

Part 1

Base Information

1. Project Title	Intersection Operational Improvements at Mineral Avenue and Santa Fe Drive		
2. Project Start/End points or Geographic Area <i>Provide a map with submittal, as appropriate</i>	Intersection of W Mineral Avenue and S Santa Fe Drive (US 85) extending 1,500 ft out for every leg of the intersection.		
3. Project Sponsor (entity that will construct/ complete and be financially responsible for the project)	City of Littleton		
4. Project Contact Person, Title, Phone Number, and Email	Keith Reester, Public Works Director, 303-795-3866, kreester@littletongov.org		
5. Does this project touch CDOT Right-of-Way, involve a CDOT roadway, access RTD property, or request RTD involvement to operate service?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>If yes, provide applicable concurrence documentation with submittal</i>		
6. What planning document(s) identifies this project?	<input type="checkbox"/> DRCOG 2040 Fiscally Constrained Regional Transportation Plan (2040 FC RTP)		
	<input checked="" type="checkbox"/> Local plan:	Santa Fe & Mineral Intersection Project	
	<input type="checkbox"/> Other(s):		
	<i>Provide link to document/s and referenced page number if possible, or provide documentation with submittal</i>		
7. Identify the project's key elements.			
<input type="checkbox"/> Rapid Transit Capacity (2040 FC RTP) <input checked="" type="checkbox"/> Transit Other: RTD <input type="checkbox"/> Bicycle Facility <input type="checkbox"/> Pedestrian Facility <input checked="" type="checkbox"/> Safety Improvements <input type="checkbox"/> Roadway Capacity or Managed Lanes (2040 FC RTP) <input checked="" type="checkbox"/> Roadway Operational		Grade Separation <input type="checkbox"/> Roadway <input type="checkbox"/> Railway <input type="checkbox"/> Bicycle <input type="checkbox"/> Pedestrian <input type="checkbox"/> Roadway Pavement Reconstruction/Rehab <input type="checkbox"/> Bridge Replace/Reconstruct/Rehab <input type="checkbox"/> Study <input checked="" type="checkbox"/> Design <input type="checkbox"/> Transportation Technology Components <input type="checkbox"/> Other:	
8. Problem Statement	What specific Metro Vision-related subregional problem/issue will the transportation project address?		
<p>Because Santa Fe Drive has some of the highest non-interstate volumes in the region, this intersection project will address a number of challenges identified in the 2040 Metro Vision Regional Transportation Plan (2040 MVRTP), including:</p> <p>Growth Challenges (2040 MVRTO, pp. 9) <u>Population & Economic Growth</u> As outlined in the 2040 MVRTP, the population of the Denver region is expected to climb to 4.3 million people by</p>			

2040. At the southwest corner of the Santa Fe Drive & Mineral Avenue intersection there are about 110 acres that are slotted for development in the next 5-10 years. This project will account for the capacity currently needed at this intersection, as well as the future capacity needs as a mix of residential, retail, and office uses are built adjacent to the intersection.

Land Development Challenges (pp. 9)

Location of Growth

This project will not only help provide needed capacity for current traffic volumes and volumes for the adjacent development, but this project will also account for growth in this section of the metro area—specifically related to the anticipated growth at the Sterling Ranch development.

Social Challenges (pp. 10)

Increased Travel

Planned development adjacent to the site, as well as additional planned development south of the project, means this intersection that is already at capacity will be further stressed. This project will account for more immediate needs at the intersection (next 10-15 years) and will set the stage for possible grade separated, depending on the outcome of the US 85 PEL (from I-25 to C-470).

Transportation Challenges (pp. 13)

Traffic Congestion

Traffic congestion along the Santa Fe Drive corridor is a significant issue during both the AM and PM peak hours, and the Santa Fe and Mineral Avenue intersection is one of the most congested in the DRCOG region. As supporting evidence, crash reports from 2014 to 2018 show that 68% of all collisions at the intersection are rear-end accidents, which is consistent with corridors that experience a lot of congestion. By changing how the intersection operates and by removing left turns from the signal phasing, this project will significantly reduce congestion at this intersection and along Santa Fe Drive in general. Additionally, this project will help provide more convenient access to RTD's Mineral Station Park and Ride.

Traffic Crashes

The Santa Fe Drive and Mineral Avenue intersection has the highest number of accidents for any single location in the City of Littleton. In the last five years, Santa Fe Drive and Mineral Avenue has had 38% more crashes than the next highest accident intersection in Littleton, and, as mentioned above, 68% of all the crashes are rear-end accidents. This project will change the way the intersection operates, removing left turns from the signal phasing, and allowing more time for through movements which is expected to reduce congestion and reduce the number of rear-end accidents.

