Part 1 Base Information

1. Project Title	**US 85 (Santa-Fe) PEL Study**
2. Project *Start/End* points or Geographic Area *Provide a map with submittal, as appropriate*	C-470 to Alameda Avenue (Milepost 200 - Milepost 210.72 I-25
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, Transportation Division Manager 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 Bike and Ped Plan for alternative mode usage
- ☒ Other(s): 2040 Vision Plan (unfunded)

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
- ☐ Other:

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

The US 85 (Santa-Fe) corridor is a major north-south corridor that provides inter-Region connectivity and functions as a parallel alternative to I-25. It functions in a similar fashion as Parker Road (SH83) on the east end of the metropolitan area, and has similar continutity running from Castle Rock on the south into the City of Denver Central Business District. To date no substantive culmlative study for a vision and improvements has been performed on this roadway. From C-470 to the south, a PEL and EA have been performed to identify necessary improvements to accommodate future growth (in particular Sterling Point development), in which an additional volume has been projected to go from 58,447 vpd (2016) to 91,000 vpd (2040) north of Mineral in other studies

performed south of the project. This nearly doubling of travel demand will be on a corridor within Arapahoe County, which is expereincing Mobility Grade of D & F (Severly congested) already. The further north you go towards I-25 traffic volumes continue to increase due to connections of major roadways such as Bowles Avenue, Belleview, Hampden, Evans, etc to volumes currently approaching 100,000 vpd. The volume south of Alameda on Santa-Fe is shown as 19,833 in 2013 and projected to grow to 30,000 vpd in 2040.

The issues that have been identified along the corrior by the various jurisdictions are as follows:

Intersection Operations and congestion at Mineral, Bowles, Dartmouth, Alameda to name a few
Severe congestion between C470 and I-25
Access control challenges along within the City of Littleton
Limited access to business in Englewood
Throughout the corridor: Signal operation for signalization
Accidents along corridor, running red lights for turns, rear ends, side swipes (see attached accident analysis)
Railroad crossing near US 285
First and last mile connectivity issues issue to transit (LRT and Bus)
Bike and pedestrian connectivity along corridor, as well as US 85 being a barrier for east-west connectivity Mary Carter Trail
Idenfication of needed right-of-way for improvements to preserve for future in green field/developing areas
Congestion around Arapahoe Community College (Church - Bowles)
Provide more reliable trips users of the corridor and improving incident response.
Multi-modal trail connectivity and how it ties to LRT tations and transit connections
Environmental justice community impact (Wolhurst)
Better ways to use existing HOV lanes?
Improve mobility for all modes to various hospitals (Littleton Adventist, Encompass Health Rehab, Swedish, Craig, Porter Adventist, Kaiser Perm Facilities, community college, and public private schools).
Impacts to connecting roadways to the corridor with improvements and demand and how
Use of the corridor as a fright corridor and accomodation of such given the land use and connectivity

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

The proposed project on the US 85 Corridor would be a focused Planning and Environmental Linkage Study. The PEL is the correct choice as funding for the corridor has yet to be identified, most problems or concerns have been identified, it completes the evaluation/recommednation of a missing piece of US 85 between two studies (US 85 south of C-470 and Central I-25). The study would focus on the issues identified to date by various stakeholders along the corridor (listed above) and develop alternatives to address such issues. The study will be the first step in establishing a vision for improvements, operations, and changes within the corridor and will prioritize such for further evaluation, level of NEPA action required, design, and implementation. Another goal would be for consideration of the results/recommendations to be included in various plans (ie DRCOG 2050 Plan, Freight Plan, etc.). the project specifically, would include the following in scope:

Project Management and Continuing Requirements

Establish Project Team, Technical Committee, Policy Committee and set meetings

Public Involvement

Existing Conditions Evaluation (geometrics, crashs, travel demands, traffic ops, strctures, drainage/floodplains, bike/ped,etc.)

