds	$	$	$	$	**$0**
Local Funds	$	$186,980	$144,471	$2,001,919	**$2,333,370**
Total Funding	$0	$603,161	$466,035	$6,457,804	**$7,527,000**
4. Phase to be Initiated *Choose from Design, ENV, ROW, CON, Study, Service, Equip. Purchase, Other*	Choose an item	Design	ROW	CON	

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?

Presently the southeast side of the metro area lacks options for east-west connectivity due to the physical barriers of Cherry Creek Sate Park to the north and Centennial Airport to the south. As a result Arapahoe Road, being the only continuous east-west connection in that span is chronically congested. In an effort to alleviate congestion on Arapahoe Road, and create more regional mobility with reliable travel times, Arapahoe County in coordination with the City of Centennial have come up with a series of projects to create an alternate east-west corridor through this area spanning form I-25 at Dry Creek to Parker Road. The resulting projects include the I-25 Dry Creek Study that serves to improve the Dry Creek and I-25 interchange and immediate corridor around it. That study identified two bottleneck locations along Easter Avenue and was the catalyst for two subsequent studies. One of these locations is the Havana Street and Easter Avenue intersection, and the other, the subject of this application, the Peoria Street and Easter Avenue intersection.

In order to create a continuous corridor with reliable travel times, that will accommodate existing traffic plus potentially up to 11% of Arapahoe Road traffic, this intersection was identified to be studied and for a capable preferred alternative be found. The study looked at the intersection as part of the larger scope of the corridor. It took into account how any alternatives may impact, positively or negatively, the corridor as a whole.

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

Yes. This project is part of a larger mobility effort including multiple jurisdictions in an effort to create a seamless east-west corridor from I-25 to Parker Road. This intersection was identified as a bottleneck location along the proposed corridor. While the intersection itself is split between Arapahoe County on the west and City of Centennial on the east, the larger scope of the improvements also benefit; City of Aurora, City of Englewood, City of Greenwood Village, Town of Foxfield, Town of Parker, Douglas County, Arapahoe County, Centennial Airport, Dove Valley, Southeast Public Improvement Metropolitan District (SPIMD), Inverness, and Denver Tech Center. Benefits to each of these entities is anticipated through reduced congestion and improved reliability of travel times.

From the City of Centennial Master Plan, it is anticipated that traffic volumes at this intersection will increase by 77% from 2013 existing volumes to the design year 2035. It's anticipated that the Easter Avenue corridor between Havana Street and Peoria Street will experience extended travel times over 14 minutes and 15 minutes for eastbound vehicles in the morning and evening, respectively, corresponding to low average speeds. Westbound vehicle travel times will exceed 3 minutes both in the morning and evening, with travel speeds of 25 and 23 mph respectively. The Peoria Street corridor travel times will be over 2 minutes and almost 8 minutes for northbound vehicles in the morning and evening respectively, which equates to average vehicle speeds of 27 and 8 mph. Southbound vehicle travel times will be over 5.5 minutes and almost 9 minutes in the morning and evening respectively, with travel speeds of 10 and 7 mph.

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

Yes. This project is located in the subregion of Arapahoe County, and will benefit the subregions of Arapahoe County and Douglas County. The larger scope of the project includes an east-west corridor from I-25 to Parker Road. Many Douglas County residents utilize this intersection while traveling along Peoria Street / Broncos Parkway commuting to and from Town of Parker and other Douglas County points south from there. By improving the intersection, the corridor may handle this traffic more efficiently.

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

This project will alleviate the existing bottleneck at the intersection of Easter Avenue and Peoria Street. As a piece of the larger regional mobility project, it will aid in reaching the goal of allowing for a more fluid parallel alternative to Arapahoe Road.

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?

Currently, Arapahoe Road is the main east-west corridor for the area and is congested with few viable alternatives to alleviate the congestion which are all disjointed with no continuous corridor options. This project is a piece to a larger regional mobility effort to allow for a continuous and reliable east-west corridor. It is projected to accomplice with the proposed east west corridor in alleviating Arapahoe Road of up to 11% of traffic volume.