Environmental Challenges (pp. 17)

Air Quality

It is [well documented](#) that traffic congestion causes vehicles to burn more fuel which adds to air pollution in areas near congested roadways. This project is expected to help alleviate congestion at this intersection which will help improve air quality.

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

The intersection of Santa Fe Drive and Mineral Avenue currently handles up to 89,000 trips/day and, with the development of Sterling Ranch to the south and Santa Fe Park in the southwest corner of the intersection, the total volume is projected to increase by up to 30% in the next 5 - 10 years. This project provides operational improvements to the current configuration while the US-85 Planning and Environmental Linkages (PEL) Study is completed and the intersection is studied as part of the larger Santa Fe Drive Corridor. The intersection is adjacent to the Mineral Light Rail Station, the end of RTD's Southwest Line, where parking capacity is currently at 100% daily. The projected alignment in preliminary design accommodates two (2) supplemental roads in the

northwest and southwest quadrants of the Santa Fe Drive and Mineral Avenue intersection. These “quad” roads would divert the left turn movements from the intersection and connect to Santa Fe Drive at new traffic signals as part of a signal system (see below graphic for more details). These modifications would enhance traffic movements while laying a foundation for future construction of a grade separated structure at the intersection. This quad road configuration would allow for greater access to the Mineral Station Park and Ride based on the concept design that has been completed.

Quad Roads

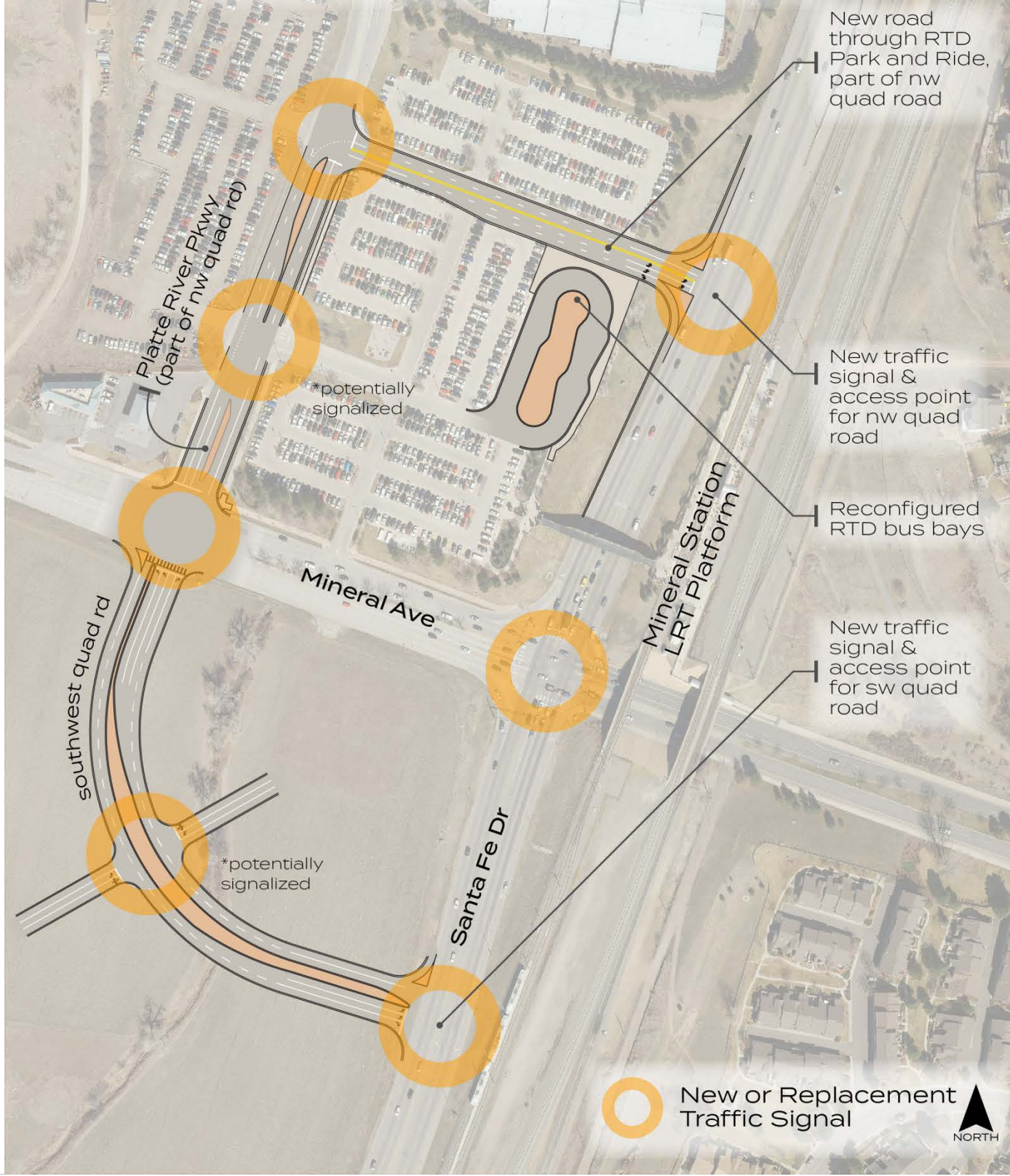
The current concept design has a quad road in the northwest and southwest corners of the intersection. The quad roads will eliminate all left turn movements from the signal phasing at the Santa Fe Drive and Mineral Avenue intersection and, instead, direct drivers onto one of the quad roads and through an adjacent intersections to complete the movement. This will allow for more green time for through movements and will help ease congestion.

