

Part 1

Base Information

1. Project Title	13th Avenue Multimodal Mobility Corridor Study	
2. Project <i>Start/End</i> points or Geographic Area <i>Provide a map with submittal, as appropriate</i>	12 th Avenue/Yosemite (boundary between Denver and Aurora), north to 13 th Avenue at Boston Street, across Chambers Road to 12 th Avenue, and ending at 12 th Avenue/High Line Canal Trail - <i>Refer to map provided with submittal</i>	
3. Project Sponsor (<i>entity that will construct/ complete and be financially responsible for the project</i>)	City of Aurora	
4. Project Contact Person, Title, Phone Number, and Email	Mac Callison, Transportation Planning Supervisor, 303-739-7256, Mcalliso@auroragov.com	
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:	<p>Arapahoe County Bicycle and Pedestrian Master Plan, 2017 (http://www.co.arapahoe.co.us/1594/Bicycle-and-Pedestrian-Master-Plan, pages: 41 and 59)</p> <p>Fitzsimons Area Wide Multi-modal Transportation Study, 2009 (https://www.auroragov.org/UserFiles/Servers/Server_1881137/Image/Departments/Development/Fitz.pdf, pages: ES-6-9, 21, 51, 72, 73, and 74)</p> <p>Bicycle and Pedestrian Master Plan, 2012 (https://www.auroragov.org/business_services/planning/plans_and_studies/transportation_planning/bicycle_and_pedestrian_planning, pages: 17 and 46)</p> <p>Aurora Bicycle and Pedestrian Plan – Recommended Bicycle Network</p>
	<input checked="" type="checkbox"/> Other(s):	<p>DRCOG Active Transportation Plan, 2019, (https://drcog.org/sites/default/files/resources/DRCOG_ATP.pdf, page 34-35)</p>
	<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**.

- Rapid Transit Capacity (2040 FC RTP)
- Transit Other:
- Bicycle Facility
- Pedestrian Facility
- Safety Improvements
- Roadway Capacity or Managed Lanes (2040 FC RTP)
- Roadway Operational

Grade Separation

- Roadway
- Railway
- Bicycle
- Pedestrian
- Roadway Pavement Reconstruction/Rehab
- Bridge Replace/Reconstruct/Rehab
- Study
- Design
- Transportation Technology Components
- Other:

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

Metro Vision identifies automobile dominance as being a problem/issue in the region. Although 13th Avenue is a designated bicycle route by the City of Aurora's and Arapahoe County's Bike and Pedestrian Master Plan and DRCOG's Regional Active Transportation Plan, it was designed primarily for vehicular mobility. Most of the roadway is a wide unstriped cross section, varying between 40' and 60' throughout the 4-mile stretch (Yosemite to Chambers). The road is shared between cyclists and motorists, and in 2017 showed an Average Daily Traffic (ADT) volume of 2,723 vehicles and only 17 average daily cyclists. This wide swath of concrete/asphalt pavement has led to perceived traffic speeding and a sense of insecurity and high level of stress for bicyclists and pedestrians using the corridor.

The City's Complete Streets Consortium, 2018, also identified the following problems along the corridor:

- Need for a continuous bicycle facility between Denver's 12th Avenue Bicycle Route and Aurora's 13th Avenue corridor through Aurora (this route links Denver to major employers and medical services along 13th Avenue in Aurora including the Fitzsimons Innovation Community & Anschutz Medical Campus)
- Lack of safe and convenient bike and pedestrian access to the 13th Avenue LRT Station from the east and the west
- Lack of safe and convenient access to Vaughn Elementary School and other schools in the area
 - Some vehicles do not yield to pedestrians crossing the street in front of Vaughn Elementary School
- Lack of safe and convenient bicycle and pedestrian connections along the 13th Avenue corridor to the Fitzsimons Innovation Community & Anschutz Medical Campus, and residential areas south of East Colfax Avenue
- Lack of protected crossings of arterials along 13th Avenue, specifically: at Peoria Street, Potomac Street, and Chambers Road

This study will investigate ways to improve the pedestrian and bicycle environment and provide safe, comfortable, less stressful and convenient multimodal travel options for all travelers.