The intersection itself has a diverse area immediately surrounding it with the South Suburban Parks and Recreation District Family Sports Center in the northwest corner, business parks on the east side, and the Centennial Airport located southwest. The corridor as a whole would be a commuter route with diverse land use throughout. By improving the corridor, access to multiple transportation modes are made available, from light rail at the Dry Creek Station on the west side of the corridor to access to trails including the Broncos Parkway Trailhead for the Cherry Creek Trail located on the east side of the corridor. The improved intersection mitigates a potential bottleneck allowing for continuous mobility and reliable travel times along the corridor.

According to US Census data, approximately 17,889 people live within the area of the corridor. Of those, 10.79% (1,930) live below the poverty level, 5.21% (935) have one or more disability, 26% (4,617) are a minority, 7.21% (1,293) are age 65 or over, and 21.12% (3,788) are between the ages of 5 and 17, 3.44% (616) speak limited English, and 12.55% (3,463) did not work in the past 12 months.

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

As stated above, the intersection is one piece of a larger mobility project. The proposed corridor will go from I-25 at Dry Creek to Parker Road creating a parallel option to Arapahoe Road. Another piece of the larger project includes the I-25/Dry Creek Road Interchange and Corridor Study, which identifies multiple improvements for pedestrians, bicyclists, and transit elements.

Additional Pedestrian and Bicyclist Elements

The goal of the corridor as a whole is in terms of different travel modes are described below.

In addition to the multi-use paths, grade separations, and sharrow pavement markings, further safety related crossing improvements are recommended. As intersections are modified for vehicular lanes, crosswalk markings would be modified to optimize pedestrian and bicyclist visibility. At crosswalks crossing free right turn movements (northbound Chester Street at Dry Creek Road, westbound Dry
Creek Road at Northbound I-25 ramp, eastbound Dry Creek Road at Inverness Drive East, northbound Havana Street at Easter Avenue), rapid flashing beacons may be installed. Also, yellow flashing arrows to encourage right turning drivers to yield to pedestrians and bicyclists would be installed on all approaches at Yosemite Street, the eastbound, westbound, and southbound approaches at Alton Court/Chester Street, all approaches at Inverness Drive West, the northbound approach at Inverness Drive East, and the northbound approach at Geddes Avenue. Yellow flashing arrows are part of standard signal heads and are activated during the pedestrian walk phase.

With the pedestrian bridge at the Alton Court/Chester Street intersection, pedestrian crossings will be prohibited at the traffic signal. Instead, signage and physical barriers will encourage people to use the pedestrian bridges to cross the road. A number of improvements can be put in place to prevent pedestrians from crossing mid-block or at the intersection:

- Making the pedestrian bridges attractive to users (good lighting, clear wayfinding signage, blue safety phones, etc.)
- Signage at all four corners of the intersection communicating to pedestrians to use the pedestrian bridge instead of crossing at grade
- Physical barriers at the corners (landscaping or railings) to prevent people from walking into the street
- Extending the median into and past the stop bar with physical barriers (landscaping or railings) with signage communicating to pedestrians to use the pedestrian bridge

While these recommendations include a bicycle facility on the west side of I-25, it does not identify details associated with a north-south bicycle facility on the east side of I-25. Connections on both sides of I-25 were recommended in the *South I-25 Urban Corridor Study.* Arapahoe County is currently conducting their Bicycle and Pedestrian Master Plan and coordinating with the necessary stakeholders to identify the best location for this north-south connection. Possible alignments in addition to Clinton Street include Inverness Drive East and a multi-use path along Cottonwood Creek.

Transit Elements

A potential transit circulator service serving neighborhood travel to the Dry Creek LRT Station was discussed early in the study. Concurrently, the City of Centennial was working with Lyft, Xerox, and the Denver South TMA to develop a Dry Creek First and Last Mile pilot test project using technology platforms, such as ridesharing apps, to provide on-demand first and last mile service to the Dry Creek LRT Station.

The proposed pilot service will be provided by Lyft for local residents and commuters for a six-month pilot period, tentatively scheduled from August 2016 to February 2017. Rides will be requested through Lyft's existing mobile platform or through Xerox's Go Denver integrated interface. Based on estimated Lyft fares, this model should serve two to three times the current ridership for the same cost. RTD will assess the usage and costs over this pilot period and then consider extending the service, perhaps in lieu of, or supplemental to, their current call-n-ride service.