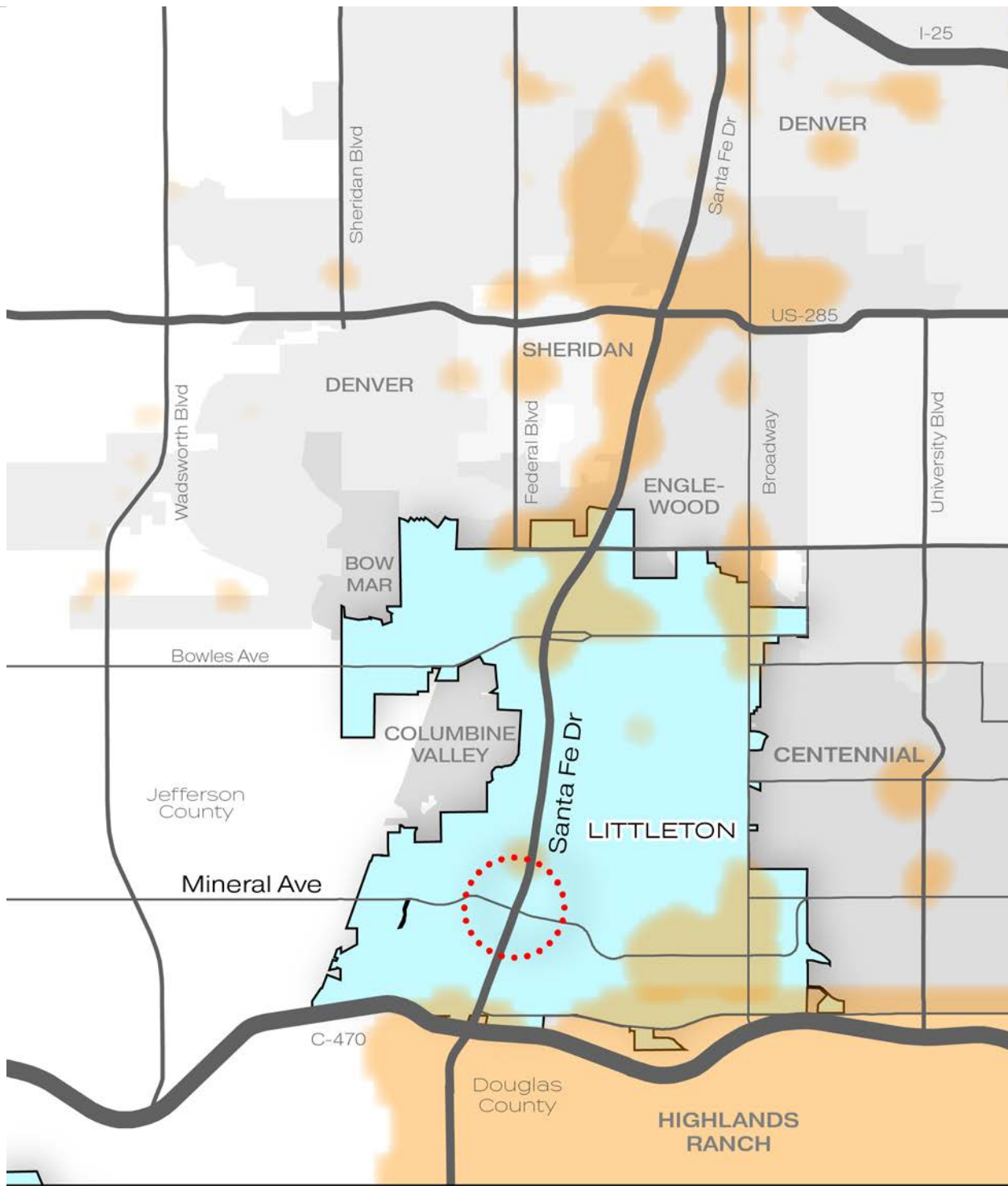
New Traffic Signals

Both the quad roads will have signalized access onto Santa Fe Drive at new intersections approximately 500 feet north and south of Mineral Avenue, and onto Mineral Avenue via the existing S Platte River Parkway signalized intersection. This will allow vehicles that would have previously turned left at the Santa Fe Drive and Mineral Avenue intersection to safely access a quad road to complete the desired movement.

Please reference below graphics for further details.

Santa Fe Dr & Mineral Ave





SANTA FE Dr & MINERAL AVE CONTEXT MAP



1. What is the status of the proposed project?

Extensive analysis has been completed in cooperation with CDOT, Arapahoe County, RTD and the adjacent land

owners, in order to identify the preferred alternative configuration for the intersection. Conceptual design has been completed to date, with the final design of the quad roads as the next step in the process.

2. 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.

The Santa Fe Drive and Mineral Avenue Intersection Study shows that a quad road on the northwest and southwest quadrants of the intersection will provide the greatest improvements to the intersection while the US 85 PEL (from I-25 to C-470) is being conducted, and is the best option to accommodate future grade separation at this intersection. This option (**Option A**) is estimated to cost \$19,000,000.

There are several alternatives that cost less than Option A, but as cost decreases so too do the anticipated operational improvements at the intersection.

Option B: SW Quad Road Only w/ Concrete Pavement: \$11,700,000

Option C: SW Quad Road Only w/ Asphalt Pavement: \$7,800,000

Option D: Continuous Flow Intersection (CFI) for NB and SB Left Turns on Santa Fe Dr: \$11,400,000

A. Project Financial Information and Funding Request

1. Total Project Cost	\$19,000,000	
2. Total amount of DRCOG Subregional Share Funding Request	\$15,200,000	80% of total project cost
3. Outside Funding Partners (other than DRCOG Subregional Share funds) List each funding partner and contribution amount.	\$ Contribution Amount	% of Contribution to Overall Total Project Cost
City of Littleton	\$3,800,000	20%
Total amount of funding provided by other funding partners (private, local, state, Regional, or federal)	\$3,800,000	20%

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	\$1,600,000	\$4,800,000	\$4,800,000	\$4,000,000	\$15,200,000