Base Mapping, Property owenership

Environmental overview

Pupose and Need and Identifying goals for the Corridor

Alternative Development

Screen Alternatives (3 levels likely, Qualatative and Quantative)

Test Alternatives

Conceptual design layouts

Financial Analysis (estimate costs and potential funding packages)

Alternative(s) Recommendations with report along with prioritiation/phasing of improvements

Produce PEL Report

Answer FHWA 21 PEL Questions

10. What is the status of the proposed project?
The City of Littleton has initiated a conceptual improvement study at the intersection of Sante-Fe and Mineral to identify potential improvements and footprints of alternatives to help in the presentration of necessary right-of-way with an pending development. In addition, the Arapahoe County Open Spaces Department, as well as the South platte Working Group, is performing a South Platte Connections Study that is studying ways to improve bicycle and pedestrian connections to the South Platte. The study kicked off in July 2018 and will focus on seven locations where access to the South Platte is difficult today, including:

Dartmouth
Hampden
Oxford
Federal
Belleview
Bowles

Mineral

11. Would a smaller federal 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 evlaution and recommendation process. However, if this were to occur there are several options that the funding partners would consider to move the project forard in some fashion. This could include allocation of sub-regional funding from the Arapahoe County Sub-region, the funding partners agreeing to include additional funding, etc in addition, being this is a PEL Study, there is flexibility to adjust the scope of work to fit budget available, while maintaining the original intent of the project..

A. Project Financial Information and Funding Request

1. Total Project Cost		**$3,000,000**
2. Total amount of DRCOG Regional Share Funding Request *(no greater than **$20 million** and not to exceed **50% of the total project cost**)*	**$1,500,000**	**50%** **of total project cost**

3. Outside Funding Partners *(other than DRCOG Regional Share funds)* List each funding partner and contribution amount.	**$$ Contribution Amount**	**% of Contribution to Overall Total Project Cost**
CDOT	$750,000	25%
Arapahoe County	$150,000	5%
Douglas County	$150,000	5%
City and County of Denver	$150,000	5%
Littleton	$189,330	6%
Englewood $61,800 and Sheridan $48,870	$110,670	4%
Total amount of funding provided by other funding partners *(private, local, state, Subregion, or federal)*	**$1,500,000**	

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 2018.*

	FY 2020	**FY 2021**	**FY 2022**	**FY 2023**	**Total**
Federal Funds	$1,500,000	$	$	$	**$1,500,000**
State Funds	$ 750,000	$	$	$	**$750,000**
Local Funds	$450,000	$300,000	$	$	**$750,000**
Total Funding	$2,700,000	$300,000	$0	$0	**$3,000,000**
4. Phase to be Initiated *Choose from Design, ENV, ROW, CON, Study, Service, Equip. Purchase, Other*	Study	Study	Choose an item	Choose an item	

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. Regional significance of proposed project

WEIGHT **40%**

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

1. Why is this project regionally important?

This project serves a significant number of south metropolitan users (nearly 100,000 vpd). The US 85 (Santa-Fe) corridor is a major north-south corridor that provides inter-Region connectivity and functions as a parallel alternative to I-25. It has continutity running from Castle Roack on the south into the City of Denver Central Business District as it provides two accessibility points into Denver, I-25, and Santa-Fe. On the south, US 85 provides the direct connection to C-470 which is crtical as the next eastbound access west of US 85 is Wadsworth and on the east is Lucent Blvd. The roadway is the primary access point into Arapahoe Community College and numerous hospitals near the corridor. The corridor is critical in provding accessibility to the Southwest LRT Stations. There are diverse land uses that are served by the corridor ranging from residential to industrial which leads to multi-uses along the corridor including frieght, which represent as much as 9-10% of the design hourly vehicles in the corridor daily trips. The 2020 population and employment along the corridor wihtin 1 mile is 255,899, which is close to a 50% distribution between uses. The combined total is projected to increase to 302,127 in 2040, a 18% increase

2. Does the proposed project cross and/or benefit multiple **municipalities**? If yes, which ones and how?
Yes, the project crosses the cities of Littleton, Sheridan, Englewood, and the City and County of Denver and also includes the Counties of Arapahoe and Douglas County. Benefits to each of these entities is anticipated through reduced congestion (especially during periods of peak travel times), improved reliability of travel times for travelers, as well as incident response along the corridor, improved access to the LRT stations along the corridor, and improved access to the two major regional health care facilities located within the project corridor. Benefit will also derive from developing a plan for how the corridor will look in the future.