Because this pilot program is underway and looks to be a potentially successful model, the recommendation for this study is to embrace the proposed service and work to help make it a success through agency supportive communications.

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

Arapahoe County partnered with Dove Valley Metro, and DSTMA / SPIMD to provide funding up to 31% of the total project cost. With each partner allocating a third of that sum.

- Arapahoe County - $777,790
- Dove Valley Metro - $777,790
- DSTMA / SPIMD - $777,790

B. DRCOG Board-approved Metro Vision TIP Focus Areas

WEIGHT 25%

*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).**

Populations of vulnerable individuals reside within one mile of the project. Currently living within one mile of the project are:

- 1,303 adults over the age of 65
- 7,030 minority persons
- 577 persons living in poverty
- 533 linguistically-challenged persons
- 935 persons with a disability
- 128 households without access to a motor vehicle

The area within one mile of the intersection includes an emergency room, and urgent care, and seven other health facilitites. There are also two regional hospitals located within the larger area. Regionally, this project would allow better access to Parker Adventist Hospital located near Parker Road and E-470 and Sky Ridge located near Lincoln and I-25. The intersection relieves a potential bottleneck at Peoria and Easter allowing for more reliable travel times, making the proposed corridor a viable east west alternative to Arapahoe Road. This will allow an ease in congestion for both corridors, and facilitate east west traffic in case of closed lanes due to emergency on Arapahoe Road.

Although, some of the facilites are located on Arapahoe Road, there is access to them via the proposed corridor. Coming from points south, or if Arapahoe Road has closed lanes due to emergency, there is alternate, reliable access via the proposed corridor and due to the proposed improvements at Peoria and Easter.

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

Arapahoe Road is a congested corridor, being the only continuous east-west corridor east of I-25 with continued growth in the southeast suburbs. Arapahoe County and its partners aim to alleviate some of this congestion with a parallel continuous alternative from I-25 to Parker Road. In order to create a continuous and reliable corridor, mitigating the potential bottleneck at Peoria and Easter is necessary, and what this project's goal is. The corridor as a whole has the potential to relieve Arapahoe Road of 11% of traffic when completed.

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

By emliminating the left turn movement for northbound and eastbound, the proposed intersection essentially eliminates the possibility for approach turn crashes for vehicles turning left from those directions. This intersection has an overrepresentation of approach turn type crashes. Of the 33 crashes reported over the five year period analyzed, 30 were the result of a vehicle turning left from northbound or eastbound.

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

WEIGHT **15%**

*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 project is part of a larger mobility project which connects the emerging I-25 Corridor urban center with southeast metro suburbs. Presently the only cohesive east-west corridor for this area is Arapahoe Road, which leads to congestion and delays. This project proposes a new parallel reliable alternative to Arapahoe Road from I-25 and Dry Creek to Parker Road.

The immediate area surrounding the intersection had 22,836 employees in 2020, and projected to increase by over 48.9% in 2040 to 34,006 employees. The proposed project will allow for an alternate route for east west traffic and is projected to eliminate 11% of the total traffic from Arapahoe Road as a result. The proposed intersection improvement eliminates a bottleneck in the proposed corridor to allow for consistent and reliable travel times.

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*

Yes, DRCOG identifies the area near I-25 and Dry Creek (and just east of there) as an emerging urban center. With the projected increase in employment south of Arapahoe Road, and increase in housing east of the project, this intersection will enable those commuters a second reliable east west corridor to access the emerging urban center within the boundaries of the proposed corridor. It will also give the motorists a second option to access the DRCOG identified urban center at the Denver Tech Center as well.

The improvements to bike and pedestrian traffic outlined for the corridor allows for these connections, as well as accommodating the Arapahoe County Bicycle and Pedestrian Master Plan vision for the area. Including proposed sidepaths, bike lanes, and bike and ped overpasses/underpasses.