State Funds	\$ 0	\$0	\$0	\$0	\$0

Local Funds	\$400,000	\$1,200,000	\$1,200,000	\$1,000,000	\$3,800,000
Total Funding	\$2,000,000	\$6,000,000	\$6,000,000	\$5,000,000	\$19,000,000
4. Phase to be Initiated <i>Choose from Design, ENV, ROW, CON, Study, Service, Equip. Purchase, Other</i>	Design, ENV, ROW	ROW, CON	CON	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.					<input checked="checked" type="checkbox"/>

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?

Regionally Significant Routes

Santa Fe Drive is not only a major arterial for the City of Littleton and Arapahoe County, this roadway is also a CDOT designated expressway that is significant this quadrant of the DRCOG region. This roadway is the primary route many people from the southwest part of the region use to access Downtown Denver and serves a significant amount of truck traffic (over 9%) which hints at the economic importance of the corridor. Santa Fe Drive alone has an ADT of about 57,000 vehicles, and the congestion from this intersection effects thousands of people a day. Mineral Avenue is also a significant arterial for Littleton and the region as one of the few east/west connections south of Denver that extends from C-470 in the foothills to I-25. Mineral Avenue has an ADT of about 32,000 vehicles and the congestion at this intersection is also a significant problem for nearby residents and commuters who rely on Mineral Avenue for commuting and business.

DRCOG Identified Bottleneck

The Santa Fe Drive and Mineral Avenue intersection has been identified by DRCOG as a “bottleneck” meaning this intersection is one of the “locations with the most severe delay in the DRCOG region...”. In the peak hour, congestion on Mineral Avenue regularly extends a mile from the intersection. Likewise on Santa Fe Drive, congestion regularly extends about 750’ from the intersection, though an accident that diverts traffic from a nearby arterial can easily double this length. This project will aim to fix this issue and reduce travel time for thousands of people.

Coming Development

As mentioned above, development adjacent to the project and further south on Santa Fe Drive is expected to increase the traffic volume by 30% over the next 5-10 years. Adding that much traffic to an already congested intersection with failing operations will likely send traffic to other nearby arterials, which will impact nearby residents as well as travelers through the region.

