Part 1 Base Information

1. Project Title	**Havana Street Transit Improvements**
2. Project *Start/End* points or Geographic Area *Provide a map with submittal, as appropriate*	Montview Blvd on the north and Dartmouth Avenue on the south
3. Project Sponsor *(entity that will construct/ complete and be financially responsible for the project)*	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?	☒ Yes ☐ No *If yes, provide applicable concurrence documentation with submittal*

6. What planning document(s) identifies this project?

☐ DRCOG 2040 Fiscally Constrained Regional Transportation Plan (2040 FCRTP)

☒ Local plan:	Network Analysis of Potential Improvements to Bus Speed, Delay, & Access (page 26) RTD Transit Priority Analysis of Select Corridors (page 25 through 29) Aurora Comprehensive Plan (page 67, 69)
☐ Other(s):	

Provide link to document/s and referenced page number if possible, or provide documentation with submittal

7. Identify the project's **key elements**.

- ☐ Rapid Transit Capacity (2040 FCRTP)
- ☒ Transit Other: Operational
- ☐ Bicycle Facility
- ☒ Pedestrian Facility
- ☒ Safety Improvements
- ☐ Roadway Capacity or Managed Lanes (2040 FCRTP)
- ☐ Roadway Operational

Grade Separation
- ☐ Roadway
- ☐ Railway
- ☐ Bicycle
- ☐ Pedestrian

- ☐ Roadway Pavement Reconstruction/Rehab
- ☐ Bridge Replace/Reconstruct/Rehab
- ☐ Study
- ☒ Design
- ☐ Transportation Technology Components
- ☐ Other:

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

Havana Street is an important north-south multimodal transportation corridor in the City of Aurora that passes through numerous commercial areas and residential neighborhoods. The Havana Street Corridor serves vital mobility and connectivity needs for residents as well as businesses, employees, commercial customers and

commuters within the corridor area as well as the eastern part of the metropolitan area. The entire corridor is congested throughout the day with approximately 48,000 vehicles per day currently on the busiest section. It will become more congested in the future with the daily vehicle volumes growing to 76,000 in 2040 per DRCOG's travel demand forecast.

The Havana Street corridor is served by RTD Bus Route 105 which provides important regional transit services. The route has 5200 daily boardings and 1900 average load per RTD's "Network Analysis of Potential Improvements to Bus Speed, Delay, & Access" report completed in March 2016. It connects the Southeast Corridor Light Rail Transit services, including R, F and H Lines, at the Southmoor Station and the East Commuter Rail, A Line, at the Central Park Station. The Bus Route 105 also serves the entire east metro area transit travel needs by connecting with nine east-west bus routes, including Bus Routes 20, 15/15L, 10, 6, 3, 11, 21 and 83L. The transfer with Bus Routes 15L and 15 at Colfax Avenue, the busiest and only 24 hour bus route in the RTD system, has approximately 1,800 daily riders at the Colfax Avenue/Havana Street stop, one of the highest bus boarding locations in the region.

The Havana Corridor is one of the seven transit priority corridors identified by RTD[1] for the following improvements:

- Improving bus travel speed and reducing bus travel time - the speed analysis for Route 105 shows that both northbound and southbound trips experience very slow operating speeds during peak hours.
- Improving bus punctuality - Punctuality has been another recurring problem. Buses typically depart up to two minutes late in the PM peaks, and can depart as much as six minutes late.
- Improving bus stop amenities and integrating stops into the adjacent land use and urban form for better accessibility and amenity - Bus stops also do not have adequate amenities to provide bus riders with a safe, convenient and comfortable environment to wait prior to boarding buses.
- Reducing bus transfer distance - There are many transfer activities between Bus Route 105 and the many east-west bus routes. Some of the transfers require a lengthy walking distance.

The implementation of this project will help to achieve a variety of Metro Vision objectives and address key TIP Focused Areas endorsed by the DRCOG Board. Following are specifics:

- This project will increase the reliability of the existing multimodal transportation network by improving bus running speed and punctuality.