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

This request is to help fund a multimodal corridor study for 13th Avenue in Aurora between the City and County of Denver boundary (Yosemite St) and the High Line Canal Trail (east of Chambers Road). This corridor, together with Denver's 12th Avenue Bike Corridor on the west and Toll Gate Creek Trail and High Line Canal Trail on the east, serves as an important east-west bicycle connection linking downtown Denver, Aurora, Adams and Arapahoe Counties, as well as the 13th Avenue LRT Station and eleven schools along the corridor. It is part of important regional bicycle networks throughout Denver, Aurora, and the greater region and provides an

alternative route for cyclists adjacent to the highly congested major east-west travel corridor, East Colfax Avenue, a portion of which is a Metro Vision designated Urban Center. The study will include system planning, conceptual design and a public outreach process for developing an enhanced multimodal corridor plan with special emphasis on pedestrian and bicycle travel, including consideration of area-wide multimodal transportation network and individual facility characteristics analyses, alternative cross-sections, facility improvements, wayfinding, pavement markings, intersection crossing enhancements, bicycle priority signalization, safe routes to schools, traffic calming treatments and connectivity to 13th Avenue LRT station, adjacent corridors and connections to the Anschutz Medical Campus.

The study will include a robust public involvement process to engage local residents, local business owners, schools, and commuters. This will include outreach to the Fitzsimons Innovation Community & Anschutz Medical Campus, Aurora Public Schools and the 11 schools along the corridor, and area residents and local businesses in the vicinity. This is also an area with high concentrations of Environmental Justice (EJ) and other vulnerable populations, which include low-income and minority populations. Outreach will emphasize including these historically under-served and under-represented populations throughout this study process.

10. What is the status of the proposed project?

Various local plans have recommended the study, including the *Arapahoe County Bicycle and Pedestrian Master Plan (2017)*; *Aurora’s Bicycle and Pedestrian Master Plan (2012)*; and *Fitzsimons Area Wide Multi-modal Transportation Study (2009)*. This corridor has also been identified as a future Regional Active Transportation Corridor by the DRCOG’s Active Transportation Plan.

The study area was also further investigated through a Complete Streets Consortium in 2018, where staff from the Cities of Aurora, Arvada, and Westminster conducted a site visit of the 13th Avenue Corridor and identified a number of improvements needed along the corridor.

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

Yes No

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

A. Project Financial Information and Funding Request

1. Total Project Cost		\$500,000
2. Total amount of DRCOG Subregional Share Funding Request	\$295,000	59% 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 Aurora	\$205,000	41%
	\$	
	\$	
	\$	
	\$	
	\$	

Total amount of funding provided by other funding partners <i>(private, local, state, Regional, or federal)</i>	\$205,000
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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	\$295,000	\$	\$	\$	\$295,000
State Funds	\$	\$	\$	\$	\$0
Local Funds	\$205,000	\$	\$	\$	\$205,000
Total Funding	\$500,000	\$0	\$0	\$0	\$500,000
4. Phase to be Initiated <i>Choose from Design, ENV, ROW, CON, Study, Service, Equip. Purchase, Other</i>	Study	Choose an item	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. Subregional significance of proposed project