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

City of Sheridan

The City of Sheridan lies adjacent to Santa Fe Drive north of this intersection, but for residents and businesses who need to access C-470 or travel south into Douglass County, they must travel through the Santa Fe Drive and Mineral Avenue intersection. When this intersection project is complete, the modifications should improve travel for these individuals.

City of Englewood

Similar to Sheridan, the City of Englewood is adjacent to Santa Fe Drive and residents and businesses likely use this intersection to access C-470 and Douglas County. Improvements to this intersection will help ease the travel times of these individuals as well.

City of Centennial

Mineral Avenue serves as a major east/west connector for Centennial residents who work or need to access amenities in eastern Jefferson County (e.g. Southwest Plaza Mall). After this project is complete, travel through

this intersection will be more convenient and safer for these individuals.

Town of Columbine Valley

The Town of Columbine Valley is located west of Santa Fe Drive on the west banks of the South Platte River and, like other nearby towns and cities, Santa Fe Drive offers people who live and work in the town the most direct access to Downtown Denver. People traveling from Columbine Valley can only access Santa Fe Drive by taking Bowles Avenue or Mineral Avenue. Once this project is complete, they will benefit from safer and quicker travel through the Santa Fe Drive and Mineral Ave intersection.

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

Jefferson County

Because this intersection is so close to eastern Jefferson County, people coming from or going to eastern Jefferson County likely use Mineral Avenue to access Santa Fe Drive. In addition, Mineral Avenue provides access to an urban center and several employment concentrations in eastern Jefferson County. People traveling from the east to access these areas will likely use Mineral Avenue. This project will help them navigate through the intersection more quickly and safely than before.

Douglas County

For people who live and work to the south in Highlands Ranch, Sterling Ranch, and other areas or western Douglas County, Santa Fe Drive is the most direct route to access Denver and the many regional amenities that are to the north. When this project is complete, people traveling to and from the south through this intersection will be able to do so with more convenience and increased safety.

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

Growth Challenges (2040 MVRTO, pp. 9)

Population & Economic Growth

This project will provide the capacity improvements currently needed at this intersection, as well as the future capacity needs as a mix of residential, retail, restaurant and office uses are built adjacent to the project. The current study has indicated removing left turns from the Santa Fe Drive and Mineral Avenue signal phasing will provide more green time to the through movements which is expected to reduce congestion. This project proposes using quad roads in the northwest and southwest corners to accomplish this goal.

Land Development Challenges (pp. 9)

Location of Growth

By relieving the current congestion at the intersection and planning for future traffic volumes, this project is accommodating the growth that is taking place in the immediate vicinity as well as this quadrant of the DRCOG region.

Social Challenges (pp. 10)

Increased Travel

As mentioned above, this project accounts for the projected travel increases based on nearby development as well as increased travel expected from overall regional growth.

Transportation Challenges (pp. 13)

Traffic Congestion

By removing left turns from the signal phasing and increasing green time for through movements, this project will relieve congestion at the intersection. Because more than two-thirds of collisions at this intersection are rear accidents (a common symptom of congestion) this project is also expected to improve safety at the intersection.

Traffic Crashes

By increasing through movement capacity this project will help ease congestion, which will help to decrease the rear end accidents and improve safety.

Environmental Challenges (pp. 17)

Air Quality

Traffic congestion results in vehicles burning more fuel, which adds to air pollution in surrounding areas. This project will look to alleviate congestion at this intersection and will help improve nearby air quality.

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?

Vital Transportation Infrastructure

According to recent counts, ADT on Santa Fe Drive in this area is about 57,000 vehicles a day and as much as 9.3% of that is from trucks according to CDOT. This indicates that Santa Fe Drive is a route that is heavily utilized for both commuting and commerce and is a piece of transportation infrastructure that is relied on by the regional economy. By alleviating the congestion at this regional bottleneck, this project will improve regional economic resilience by reducing travel times and helping to increase productivity.

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

Access to LRT

In the northeast corner of the Santa Fe Drive and Mineral Avenue intersection is Mineral Station, which provides direct access to Downtown Denver via light rail transit (LRT). Because so many people drive to this station to access LRT, the Park and Ride in the northwest corner of the intersection is regularly full by 7:00 AM on weekdays, and roughly 75% of the vehicles have been shown to be from outside the RTD district. By improving operations at this intersection, this project will provide more convenient and safer access to the Mineral Station, which will grant greater access to the regional transit network.

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

Currently the City of Littleton is seeking a financial partnership with Arapahoe County, RTD and the developer of the property in the southwest corner of the intersection, but no formal agreements have been reached.