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*

Presently, Arapahoe Road is the only continuous east-west connection east of I-25 in this southeast area. By creating a continuous parallel alernative and mitigating potential bottleneck intersections, the project allows for commuters and truck traffic another option for east-west travel. It will have the possibility to alleviate Arapahoe Road of 11% of its traffic and providing reliable travel times.

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*

By reducing congestion on Arapahoe Road, and alleviating the bottleneck at Peoria & Easter making the new continuous corridor more efficient. This project aims to provide reliable travel times and less congestion resulting in the reduction of ground-level ozone, greenhouse gas emissions, carbon monoxide, particulate matter and other air pollutants.

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*

On the east side of the proposed corridor is the Broncos Parkway Trailhead to Cherry Creek Trail. According to the Arapahoe County Bicycle and Pedestrian Master Plan; Peoria has proposed sidepaths and shared roadways for bicycles; Easter at the intersection and to the west has proposed sidepaths; proposed bike and pedestrain overpass/underpasses are proposed along the corridor at Dry Creek and I-25 and along Broncos Parkway at Blackhawk Street where bike lanes are also proposed connecting to the Arapahoe County Community Park south of Broncos Parkway.

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*

Reduced congestion at this potential bottleneck will improve travel time reliability from I-25 to Parker Road as part of the lalrger mobility project.

It will also improve access to the 9 CDPHE-regulated health service facilities within one mile of the project area.

	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 will improve accessibility for people living in the surrounding area to medical facilities and employment centers by improving the connection between the residential areas surrounding the intersection area and regional activity centers, employment centers, and medical facilities in the area.

	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*

As previously stated, the immediate area around the intersection is expected to grow by 48.9% for the year 2040 for jobs. This adds over 11,170 jobs just to the immediate area surrounding the intersection. Substantial employment growth in the area will lead to this area being a destination of employees. By improving east-west mobility to the area, this project will help ensure reliable travel times for these employees that will contribute to the area's economic growth.

D. Project Leveraging

WEIGHT 20%

9.	What percent of outside funding sources (non-DRCOG-allocated Subregional Share funding) does this project have?	31%	41%+ outside funding sources .....High 31-40% .....Medium 30% 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	19,044	22,836	**41,880**
2040	20,607	34,006	**54,613**

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	0
2.	Population and Employment	

Year	Population within 1 mile	Employment within 1 mile	Total Pop and Employ within 1 mile
2020	19,044	22,836	**41,880**
2040	20,607	34,006	**54,613**

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:		
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)	0
2. Population and Employment	

Year	Population within 1 mile	Employment within 1 mile	Total Pop and Employ within 1 mile
2020	19,044	22,836	**41,880**
2040	20,607	34,006	**54,613**

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:		
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	1,303
	2. Minority persons	7,030
	3. Low-Income households	577 persons
	4. Linguistically-challenged persons	533
	5. Individuals with disabilities	935
	6. Households without a motor vehicle	128
	7. Children ages 6-17	3,788
	8. Health service facilities served by project	9

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	Peoria – 15,200 Easter – 23,300
2. 2040 ADT estimate	Peoria – 46,000 Easter – 51,000
3. Current weekday vehicle hours of delay (VHD) (before project)	168.5

Travel Delay Calculations	Year of Opening
4. Enter calculated future weekday VHD (after project)	68.0
5. Enter value of **{#3 - #4} =** Reduced VHD	100.5
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)*	140.7
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*	218 s/veh At intersection
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).* CRF values were gathered from FHWA. CRF values for "Install Left Turn Lane (Double)" were used for westbound and southbound. CRF values for "Prohibit Left Turns" were used for northbound and eastbound.
Fatal crashes	1	
Serious Injury crashes	0	
Other Injury crashes	15	
Property Damage Only crashes	46	
2. Estimated reduction in crashes applicable to the project scope *(per the five-year period used above)*		
Fatal crashes reduced	1	
Serious Injury crashes reduced	0	
Other Injury crashes reduced	11	
Property Damage Only crashes reduced	30	

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	West leg – good East leg – poor South leg – excellent North leg - good

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

The west leg of the intersection has a Pavement Condition Index (PCI) of 83 which equates to a good condition; the east leg of the intersection has a PCI of 41 which equates to a very poor condition; the south leg of the intersection has a PCI of 89 which equates to an excellent condition; and the north leg of the intersection has a PCI of 84 which equates to a good condition. The project will address these pavement issues by reconstructing the intersection and providing new pavement within the project limits.