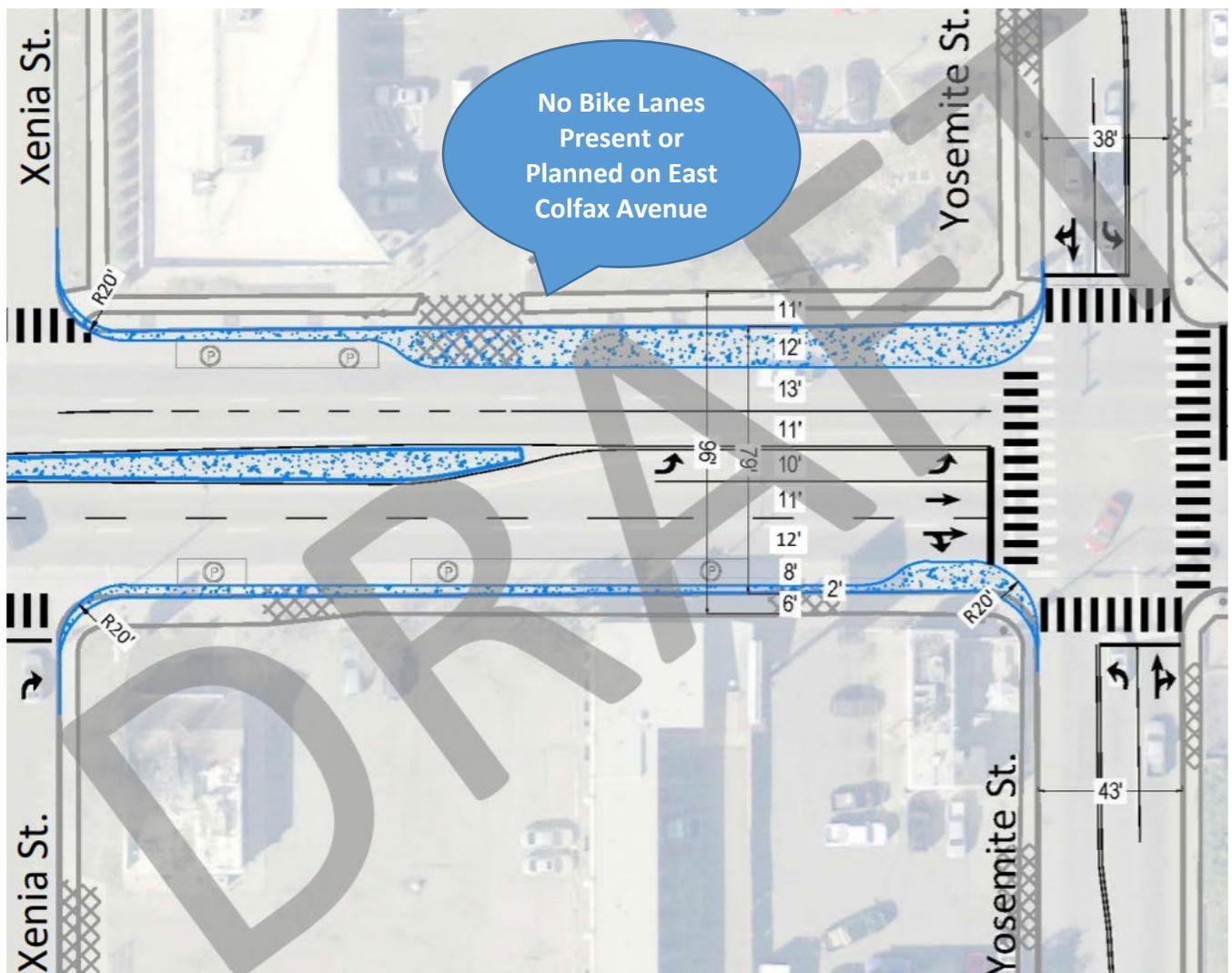
WEIGHT **40%**

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?

This designated bicycle route links to the regional bicycle network and provides an adjacent route to one of the busiest and most congested east-west corridors in the metro area, East Colfax Avenue, which hosts ADT volumes of 30,000 to 50,000 through this segment. Colfax Avenue, served by RTD Bus Routes 15 and 15L, also has over 20,000 daily riders, the highest bus ridership route in the RTD system. Colfax Avenue does not have bike lanes and is not planned to have bike lanes refer to the East Colfax Avenue planned cross-section directly west of this project boundary, which lays out a plan for two travel lanes in each direction on Colfax Avenue, and wide sidewalks on both sides of Colfax Avenue. With the high level of pedestrian activity and vehicular traffic volumes on East Colfax Avenue, thru bicycle travel is not recommended in an area like this.

East Colfax Avenue Planned Cross-section at Yosemite Street – Colfax Connections, City of Denver, 2018



13th Avenue provides the preferred bicycle route in this area adjacent to East Colfax Avenue. It connects commuters with a connection to Downtown Denver, RTD's 13th Avenue LRT Station, eleven K–12 schools (within

one-quarter mile), the High Line Canal Trail, the Westerly Creek Trail, the Toll Gate Creek Trail, and the Fitzsimons Innovation Community, the CU Anschutz Medical Campus, Childrens Hospital Colorado, University of Colorado School of Medicine, and Veterans Affairs Medical Center. Furthermore, improving this corridor will support local accessibility for residents living in the nearby neighborhoods by providing them with a safe, comfortable, and convenient connection to basic services along East Colfax Avenue, which will enhance economic vitality for businesses on this corridor segment.

The corridor was identified to be studied further in the 2012 *Bicycle and Pedestrian Master Plan* and has been discussed in subsequent plans, including the city's recent complete streets initiative.

Refer to the maps provided depicting the regional bicycle network, nearby healthcare facilities, schools and transit connections in the vicinity of the corridor.

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

Although the study area is entirely within the city of Aurora, the corridor is connected to the Denver metro region via the on-street bicycle network and the off-street regional trail system. The study area begins at the Denver/Aurora city boundary and 13th Avenue will fill a gap in quality bicycle facilities throughout this nearly 10 mile Bike Route along 12th Avenue and/or 13th Avenue. The route connects an amalgam of employment centers, schools, residences, entertainment venues and transit offers. Additionally, by directly linking 13th Avenue bike and pedestrian facilities to the High Line Canal Trail, the project benefit area will expand far beyond the immediate project limits of the study area, including greater Denver, Englewood, Littleton, Centennial, Highlands Ranch and areas in unincorporated Adams County, Arapahoe County and Douglas County.