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)**.

Within a one (1) mile radius of the intersection there are a number of people considered to be part of a vulnerable population. This project will help ease congestion and improve safety at the intersection and, thus, improve access to the seven (7) nearby health facilities for people who need to travel through the intersection. Assuming the development to the southwest moves forward, all of the quad road options would include wide sidewalks and dedicated and/or protected bike infrastructure, which would improve mobility options for pedestrians and bicyclists.

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

As described above, there is an opportunity to provide additional bike and pedestrian infrastructure with construction of a quad road both in the northwest and southwest corners of the intersection. This would increase reliability of the multimodal network by expanding the areas and amenities to which access is provided.

For any of the existing multimodal facilities that are impacted by construction, this project will at least replace in kind, but will also look to upgrade facilities, where practicable.

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

As described above, the current study examining this intersection is recommending the installation of two quad roads at the northwest and southwest corners of the intersection. This will remove left turns from the Santa Fe Drive and Mineral Avenue signal phasing, which will allow more green time for through movements and thereby help ease congestion at the intersection. Since rear end accidents are often associated with congestion, easing congestion at this intersection is expected to help decrease rear end collisions, improving intersection safety.

Additionally, the southwest quad road will include wide sidewalks and dedicated bike infrastructure to provide safer access to the Mineral Station for bicyclists and pedestrians going to and from the development in the southwest corner.

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

Santa Fe Park & Sterling Ranch

The development planned in the southwest corner of the intersection will have about 1,320 dwelling units, 185,000 square feet of office space, 42,000 square feet of retail space, and 45,000 square feet of restaurant space, which will result in about 24,700 vehicle trips per day, most of which will need to use the Santa Fe Drive and Mineral Avenue intersection for access to the site. In addition, Sterling Ranch, when built out, will consist of roughly 10,000 units generating roughly 94,000 estimated daily trips. In the analysis for this project, future growth estimates determined that nearby development and regional growth could result in up to 141,000 vehicles a day passing through the Santa Fe Drive and Mineral Avenue intersection. This project will facilitate this growth by providing capacity improvements for the traffic these two developments are expected to generate, in addition to other expected regional growth.

[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*

Additional Multimodal Infrastructure

The conceptual design for this intersection shows a quad road in the northwest and southwest corners of the intersection. At buildout, the development planned for the southwest corner of the intersection will have a mix of residential, office, retail, and restaurant uses on the site. Assuming this development is still being pursued during final design, this project would establish dedicated and/or protected bike infrastructure and wide sidewalks adjacent to the quad road. In addition, this project will provide intersection treatments for all modes from the quad road through the Platte River Parkway and Mineral Avenue intersection to help pedestrians and cyclists safely transition through the intersection and make connections with the Mary Carter Greenway, Mineral Avenue Trail (along the north side of Mineral Avenue) and the Mineral Station.

As part of the northwest quad road through the RTD Mineral Station, efforts could be coordinated with the currently on-going South Platte Working Group East-West Connectivity Study. This study has identified projects to improve pedestrian and bicycle connectivity from east and west of the LRT station, and with the Mary Carter Greenway and Mineral Trail.

Preserves Multimodal Connections

Where this project impacts existing multimodal infrastructure, existing facilities will, at least, be replaced in kind and, where practicable, enhanced. Many of these details will be determined during final design.

[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*

Access to RTD Park n Ride

As mentioned above, the intersection improvements at Santa Fe Drive and Mineral Avenue that are part of this project will help ease congestion at the intersection and will allow people traveling to the Mineral Station Park and Ride to gain access with greater convenience and increased safety.

Additional Multimodal Infrastructure

As discussed above, this project will provide additional multimodal infrastructure along the quad road in the southwest corner of the intersection and through the Platte River Parkway and Mineral Avenue intersection. This additional infrastructure will provide multimodal access for residents and employees of the adjacent development to and from the Mineral Station and nearby trails.

Additional Intersection Capacity

The traffic volume at this intersection is expected to increase by nearly 30% in the next 5-10 years and by as much as 60% by 2040. This project will add the needed capacity to the intersection to accommodate short and mid-term growth, which will provide greater access to the Mineral Station and less delay for drivers who depend on either of these corridors. This project will also set the stage for future grade separation, if recommended by the US 85 PEL (from I-25 to C-470), by providing a detour route around the intersection.

[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

Congestion Relief

Ground-level ozone, greenhouse gases, carbon monoxide, particulate matter, and other air pollutants are the [major pollutants produced from vehicle emissions](#). Traffic congestion has been well documented to result in more fuel burning, which leads to more air pollution in the areas near congestion. This project will improve operations at the Santa Fe Drive and Mineral Avenue intersection, which will help alleviate congestion and improve air quality. This project is expected to delay by 1m 45s per vehicle.