From the DRCOG Congestion Model the 2016 vehicle hours of travel in the project is 2444 daily and projected to increase by 43% to 4301 daily. The 2016 travel time variance between peak travel time and free flow travel is 1.64 on average for the entire corridor with a minimum of 1.22 and max of 1.98 (County Line - Mineral) in various segements of the corridor meaning that in portion fo the corridor it take twice as long to travel the same distance during peak periods. The travel time variance is projected to grow on average for the entire corridor by nearly double to 3.18 with a minimum of 1.34 and maximum 10.55 in 2040. These variations, the corridor study will make recommednations on how to manage and inprove these travel times and the variable reliability of the corridor now and into the future.

An example of the congestion being expereinced in the corridor is specifically at the intersection of US 85 and Mineral, where queues during some peak times extend over a mile. This has resulted in roughly $5.2 M in annual users costs created by congestion. The average speeds through the intersection is between 36 and 38 mph, when the posted speed is 45 mph, which is one indicator of the travel demands through out the day and the use of the corridor for frieght. During peak hours the speeds through this intersection will range from 13-15 mph on congested days and 26 to 29 mph on days of less congestion. The study evaluation ongoing now at this intersection, as well as the work that will be performed by the proposed PEL will address these issues at this location as well as the other intersections throughout the corridor.

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

Yes. This project is located within 3 Sub-Regions (Douglas, Arapahoe, Denver) and benefits a 4th (Jefferson County), as a large number of Jefferson County residents utilize the corridor on the commute to either travel

north into Denver or use of US 85 to access C-470. Benefits that will be derived by the improvements will benefit all users no matter what sub-region they are generated, but includes reduced congestion, improved accessibility to alternative travel modes including the 6 LRT Stations (Broadway, Evans, Englewood, Oxford, Littleton, Mineral) and Mary Carter Trail, improved trip reliability for corridor users and emergency service providers, improved operational characteristics and lane utilization, as well as improved safety that comes with improved operations and reduced congestion.

The total 2016 VMT is over 774,000 and projected to increase by 8.5% to nearly 847,000 in 2040. This increase is reflective of the demand from various sub-regions that the project services. Also, the volume to capacity ration in 2040 is projected to by nearly 1.5 on average for the corridor with a max of over 3. This congestion and increased demand warrant finding solutions to manage with improvements and reduce with alternative mode choices. In addition the cost of the delays will increase by 48% to nearly $310,000 daily with 41% of this cost being attributed to fright and commerical traffic which is a significant impact on the metro area as awhole.

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 identify ways to address congestion, operations and increase mobility and the reliability of the existing corridor and alternative transportation networks in the area of the corridor multi-modal network. This will be accomplished through the evaluation & recommendation for improvements at intersections along the corridor, individual mainline improvements between intersections including access (existing and future), establishing safe and comfortable connections between te west and east sides of US 85 for Bike and pedestrians for enhanced usage of the Mary Carter/Platte Rive Trail. TDM measures, technology, and other congestion mitigation strategies will be consdiered throughout the study corridor with the primary effort of congestion mitigation at the best and management at the least which would enourage travelers to avoid and adapt to congested times of day. Once recommendations are implemented, resulting benefits include ehnanced mobility, likely improved air quality, reduced fuel/energy consumption, reduction in VHT and potential increase in alternative modes of travel via ease and conveneince of use. Direct benefit of the study completion will be a road map on improvements to be pursued to implementation, the priorities of such, the next steps to accomplish and the start of funding requirements and straegies to accomplishing the recommodations including the possibility of improvmenets being included in the fiscally constrained 2050 RTP.

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?

One of the pillars of sustainability and resilient economies is the long range planning, which this study is directly doing. As mentioned previous, the corridor serves a diverse land use pattern and demogrpahics. Within a mile either side of theis north-south corridor 2020 population is 147,914 and employement is 107,985 with the projections to increase to 171,280 and 130,847, respectively by 2040. The total ridership on the Southwest LRT is 34,241. To improve accessibility and mobility for people and goods; enhance competitiveness at a regional as well as a global level; improve access to traditional and non-traditional markets; improve transport reliability, efficiency, safety and security; are all keys to a sustainable and resilient economy. in regards to these pillars. Within the corridor there are pockets that have zero-vehicle vichles that represent 16-24% or 6,197 households, which presents an opportunity for increased ridership of transit if connections are improved. Also, the vulnerable population along the corridor represents 14% over age 65, 22% minority, 6.5% low-income, 5% liguistically-challenged, 11% with disabilities, 14.5% of age 6-17 of the 147,914 population along the corridor.