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

This project will benefit Denver, Arapahoe and Adams Counties Subregions most directly. However, the study will benefit the entire region because it will provide a direct multimodal connection to major regional destinations, including the Fitzsimons Innovation Community & Anschutz Medical Campus, various medical services and major employment opportunities and K–12 schools just off the corridor. The improved non-motorized facilities, paired with the direct connection to the RTD high-frequency transit network (R Line at the 13th Avenue Station and East Colfax routes 15 and 15L), are expected to result in significant improvements for bicycle and pedestrian travel and mode shift across the region and ultimately to reduce vehicle miles traveled (VMT) and greenhouse gas (GHG) emissions.

Refer to the maps provided which show the healthcare facilities and schools in the vicinity of the corridor.

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

The 13th Avenue Multimodal Mobility Corridor Study will set the stage to reduce dependence on single occupancy vehicle (SOV) use in one of the most socioeconomically diverse parts of the region. The study will recommend ways to improve the livability in north Aurora, one of the most diverse communities in the metro area, having 41 percent of the total population identify as a minority population (36,500 people) within one-mile of the corridor, according to current census data, compared to an average 32 percent across the greater region. The study will develop a context sensitive design to improve the livability along the corridor benefiting users of all ages and abilities. The improved mobility realm will deliver direct benefits to residents and travelers through this corridor, including enhancing non-motorized access to employment opportunities and basic services adjacent to the corridor, and expand connectivity beyond the study area by improving connections to RTD LRT and the planned Colfax Bus Rapid Transit (BRT) Line.

Safety and convenience will also be a priority of the study, with a keen focus on providing for a low-stress bicycle network that is comfortable for all ages and abilities. This will include: 1) developing continuous bicycle and pedestrian facilities along this designated bicycle route, 2) improving access to 13th Avenue LRT Station, 3) ensuring that adequate bicycle and pedestrian safety treatments are provided around nearby schools along the

corridor, 4) extending bicycle and pedestrian infrastructure improvements north to the Fitzsimons Innovation Community & Anschutz Medical Campus, and 5) improving safe crossings of arterials along 13th Avenue.

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?

The study will build on collaboration between area residents and business owners and seek to develop an adaptive corridor design based on the unique connectivity and livability issues in the area. The study will identify existing obstacles and barriers that currently dissuade local residents and regional commuters from traveling by foot or by bicycle in the area and develop a recommended design that will foster the creation of a sustainable and resilient local economy. Investments in multimodal improvements have been linked to overall health and economic benefits to users as well as property values of adjacent neighborhoods. The *Arapahoe County Bicycle and Pedestrian Master Plan, 2017*, cites *Economic and Health Benefits of Bicycling and Walking, 2016*, which estimated that there is a \$3.2 billion annual benefit from reduced mortality from bicycling and walking in Colorado and a \$1.6 billion annual economic contribution by individuals who bike and/or walk to access local industry.

The goal of the study will be to identify improvements and expanded mobility options for all users in the 13th Avenue Corridor and the Metro Vision identified existing and emerging urban centers, Colfax Avenue and 13th Avenue, respectively, see page 77-78 of Metro Vision Appendix B.

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

The project will focus on identifying improvements that will increase bicycle and pedestrian safety, comfort, and convenience along and adjacent to 13th Avenue. The corridor includes direct connections to major employment and health care institutions, and the regional bicycle and rail networks. It will improve important first- and last-mile connections to the 13th Avenue LRT station and 15 and 15L bus routes which serve over 20,000 daily riders, and are the highest ridership routes in RTD's system. The Federal Transit Administration (FTA) states that "walking, biking and public transportation are complementary modes of transportation: many people access public transportation by walking a short distance; others arrive by bicycle. The success of public transportation can often be limited by poor 'first and last mile' access to the system. Furthermore, safe walking and bicycling access can be important inducements to using public transportation" (FTA, *Final Policy Statement on the Eligibility of Pedestrian and Bicycle Improvements Under Federal Transit Law, 2011*). The recommendations from this study will provide an opportunity to further support ridership of the R line and the Bus Routes 15/15L as well as the future planned Colfax BRT route.

Refer to maps provided depicting the regional bicycle network and transit connections in relation to the corridor.