[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

Preserves Multimodal Connections

Though this project will not complete missing links in the regional trail infrastructure, where existing multimodal infrastructure is impacted facilities will at least be replaced in kind and, where practicable, enhanced. Many of these details will be determined during final design. As mentioned above, additional bike and pedestrian infrastructure is being planned for the quad road to the southwest of this intersection, while coordination will be addressed with projects recommended as part of the South Platte Working Group study in the northwest corner.

[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

Additional Multimodal Infrastructure

As discussed above, this project will provide additional multimodal infrastructure along the quad road in the southwest corner of the intersection and through the Platte River Parkway and Mineral Avenue intersection. This additional infrastructure will provide the opportunity for people who live and work in Santa Fe Park to bike, walk, and access transit at the Mineral Station more safely. Several studies have shown a link between increased [walking](#) and [biking](#) for people who live in walkable and bikeable neighborhoods, this project will increase these characteristics in the Santa Fe Park development.

[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

Improved Flow of Goods & Services

While this project will not inherently improve health, education, income, and opportunity disparities, the flow of people, goods, services and information within and through the Santa Fe Drive and Mineral Avenue intersection will improve and delay is expected to decrease by 1m 45s per vehicle. For people who use this intersection to

access healthcare, education or employment, they will be able to do so in less time.

[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*

Regionally Significant Route

In this area, Santa Fe Drive has an ADT of about 57,000 vehicles, with more than 9% consisting of truck traffic, which shows the importance of this road in terms of commerce and regional economic activity. Though this project may not have a direct impact on subregional economic health and vitality, alleviating congestion at this intersection will help improve the flow of goods and services for businesses that rely on this corridor and travel through this intersection as part of regular business operations.

Regional Transit Access

According to RTD's license plate surveys, roughly 75% of the cars parked at the Mineral Station Park and Ride are from outside the RTD district. This station provides access to jobs and economic activity throughout the region, but specifically to Downtown Denver and the Denver International Airport. This project will provide safe and more convenient access to this station and will contribute to the subregion'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?

20%

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	3,365
2. Population and Employment	

Year	Population within 1 mile	Employment within 1 mile	Total Pop and Employ within 1 mile
2020	8,637	2,642	11,279
2040	10,394	3,692	14,086

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) <i>Provide supporting documentation as part of application submittal</i>	240	360
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)	60	90
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)	60	90
6. = Number of SOV one-way trips reduced per day (#3 – #4 – #5)	120	180
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)	1,080	1,620
8. = Number of pounds GHG emissions reduced (#7 x 0.95 lbs.)	1,026	1,539
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	200
2. Population and Employment	

Year	Population within 1 mile	Employment within 1 mile	Total Pop and Employ within 1 mile
2020	8,637	2,642	11,279
2040	10,394	3,692	14,086

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.	50	25
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)	25	13
5. = Initial number of new bicycle trips from project (#3 – #4)	25	12
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)	8	4
7. = Number of SOV trips reduced per day (#5 - #6)	17	8
8. Enter the value of {#7 x 2 miles} . (= the VMT reduced per day) (Values other than 2 miles must be justified by sponsor)	34	16
9. = Number of pounds GHG emissions reduced (#8 x 0.95 lbs.)	32	15
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)	350
2. Population and Employment	

Year	Population within 1 mile	Employment within 1 mile	Total Pop and Employ within 1 mile
2020	8,637	2,642	11,279
2040	10,394	3,692	14,086

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	80	120
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)	40	60
5. = Number of new trips from project (#3 – #4)	40	60
6. Enter number of the new trips produced (from #5 above) that are replacing an SOV trip. (Example: {#5 X 30%} or other percent, if justified)	12	18
7. = Number of SOV trips reduced per day (#5 - #6)	28	42

8. Enter the value of {#7 x .4 miles} . (= the VMT reduced per day) (Values other than .4 miles must be justified by sponsor)	11	17
9. = Number of pounds GHG emissions reduced (#8 x 0.95 lbs.)	10	16
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:		

D. Vulnerable Populations

Use Current Census Data	Vulnerable Populations	Population within 1 mile
	1. Persons over age 65	1,973
	2. Minority persons	745
	3. Low-Income households	197
	4. Linguistically-challenged persons	13
	5. Individuals with disabilities	283
	6. Households without a motor vehicle	119
	7. Children ages 6-17	1,134
	8. Health service facilities served by project	7