3. Average Daily User Volume	Peoria – 15,200 Easter – 23,300

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 N/A	
2. Describe current condition issues and how the project will address them. N/A	
3. Other functional obsolescence issues to be addressed by project N/A	
4. Average Daily User Volume over bridge	N/A

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: The configuration of the intersection will impact existing access on the southwest corner of the intersection. The design phase will accommodate the continuance of providing access to this property.	

Part 4 — Special Considerations

Complete all answers with a YES/NO/UNSURE, and an explanation as warranted. Part 4 is not scored but will assist in project recommendation.

1. Is the project a construction- or implementable- ready project?

   Yes, this project is implementable ready. This project is the next step of improvements recommended by the Intersection Alternatives Analysis Report for Peoria Street and Easter Avenue Final Report, completed in 2015. The report analyzed alternatives and recommended these project improvements for the intersection of Peoria Street and Easter Avenue.

2. Are there challenges with the project (right-of-way, environmental, utilities, etc.)?
   a. If yes, explain the challenge and how agency plan to address.
   - Avoid the regional drainage basin on the northwest corner of the intersection.
   - Work through right of way of private property on the southwest corner.

3. Are there other environmental or controversial issues associated with the project?
   No.

4. Does the project or program benefit more than just the sponsoring agency and considered subregionally significant/transformative?

   Yes, this project is part of a larger mobility effort including multiple jurisdictions in an effort to create a seamless east-west corridor from I-25 to Parker Road as a parallel alternative to Arapahoe Road. This intersection was identified as a bottleneck location along the proposed corridor. While the intersection itself is split between Arapahoe County on the west and City of Centennial on the east, the larger scope of the improvements also benefit; City of Aurora, City of Englewood, City of Greenwood Village, Town of Foxfield, Town of Parker, Douglas County, Arapahoe County, Centennial Airport, Dove Valley, Southeast Public Improvement Metropolitan District (SPIMD), Inverness, and Denver Tech Center. Benefits to each of these entities is anticipated through reduced congestion and improved reliability of travel times.

5. Does the agency have capacity and expertise to manage a federal project?
   a. Explain experience, approach, etc.

   Yes, Arapahoe County Transportation staff have broad experience managing projects with federal funding. The County has a long history of successfully managing projects through the federal funding requirements, operational complexities, and stakeholder involvement required.

6. Is the project a next logical phase of a project funded in previous TIP cycles?
   The Intersection Alternatives Analysis Report for Peoria Street and Easter Avenue Final Report, completed in 2015, analyzed alternatives for improving traffic operations, safety, and accessibility at the intersection and surround area. This project is the next step in implementation of improvements at the interchange.

7. Of the partnerships described in Section A, Question 7, are the partnerships providing funding?
    a. Describe the partnerships and funding of such.

    Yes:

    - Dove Valley Metro - $777,790
    - DSTMA / SPIMD - $777,790

8. Are there any other “special considerations” the committee should consider in evaluating the application?

    Future traffic volumes and travel demands will continue to propagate congestion issues and exposure to risk leading to continued safety problems that are too complex for conventional intersection designs to properly handle. The Alternative Intersection/Interchanges: Informational Report (AIIR) (FHWA-HRT-09-060) covers the Displaced Left Turn intersection, among others, as an innovative treatment that seeks to solve these complex issues.

    Operational Performance: Based on FHWA findings, simulations showed a 20 to 30-percent increase in throughput over comparable conventional intersections. Increased intersection capacity and efficiency that could postpone or eliminate the need for future grade separations.

    Peoria/Easter is unusual in that the northbound to westbound and eastbound to southbound turn movements act as a de facto through movement without the through configuration rendering a conventional intersection unable to handle the future traffic volumes. The recommended alternative of a sweeping curve with displaced left turn significantly increases capacity, relieves the bottleneck, which is the heavy turn movements, and is expected to provide acceptable level of service and efficiency beyond 2040.