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

The matching fund for this project will be provided entirely by the City of Aurora. However, given the regional significance of this project, we will have multiple agency partners throughout the project, including, City and County of Denver, Anschutz Medical Campus, High Line Canal Conservancy, RTD and Aurora Public Schools, etc.

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)**.

The *2040 Metro Vision Regional Transportation Plan* identifies the 13th Avenue corridor as having geographic concentrations of low-income and minority populations—more than 7 percent of the population qualifying as a low-income household and more than 41 percent of the population identifying as a minority based on 2006–

2010 Census (see page 113 of 2040 *Metro Vision RTP*). The breakdown of vulnerable populations within 1 mile of the corridor is as follows:

Vulnerable Populations	Population within 1 Mile	Percent of Total Population
Persons Over Age 65	6,250	7%
Minority Persons	36,500	41%
Low-Income Households	6,500	7%
Linguistically-challenged Persons	12,500	17%
Individuals with Disabilities	5,500	6%
Households Without a Motor Vehicle	4,500	5%
Children Ages 6 to 17	16,500	18%
Total Population within 1 Mile (2020)	89,500	

Vulnerable populations are more likely to rely entirely on bike and pedestrian facilities and public transportation services as their essential or only means of transportation for their daily travel needs, such as travel to jobs, school, health care services and shopping, etc. The corridor study will seek to improve the mobility and the overall community livability in an area where these vulnerable populations are concentrated. Recommendations will include improved/expanded pedestrian and bike access to health care services, basic services, employment opportunities, educational services, and general mobility improvements both in the area and in the greater region via upgraded connections to RTD’s 13th Avenue LRT Station, Routs 15/15L, the planned Colfax BRT, other transit routes and the regional bicycle network.

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

The study will identify safe, comfortable, and convenient bicycle and pedestrian treatments throughout the corridor that are currently lacking; ultimately, providing a more reliable route for travel by bike or on foot. Specifically, this project will include system planning, conceptual design and neighborhood outreach for developing an enhanced multimodal corridor with special emphasis on pedestrian and bicycle travel, including consideration of area-wide multimodal transportation network and individual facility characteristics analyses, alternative cross-sections, facility improvements, wayfinding, pavement markings, intersection crossing enhancements, bicycle priority signalization, safe routes to schools, traffic calming treatments and connectivity to 13th Avenue LRT station, adjacent corridors and connections to the Anschutz Medical Campus. The implementation of these improvements will encourage more bicycling and walking in the area. Currently, walking and biking account for approximately 1 percent of the total daily traffic along 13th Avenue, according to traffic counts performed by the city in 2017. Comparatively, post-bicycle facility improvements, in 2015, at Old Wadsworth near 60th Avenue, observed 4 percent of users traveling on foot or by bike in the area. These two corridors, 13th Avenue and Old Wadsworth, provide an alternative route for non-motorized travel to busy vehicular thoroughfares, East Colfax Avenue and Wadsworth Boulevard, respectively.

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

The study will identify improvements to infrastructure for bicyclists and pedestrians traveling along the 13th Avenue corridor. Currently, sidewalks in the area are narrow and in some locations do not meet current Americans with Disabilities Act (ADA) requirements for sidewalk widths and bicyclists and motorists are sharing the same roadway, which is unsafe and stressful to both bicyclists and vehicular drivers.

Available crash data between 2015 and 2011, reveal that crashes are occurring nearly evenly across the 4-mile long corridor, indicating a systemic issue rather than a focused problem in key areas of the corridor. There were a total of 109 traffic incidents occurred between 2011 and 2015, 24 of which were classified as serious injury crashes and the remaining 85 were property damage only crashes.

Traffic Incidents 2011-2015

Fatal crashes	0
Serious Injury crashes	24
Other Injury crashes	0

Property Damage Only crashes 85

Several Before and After Studies were reviewed for similar corridor based multimodal improvement projects. The following describes some of the safety and security benefits that were observed post the project construction.

- Stone Way, Seattle Washington (four thru lane road converted to a two thru lane, with center turn lane and bike lanes)
 - 75% drop in speeding 10+ MPH
 - 6% drop in motor vehicle traffic
 - 35% increase in bicycle traffic
 - Crashes declined by 14%, injuries declined by 33%, and pedestrian injuries declined by 80%
- Ingersoll Avenue, Des Moines, WA (four thru lanes converted to two thru lanes and bike lanes)
 - 50% decline in crashes
 - Slightly higher volumes were reported during off-peak hours
 - Some negligible increases in travel times (>20 seconds)

This study seeks to identify a design that improves the safety and security for all users and anticipate that safety benefits will be similar to the projects described above.