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	89,000
2. 2040 ADT estimate	141,000
3. Current weekday vehicle hours of delay (VHD) (before project)	965

Travel Delay Calculations	Year of Opening
4. Enter calculated future weekday VHD (after project)	250
5. Enter value of {#3 - #4} = Reduced VHD	715
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)	1,000
7. After project peak hour congested average travel time reduction per vehicle (includes persons, transit passengers, freight, and service equipment carried by vehicles). <i>If applicable, denote unique travel time reduction for certain types of vehicles</i>	105 seconds
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 <i>(most recent 5-year period of data)</i>		Sponsor must use industry accepted crash reduction factors (CRF) or accident modification factor (AMF) practices <i>(e.g., NCHRP Project 17-25, NCHRP Report 617, or DiExSys methodology)</i> .
Fatal crashes	1	
Serious Injury crashes	11	
Other Injury crashes	0	
Property Damage Only crashes	248	
2. Estimated reduction in crashes <u>applicable to the project scope</u> <i>(per the five-year period used above)</i>		
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	Good
2. Describe current pavement issues and how the project will address them. Santa Fe Drive has asphalt that was recently been milled and overlaid, but Mineral Ave has concrete that has some wear and tear and section separation. If this intersection is reconfigured, the pavement would be replaced.	
3. Average Daily User Volume	89,000

Bicycle/Pedestrian/Other Facility

4. Current bicycle/pedestrian/other facility condition	Good
5. Describe current condition issues and how the project will address them. When the intersection is reconfigured any multimodal facility will be, at least, restored to the same facility as before construction. However, through the design process the City of Littleton will look for opportunities to upgrade facilities to dedicated and/or protected when practicable.	
6. Average Daily User Volume	550

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	0
I. Other Beneficial Variables <i>(identified and calculated by the sponsor)</i>	
1.	None
2.	None
3.	None
J. Disbenefits or Negative Impacts <i>(identified and calculated by the sponsor)</i>	
1. Increase in VMT? <i>If yes, describe scale of expected increase</i>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
2. Negative impact on vulnerable populations None anticipated	
3. Other: None	

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. The conceptual design for this project is nearing completion, and, once funding is secured, will be ready to move into final design.

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.

Development in the Southwest Corner

One of the challenges with this project is coordination with the development of the land adjacent to the intersection in the southwest corner. The City of Littleton has been discussing design alternatives with the developer and, though the quad road is the preferred design alternative, discussions on how to make the system work with the proposed development and conceptual site plan are currently taking place. These discussions should be completed by the summer of 2019.

Coordination with RTD & CDOT

Another challenge with this project is the coordination that will need to take place with CDOT and RTD. This project will impact US-85, which is a CDOT facility, and the Mineral Station Park and Ride, which is owned by RTD. The City of Littleton has started initial coordination with both CDOT and RTD on this project, but as the project enters final design closer coordination will need to occur.

3. Are there other environmental or controversial issues associated with the project?

No issues are expected aside from the standard environmental procedures.

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

Regionally Significant Routes

In this areas, Santa Fe Drive has an ADT of about 57,000 vehicles, with more than 9% consisting of truck traffic, which shows the importance of this road in terms of commerce and regional economic activity. Mineral Avenue is one of a few east/west arterials that spans from C-470 in the foothills to I-25 and serves people from multiple subregions and municipalities. Given these factors, this project will positively impact transportation to and from Littleton, Englewood, Sheridan, Centennial, Highlands Ranch, Columbine Valley, Jefferson County, Douglas County, and Arapahoe County.

5. Does the agency have capacity and expertise to manage a federal project?

a. Explain experience, approach, etc.

Yes, the City of Littleton has managed federally funded transportation projects successfully in the past. The most recent example is the Broadway and County Line Road Intersection, and, in addition, four other projects are currently underway.

There will be both a Project Manager to ensure the project is completed correctly and on time, and a Grant Manager to ensure project expenditures, timelines, and documentations meet the standards required by the TIP Program.

6. Is the project a next logical phase of a project funded in previous TIP cycles?

No.

7. Of the partnerships described in Section A, Question 7, are the partnerships providing funding?

a. Describe the partnerships and funding of such.

No.

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

As this area of the DRCOG region experiences more growth, this project will become more and more critical to help the regional transportation network function effectively. DRCOG has already identified this intersection as a regional ‘bottleneck’ and the congestion, delay, and safety problems will only grow worse if not addressed soon. This project will make significant operational improvements to the intersection which will benefit people and businesses from across the region. Additionally, if the US 85 PEL determines that grade separation is necessary at this intersection, this project will provide a ready detour to accommodate traffic during construction.