Maintaining a vibrant economy depends upon the region's ability to work together toward the following outcomes:

1. All residents have access to a range of transportation, employment, commerce, housing, educational, cultural and recreational opportunities.
2. Investments in infrastructure and amenities allow people and businesses to thrive and

prosper.

To obtain these outcomes requires; 1) fund transportation system improvements that improve the flow of people, goods and services, 2) provide local and regional transportation services that improve personal mobility, housing and employment access, as well as independence and well-being, especially for those with mobility obstacles or impairments, and 3) ensure traditionally underserved populations receive at least a proportionate share of transportation benefits and are not disproportionately affected by transportation investments relative to the entire regional population. All of these MetroVision startegies will be further considered and ultimately enhanced via improvements within the corridor. A backbone existis already with the amenitites that existing including the Southwest LRT, Mary Carter Trail and mixture of land use.

As mentioned previously the delay costs currently are impactful on commerical and frieght traffic (Currently $68,500 of the total $161,000 for the corridor daily). As this grows by 48%, the economy along the corridor will be impacted and businesses may choose to relocate to lower cost locations with the likely consequence of increased DRCOG region VMT.

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

As described previously and to address a couple of the major concerns within the corridor, this study will look at solutions of US 85 being a barier to east-west movement to and from the Platte River Trail and 6 transit stations. In addition as mobility is improved with the study recommednation along the corrdior vehcile access to the park-n-ride facilities at the LRT stations will be enhanced. The demand for alternative mode travel along the corridor will also be considered, which could include sidewalks/paths or it could be determined that a better location is off the corrdior some place (ie example Platte River Trail) or surface road networks.

In a recent survey performed for the South Platte Connections Study showed that:

1. 65% access the South Platte Trail by bike from home or other and over 30% drive to trail heads

2. 38% indicated that unsafe intersection crossings were the biggest challenge followed by lack of bike/ped tunnels or bridges (26%), lack of on-street bike lanes (25%), and no trails/off-street connections (20%)

These results indicate the opportunities that can be addressed by this study which can be improved via this study and recommendations. In fact, nearly 60% of those surveyed indicated that they would access the South Platte Trail more by bikes and on foot if the access was made easier and safer, which is one of the gaols of the project.

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

CDOT has provided a concurrence and funding support letter for this project. In addition, all three Counties (Arapahoe, Denver, Douglas) are supportive of the project and providing funding as listed above. While Jefferson County will benefit and is not directly impacted with this study, they have provided a support letter for the project. The Tri-Cities are also supportive and willing to provide funding of the projacted as shown and reflected in the various support letters (attached). This a true multi-jurisdictional supported project all having a common goal of providing solutions to the issues identified and projected to occur in the future. The stakeholders have been discussing this project for over two yeaars, which has allowed them to form a strong supporting coalition that has advocated for the project since that time. This partnership and relationships have also alolowed for fine tuning of the issues to be solved and to extend project to accommodate project limits to meet Denver's desire (Extend from I-25 to Alameda).

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).**

   Within the vicinity of the corridor are 106 health care facilities that are within 1 mile of the corridor that utilize the corridor for access. The are at least 6 regional hospitals/level 1 trauma centers (Swedish) that use the corridor for access, as well. The corridor has a vulnerable population of 20,690 over age 65, 32,071 minorities, 7,851 linguistically -challenged, 16,588 individuals with disabilities, and 21,546 children ages 6-17. See page 16 for a detailed break down of the various demographics along the corridor. Improving operations of the corridor, reducting congestions, and providing improved accessability to existing transit and trail/bike systems provide improved opportunities for these targeted groups.

2. Describe how the project will **increase reliability of existing multimodal transportation network.**
   The corridor serves a population of more than 147,914 within 1 mile either side of the corridor and this population is projected to grown by 15% to more than 171,280 by 2040. Within a mile of the corridor there are more than 107,985 employees with a projections to increase to 130,847 (17%) employees by 2040. The corridor serves these various demographics by either providing them opportunities to use a car, walk, bike, or ride transit to access either place of employment or their residence. There are existing choices within the corridor for all modes (SW LRT, Bus routes, trails and sidewalks). The intent of the project will be to evaluate and recommend enhances to these networks to make sure they can be accessed in a safe and efficient manner. By relieving traffic congestion on US 85, traffic flow will be improved to provide a more reliable trip and reducing travel time/delay/ and incidental cost of such which not only address the SOV component of muli-modal, but also freight and services. This also improves reliability, accessibility, and mobility to LRT stations via cars and buses. As far as bike and pedesrtians, the study will evaluate and recommend alternatives for safely and efficiently improving access/mobility to/from LRT Stations, the Platte River Trail, and other activity centers. The likely recommended improvements provide for the increased reliability of all forms of travel within and to/from the corridor.