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

This study will increase multimodal network connectivity in an existing urban area, the oldest in the city of Aurora (some subdivisions date back to the early 20th century and are part of “original Aurora” as depicted in *Aurora Places*, 2018), and will link to an identified emerging urban center at the 13th Avenue LRT Station and to an existing urban center along East Colfax Avenue. The city of Aurora seeks to maintain and strengthen the traditional character of this area, while targeting reinvestment through infill, redevelopment, and adaptive reuse. It is desired to promote a walkable network of streets with ample transit service to ensure a wide range of mobility options in the area (page 38 of *Aurora Places*, 2018). Nearly, 90,000 residents live within one-mile of the corridor (anticipated to grow to over 100,000 by 2040) in a mix of stable single family neighborhoods intermixed with multifamily at key nodes and is less than one-quarter mile from established employment centers including the Fitzsimons Innovation Community and Anschutz Medical Campus) and the East Colfax Avenue commercial area.

[MV objective 3](#)

Increase housing and employment in urban centers.

2. Will this project help establish a network of clear and direct multimodal connections within and between urban centers, or other key destinations?

Yes No

Describe, including supporting quantitative analysis

The corridor includes more than 4 miles of on-street shared facilities along 13th Avenue for cyclists and motorists. 13th Avenue connects two urban centers—the emerging 13th Avenue urban center, focused on the 13th Avenue Station, and the existing urban center of Colfax Avenue—and major destinations, such as the Fitzsimons Innovation Community and the CU Anschutz Medical Campus, which includes Childrens Hospital Colorado, CU Health, University of Colorado Hospital, and Veterans Affairs Hospital. This includes access to 33,500 employment opportunities within 1 mile in 2020 and an estimated 45,500 in 2040.

The study will recommend improvements to fill a gap in the quality of facilities for the existing regional bicycle network, for example, potentially recommending marked/separated bicycle lanes as opposed to shared lanes for bicycle and vehicle travel and upgrading sidewalks to meet ADA guidance. The study will also examine improvements to connections to East Colfax Avenue, the Fitzsimons Innovation Community & Anschutz Medical Campus, and the network of off-street trails that connect to the corridor. This may include a combination of recommended facility improvements and wayfinding signage.

[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

Currently, walking and biking account for only approximately 1 percent of the total daily traffic along 13th Avenue, according to traffic counts performed by the city in 2017. Comparatively, for post-bicycle facility improvements on Old Wadsworth near 60th Avenue, bicycle and pedestrian users accounted for 4 percent of the daily traffic in the area (based on counts performed in 2015). These two corridors, 13th Avenue and Old Wadsworth, provide an alternative route for non-motorized travel to busy vehicular thoroughfares, East Colfax Avenue and Wadsworth Boulevard, respectively. Improvements along 13th Avenue, such as ensuring that ADA standards are met or exceeded and exploring strategies to create multimodal connections between residential areas and the region’s existing employment centers, could produce similar or better results to what has been seen on Old Wadsworth.

Additionally, according to Metro Vision and the 2012–2016 American Community Survey, most workers in the region traveled alone in their automobiles to work. This area contains high concentrations of EJ populations:

- Low-income – 7% or 6,500 households
- Minority populations – 41% or 36,000 people

Minority populations are shown to be twice as likely to take transit or carpool to work, but they are less likely to bicycle, according to the *2040 Metro Vision Regional Transportation Plan*, pg. 115. Providing safe, comfortable and convenient alternatives is key to encouraging local residents to change this use pattern especially in an area with high concentrations of minority populations and low-income individuals.

[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 results of the study will include recommendations and documentation of reduction in ground-level ozone, GHG emissions, carbon monoxide, particulate matter, or other air pollution, but those are not known at this time. However, it is reasonable to assume that more people bicycling and walking in this area will have a positive benefit on air quality and the reduction of GHG emissions.

Regional Objective 6a references the following strategic initiatives that this study can and will incorporate based on past planning efforts performed in the city of Aurora (from MV objective 6 strategic initiatives):

- Facilitate communication among state, regional and local agencies to maximize the efficiency of the transportation network.
- Cooperatively develop mitigation strategies for transportation projects to address environmental effects.
- Support programs and public awareness campaigns that promote behavior shifts on an individual level that improve air quality and reduce GHG emissions.

[MV objective 7b](#)

Connect people to natural resource or recreational areas.