- This project will improve mobility infrastructure and services for vulnerable populations. There are currently 134,900 total population within one mile of the Havana Street Corridor. The total population will increase to 140,000 in 2040. The Havana Street Corridor has a high concentration of vulnerable populations currently and the vulnerable populations will increase more in the future. There are 79,800 minorities which compose more than half of the residents within one mile of the corridor, with Hispanics composing over 40% of the population. 13,500 or 10% of the population are linguistically challenged. 6,400 households or 12% of the total 53,800 households do not have a car. There are 8,900 low-income households, which accounts for 17% of total households. The 2017 median household income within one mile of the Havana Street corridor is $39,800, which is only 55% of the metro area median household income of $71,900. Half of the population does not have a college or higher degree and 20% of the population did not graduate from high school. There are 14,000 residents with disabilities and 38,000 residents who are older than 65 years or between age of 6 and 17. Delivering a safe and convenient public transportation system and safe, convenient and ADA compliant bike and pedestrian access to bus stops is essential to helping improve quality of life and access to opportunities and amenities for vulnerable populations in the Havana Street Corridor.

[1] RTD Study: Transit Priority Analysis of Select Corridors

Vulnerable Populations	Numbers
Persons over age 65	15,300
Minority persons	79,800
Low-income households	8,900
Linguistically-challenged persons	13,500
Individuals with disabilities	14,000
Households without a motor vehicle	6,400
Children ages 6–17	22,700

- The Havana Street Transit Improvements will enhance transportation safety and security by improving the stop area amenities and providing pedestrians safe access to the stops and crossing of intersections.
- Additionally, the project will help in establishing a network of clear and direct multimodal connections within and between urban centers, or other key destinations by connecting four existing urban centers along the Havana Street corridor including Iliff Avenue/Parker Triangle, Gardens on Havana – former Buckingham Center, and the 1st Avenue and Colfax Avenue Urban Center, and several important parcels and businesses with recent significant city investments, such as the retail development of Gardens on Havana and Argenta, the former Fanfare redevelopment site.

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

This project will provide the following improvements (see the attached "Havana Street Transit Improvements Scope of Work" and "Preliminary Analysis of Select Transit Priority Corridors - Final Recommendations" for a more detailed project scope and call out of specific elements:

- Bus bypass lanes
- Relocation of bus stops
- Installation of bus bulbs
- Installation of queue jump signals
- Bus stop accessibility upgrades
- Implementation of Transit Signal Priority

10. What is the status of the proposed project?

RTD, in collaboration with Aurora, has developed a detailed scope of work based on the recommendations developed in RTD's "Transit Priority Analysis of Select Corridors" study recently completed in 2018. Detailed cost estimates have also been developed (see the attached Havana Street Transit Improvements – Cost Estimates). Aurora and RTD is ready to implement the improvements with award of TIP funding in the near future.

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		**$782,000**
2. Total amount of DRCOG Subregional Share Funding Request	**$539,580**	69% **of total project cost**
3. Outside Funding Partners ***(other than DRCOG Subregional Share funds)*** List each funding partner and contribution amount.	**125,000$ Contribution Amount**	**% of Contribution to Overall Total Project Cost**
City of Aurora	$117,420	15%
RTD	$125,000	16%
	$	
	$	
	$	
	$	
Total amount of funding provided by other funding partners *(private, local, state, Regional, or federal)*	$242,420	

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	$	$539,580	$	$	**$539,580**
State Funds	$	$	$	$	**$0**
Local Funds	$	$242,420	$	$	**$242,420**
Total Funding	$0	$782,000	$0	$0	**$782,000**
4. Phase to be Initiated *Choose from Design, ENV, ROW, CON, Study, Service, Equip. Purchase, Other*		Design, ENV and CON		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.*

- Why is this project important to your subregion?

This project is critical to the Arapahoe subregion and the entire each metro area for the following reasons:

Critical to the Fiscal and Economic Health of the City of Aurora and Arapahoe County Subregion

The Havana Street Corridor is an important city corridor and is critical to the fiscal and economic health of the city. There are approximately 2,100 businesses, 41,800 employees and 134,900 residents within one mile of the Havana Street Corridor. There are also many planned and active developments, including approximately 1.9 million square feet of commercial development and 1000 residential units that have been delivered in the last two years. The total population will increase to 140,000 and total employment will grow to 54,400 by 2040. The corridor forms the spine through the heart of the "On Havana Street"- Business Improvement District (BID). The Havana BID includes all business parcels along Havana Street between Dartmouth Avenue on the south and 6th Avenue on the north (see the attached Havana BID map). It provides programming and benefits to business and commercial properties located along the Havana Street Corridor including economic development, establishing a district identity for the area, and advocacy and promotional programs.