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

   From Arapahoe County data, we show a total of 3945 crashes between 1/1/2009 and 12/31/2016. There were 6 fatalities and 3215 property damage only crashes. We did not have crash data for the segment of US 85 within Denver as part of the Arapahoe County data, but we assume that there are similar crash history. Rear end crashes comprise the majority of the crashes within the corridor (64%), followed by sideswipe (13.2%), fixed objects (8.1%), and broadsides (5.6%). This high number of rear end accidents is a function of the operations within the corridor and the congestions being experienced. Another indication of the operations and congestion at intersections is that 56% of the crashes (2195) occur at or are intersection related crashes. 22 crashes were bike and pedestrian related. Finally using Vision Zero Suite software by DiExSys, we quickly evaluated the Level of Safety Service (LOSS) and determined that is was category 4 for both the number of crashes, as well as severity crashes (59.07 vs 11.12 crashes per mile per year and 9.15 vs 2.97). This LOSS values indicate it is well above other corridors of similar type and traffic volume meaning there is a high opportunity to improve the LOSS throughout the corridor with targeted improvements to address specific crash trends, which is a part of the PEL scope of work. The PEL Study consultant will evaluate the specific crashes along the corridor and determine the trend and likely issues. They will then make recommendations on how to address the various types of crashes and how that may fit with alternatives that would be addressing other issues along the corridor (ie congestion, intersection operations, accessibility, etc.).

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 corridor traverses/directly connects to 6 DRCOG designated Urban Centers of Highlands Ranch Town Center (998ac), Littleton Downtown (220 ac), Englwood City Center (490 ac), Evans Station TOD (112 ac), Broadway Station TOD (145 ac), Alameda Station (201 ac). Combined the population and employment at these locations is 147,914 and 107,986, respectively. It is projected to increase by 15% population to 171,280 and 18% to 130,847 for employment. In addition, there is 1,326 employees within Sheridan at the River Point Development and projected to increase to 1,660 in 2040.

The PEL study will account for this growth opportunties in the evaluation so as to accommodate and manage the impacts and improve the mobility within the corridor ensuring that employees can access their jobs efficiently and provide services. With the study recommendations, residents can access and use various transportation alternatives, as well as access the trails sytems in the area safely with minimum stress and improved comfort.

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*

As mentioned above, the corridor directly services or connects to 6 urban centers. There is a backbone of multi-modal options for use of vehicles (US 85), transit (SW LRT), bus and shuttle service (77, 401, 36, 59, 66, 51, 21, 11, OL), and Platte River Trail with bike and pedstrian facilities. The PEL will evaluate alternatives for expanding the various networks, enahnce the use of the existing systems more efficiently and safely. Traditional congestion mitigation strategies will be considered, but the communities are open to evaluating non-traditional strategies to address congestion and mobilitiy challenges within the corridor influence area. The population within 1 mile of the SW LRT is 208,325 in 2020 and 247,917 in 2040 (note there is overlap of the 1 mile circumfrance of the stations). Employment at these stations collectively is 168,808 in 2020 and 198,776 in 2040. Combined the populations and employment is 377,133 in 2020 and 446,693 in 2040.

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 the region for people, goods, or services? ☒ Yes ☐ No

Describe, *including supporting quantitative analysis*

As mentioned earlier, the corridor has mobility choices already. The goal of the project would be to develop alternatives and recommendation that can enhance the use of the corridor for all transportation mode users. This would be done through the development of alternatives which addresses congestion, safety, accessability to alternative modes, elimination of barriers, etc. to create a safe, reliable, and predictable trip no matter your choice of travel mode.

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 PEL study itself will not result in a reduction of greenhouse gases, but it is expected the recommendations from the study, once implemented, will reduce greenhouse gas emissions and improve air quality. This would be done via the reduction of congestion, improving operations, and providng a mode shift by enhancing opportunity to use alternative modes.