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

Describe, *including supporting quantitative analysis*

The 13th Avenue corridor is an important multimodal link that connects to the High Line Canal Trail, Toll Gate Creek Trail, Westerly Creek Trail and Sand Creek Gateway Trail, which provide connections to the following natural and recreational resources parallel to these facilities:

- Toll Gate Creek Greenway
- Delaney Farm
- Sand Creek Park
- Star K Ranch and Greenway
- Bluff Lake
- Cherry Creek State Park

[MV objective 10](#)

Increase access to amenities that support healthy, active choices.

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

Describe, *including supporting quantitative analysis*

The 13th Avenue Multimodal Mobility Corridor Study will identify improvements related to safety, comfort, and convenience throughout the 13th Avenue corridor and improve connections to adjacent destinations to encourage more multimodal travel, such as biking and walking, in the corridor. The study will address the needs of mobility-limited populations, which account for 6 percent of the total population in the corridor, compared to an average of 4.7 percent across the entire region. These improvements will support mobility not only for individuals with mobility limitations but also for individuals who seek to live an active, healthy lifestyle.

[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*

Metro Vision identifies this part of the region as having high concentrations of EJ populations and high percentages of other vulnerable population groups also exist, such as persons over the age of 65, linguistically-challenged persons, individuals with disabilities, households without a motor vehicle, and youth between the ages of 6 and 17.

Vulnerable Populations	Population within 1 Mile	Percent of Total Population
Persons Over Age 65	6,250	7%
Minority Persons	36,500	41%

Low-Income Households	6,500	7%
Linguistically-challenged Persons	12,500	17%
Individuals with Disabilities	5,500	6%
Households Without a Motor Vehicle	4,500	5%
Children Ages 6 to 17	16,500	18%
Total Population within 1 Mile (2020)	89,500	

These populations are the most susceptible to economic volatility and the most in need of reliable community services, including access to safe and reliable transportation, employment, housing, education, cultural, and recreational opportunities. The area is next to the region’s major employment center, Fitzsimons Innovation Community and Anschutz Medical Campus, which comprises approximately 25,000 employees currently and over 45,000 by 2040. These employment opportunities are all within reasonable biking and walking distances (less than three miles) of these populations living near the corridor. Improved facilities will enhance the viability of using alternative modes to get to work.

The 13th Avenue corridor will seek to identify challenges, barriers and solutions to accessing reliable transportation, employment, housing, education, cultural, and recreational opportunities and make recommendations that will likely include (from MV objective 13 strategic initiatives):

- Reducing first- and last-mile barriers to employment centers
- Connecting residents and visitors to local cultural, educational and natural amenities
- Facilitating public/private partnerships to improve first- and last-mile connections to high capacity transit services, with an emphasis on underserved populations
- Ensuring 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

[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*

Investing in bicycle and pedestrian infrastructure has been linked to economic health and vitality. The 2017 *Arapahoe County Bicycle and Pedestrian Master Plan* references a 2016 study that found that bicycling and walking contribute approximately \$1.6 billion annually to Colorado’s economy (Economic and Health Benefits of Bicycling and Walking, BBC Research & Consulting, October 2016).

Specifically, in this corridor, improved safety and convenient access to the Fitzsimons/Anschutz Medical Campus, the 11 schools within ¼ mile, and the other employment centers accessible via the 13th Avenue Station and the Toll Gate regional trail system will provide reliable multimodal transportation options to jobs throughout the region and therefore will contribute to the subregion’s economic health and vitality.

D. Project Leveraging

WEIGHT 20%

9. What percent of outside funding sources (non-DRCOG-allocated Subregional Share funding) does this project have?

41%

41%+ outside funding sources High
 31-40%Medium
 30% and belowLow

Part 3

Project Data Worksheet – Calculations and Estimates

(Complete all subsections applicable to the project)

A. Transit Use

1. Current ridership weekday boardings	14,421
2. Population and Employment	

Year	Population within 1 mile	Employment within 1 mile	Total Pop and Employ within 1 mile
2020	89,499	33,497	122,996
2040	102,890	45,438	148,328

Transit Use Calculations	Year of Opening	2040 Weekday Estimate
3. Enter estimated additional daily transit boardings after project is completed. <i>(Using 50% growth above year of opening for 2040 value, unless justified)</i> <i>Provide supporting documentation as part of application submittal</i>	14,421	21,631
4. Enter number of the additional transit boardings (from #3 above) that were previously using a different transit route. <i>(Example: {#3 X 25%} or other percent, if justified)</i>	3,605	5,407
5. Enter number of the new transit boardings (from #3 above) that were previously using other non-SOV modes (walk, bicycle, HOV, etc.) <i>(Example: {#3 X 25%} or other percent, if justified)</i>	3,605	5,407
6. = Number of SOV one-way trips reduced per day (#3 – #4 – #5)	7,211	10,817
7. Enter the value of {#6 x 9 miles} . (= the VMT reduced per day) <i>(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)</i>	64,899	97,353
8. = Number of pounds GHG emissions reduced (#7 x 0.95 lbs.)	61,654	92,485
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	17
2. Population and Employment	

Year	Population within 1 mile	Employment within 1 mile	Total Pop and Employ within 1 mile
2020	89,499	33,497	122,996
2040	102,890	45,438	148,328

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	89,499	33,497	122,996
2040	102,890	45,438	148,328

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) <i>(Values other than .4 miles must be justified by sponsor)</i>	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

Use Current Census Data	Vulnerable Populations	Population within 1 mile
	1. Persons over age 65	
2. Minority persons		36,500
3. Low-Income households		6,500
4. Linguistically-challenged persons		12,500
5. Individuals with disabilities		5,600
6. Households without a motor vehicle		4,300
7. Children ages 6-17		16,500
8. Health service facilities served by project		50

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	2,723
2. 2040 ADT estimate	0
3. Current weekday vehicle hours of delay (VHD) (before project)	0

Travel Delay Calculations	Year of Opening
4. Enter calculated future weekday VHD (after project)	0
5. Enter value of {#3 - #4} = Reduced VHD	0
6. Enter value of {#5 X 1.4} = Reduced person hours of delay <i>(Value higher than 1.4 due to high transit ridership must be justified by sponsor)</i>	0
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>	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 (<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	0	
Serious Injury crashes	24	
Other Injury crashes		
Property Damage Only crashes	85	
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	Choose an item
2. Describe current pavement issues and how the project will address them.	
3. Average Daily User Volume	0

Bicycle/Pedestrian/Other Facility

4. Current bicycle/pedestrian/other facility condition	Choose an item
5. Describe current condition issues and how the project will address them.	
6. Average Daily User Volume	0

H. Bridge Improvements

1. Current bridge structural condition from CDOT 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

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:

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?

This Study is the first step that will ultimately lead to implementation of the transportation improvements.

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.

No anticipated challenges at this study level are recognized at this time.

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

Not at this time. The recommendations from this study will be evaluated and conceptually designed to minimize environmental impacts while meeting the Study goals. The public and stakeholder outreach process will identify potential issues and seek to mitigate them as effectively as possible.

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

The anticipated study will recommend improvements in the livability, attractiveness, and perceived safety of the adjacent neighborhoods. Enhancing the pedestrian and bicycle infrastructure will encourage more utility and recreational activities in the area by improving connections. Therefore, it is considered subregionally significant and transformational.

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

- a. Explain experience, approach, etc.

Yes. Aurora has a track record of successfully completing TIP funded projects on time. Specifically, the city has successfully completed eight TIP funded Station Area Studies and delivered great value and benefits to the city and region.

The Transportation Project Delivery (TPD) group within Public Works is responsible for TIP project management from design through construction as well as planning and operational studies. Several project managers have completed TIP projects in the recent past, gaining valuable experience that will be applied to the city's future TIP projects. The Parker Road/Quincy Avenue Operational Study was managed by Cindy Colip and resulted in recommended interim improvements to the network. The 23rd Avenue Bike/Ped Path at Fitzsimons Station included design and construction of a multi-use trail from Fitzsimons Light Rail Station to Ursula Street then south into the Fitzsimons campus. This project was managed through the design by Brad Richardson, and construction activities were managed by Rhaj Khanzadeh, an ex-CDOT construction management specialist. More recently, the Westerly and Toll Gate Creek Connections to Florida Station project, establishing more than 3 miles of protected, one- and two-way bicycle tracks east and west of Florida Station, has just wrapped up the design phase and is entering the construction phase. This project is being managed by Steve Gardner, with Jana Krell taking on the construction management duties. For most of the city's TIP projects, the TPD group hires private construction management and inspection firms to monitor day-to-day construction activities and handle materials testing.

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

Yes, Toll Gate Creek Trail 1 and 2, this would extend the trail improvements into the neighborhood. In addition, the city is funding a sidewalk improvement project on 13th Avenue between the RTD 13th Avenue LRT Station and Sable Blvd. The improvements recommended by this project will be an extension and complement of the existing and programmed improvements along the 13th Avenue Multimodal Transportation Corridor.

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

No, the project partners and supporting agencies are not providing funding. The City of Aurora is committed to supplying the necessary local funding for this important multimodal improvement study.

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

No