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*

One of the primary element of the PEL study will be to provide alternatives that can enhance the accessibility to the Platte Rive Trail (Mary Carter Greenway). The existing trail has a user count per day of 486 bikes and 102 pedestrians north of Oxford and a total use 1000 daily north of Mineral. The weekend uses count north of Oxford is nearly 1000 (990) That could easily be increased by 20-25% if improved safety and accessibility is provided per the survey results referenced earlier. Also, there are numerous other recreational opportunities in the vicinity of the corridor including 4 golf courses including Overland, Broken Tee, Columbine Country Club, Littleton, and major parks like South Platte Park, Hudson Gardens, Cornerstone and Belleview Parks, Centennial Park, Ruby Hill Park including the new concept venue, and Vanderbilt Park. Accessibility and mobility to/from all of these facilitites would be enhanced with improvements recommednaed throughout the corridor.

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*

By providing the safe and efficient alternatives for moving east-west across US 85, a barrier to the use of the various amenities along the Platte River can be utilized. Furthermore, the study will consider what north-south improvmeents might be necessary either within or near the corridor to provide opportunities for healthy choices. The Arapahoe County Bike and Pedestrian Plan, identified missing sdiewalk links (23+ within 1 mile of the corridor within Arapahoe County), as well as recommended bike facilities into encourge use of active transportation options and it is anticipated that the PEL will reference and enhance that study recommednation where necessary.

Also, see the attached 2015 and 2040 short trip analysis performed with the Arapahoe County Bike and Ped Master Plan which shows for various distances which shows the opportunity to shift modes.

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*

There are 106 health care facilties within or serviced by the corridor as a primary north-south corridor. Within the coorridor there are 9,675 low income housholds and individuals with disabilities are 15,588. Households without cars are 6.197 and the popoulation of over 65 is 20,690 and childern ages 6-17 is 21,546. As can be seen by this demographics there is an opportunity to enhance the access and mobility for these various populations. It

is envisioned that these various areas will be considered and alternatives developed to improve access and mobility for various groups.

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

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

Describe, *including supporting quantitative analysis*
Within a mile of the corridor is serves a population of more than 147,914, which is predicted to grow by 15% to more than 171,280 by 2040. The corridor also currently serves more than 107,985 employees on a daily basis. This is predicted to increase to more than 130,847 employees by 2040. There are nine (9) high emplyment industrial clusters, nine (9) medium, and nine (9) low employment clusters along the corridor. With the goals of the project to address and mitigate congestion, the corridor economic health and vitality can be sustained and enhanced as it would ensure residents and employees can access their homes & places of work efficiently and safely.

D. Project Leveraging

WEIGHT 10%

9. What percent of outside funding sources (non-DRCOG-allocated Regional Share funding) does this project have?	50%	80%+ outside funding sources .....High 60-79% .....Medium 59% 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	34,241
2.	Population and Employment	

Year	Population within 1 mile	Employment within 1 mile	Total Pop and Employ within 1 mile
2020	208,325	168,808	**377,133**
2040	247,917	198,776	**446,693**

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	486
2.	Population and Employment	

Year	Population within 1 mile	Employment within 1 mile	Total Pop and Employ within 1 mile
2020	147,914	107,985	**255,899**
2040	171,280	130,847	**302,127**

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: 990 user on weekends vs 650 during weekdays north Oxford on South Platte Trail		
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)	102
2. Population and Employment	

Year	Population within 1 mile	Employment within 1 mile	Total Pop and Employ within 1 mile
2020	147,914	107,985	**255,899**
2040	171,280	1,308,470	**1,479,750**

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	20,690
	2. Minority persons	32,071
	3. Low-Income households	9,675
	4. Linguistically-challenged persons	7,851
	5. Individuals with disabilities	16,588
	6. Households without a motor vehicle	6,197
	7. Children ages 6-17	21,546
	8. Health service facilities served by project	106

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	101,881
2. 2040 ADT estimate	0
3. Current weekday vehicle hours of delay (VHD) (before project)	1,044

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	6	
Serious Injury crashes	724	
Other Injury crashes	22	
Property Damage Only crashes	3,215	
2. Estimated reduction in crashes applicable to the project scope *(per the five-year period used above)*		
Fatal crashes reduced	0	
Serious Injury crashes reduced	0	
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	Fair
2. Describe current pavement issues and how the project will address them.	
3. Average Daily User Volume	101,881

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:	