The sales tax revenue of $21.3 million per year, generated just from the area encompassed by the Business Improvement District, accounts for approximately 12 % of total sales tax revenue of the city. The Havana Street Corridor is also located within the "opportunity triangle" formed by Lowry, Stapleton and the Fitzsimons Innovation Community and Anschutz Medical Campus and connects with four Metro Vision-designated Urban Centers including, Iliff Avenue/Parker Triangle, Gardens on Havana – former Buckingham Center, 1st Avenue and Colfax Avenue, and several important parcels and businesses with recent significant city investments, such as the retail development of Gardens on Havana and Argenta, the former Fanfare redevelopment site.

Specifically, Aurora Urban Renewal Authority (AURA) spent $4 million to purchase the 10.31 acre Fanfare redevelopment site and has since been working towards a financial incentive with a developer for a future $100 million dollar mixed-use development. The AURA also approved a $12M tax increment incentive (TIF) for the redevelopment of the former Buckingham Square Mall, now the Gardens on Havana, in 2009. In May of 2013 the AURA also spent $200,000 for constructing a private connector road for Gardens on Havana.

By improving transit speed, punctuality and bus stop amenities and the overall multimodal travel environment, this project will improve the overall Havana Street corridor livability and vitality and therefore, the economic and fiscal health of the City and Arapahoe County. In addition, per RTD's estimate, the implementation of this project will save 142 person hours of travel each day or 51,830 person hours of travel annually for Bus 105 Route passengers.

An Important Multimodal Transportation Corridor with Regional Significance

The Havana Street Corridor also serves vital mobility and connectivity needs for residents as well as businesses, employees, commercial customers and commuters within the corridor area as well as the eastern sector of the metropolitan area. It is one of the seven transit priority corridors identified through the recent RTD study *Network Analysis of Potential Improvements to Bus Speed, Delay, & Access*. The Havana Street Bus Route 105 has services between 2:30 AM through midnight with 15-minute service frequency between 4:30 AM through 7:00 PM and 30-

minute service frequency for the very early morning and late evening hours. It is one of the busiest bus routes within the RTD transit system. It has over 5,200 daily riders and 1900 average load, many of which are vulnerable populations, such as lower income employees taking very early or late buses to employment locations.

Bus Route 105 connects to the Southeast Light Rail Transit services, including R, F and H Lines, at the Southmoor Station and the A Line at the Central Park Station. It also serves the entire east metro area transit travel needs by connecting with nine east-west bus routes, including bus routes 20, 15/15L, 10, 6, 3, 11, 21 and 83L. The transfer with Bus Routes 15L and 15 at Colfax Avenue, the busiest and only 24-hour bus route in the RTD system, has approximately 1,800 daily riders at the Colfax Avenue/Havana Street stop, one of the highest bus boarding locations in the region.

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

  Yes, this project will benefit the City and County of Denver, Greenwood Village, Centennial, Lone Tree and unincorporated Adams and Arapahoe counties by improving transit services along Havana Street and transit connections to R, F, H and A rail lines as well as numerous east-west connecting bus routes.

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

  Yes, this project will benefit the Adams, Denver and Douglas county subregions by improving transit services along Havana Street and transit connections to R, F, H and A rail lines as well as numerous east-west connecting bus routes.

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

  The proposed project will increase the reliability, efficiency and attractiveness of the existing multimodal transportation network and therefore help to reduce automobile dominance and increase mobility options for the vulnerable populations without cars and those who are not able to drive. Specifically,

  - This project will reduce bus travel and dwell time and increase bus travel speed and puctuality by allowing buses to clear intersections faster through bus by-pass lanes, bus signal priorities and far-side bus stop locations and letting buses getting back to travel lanes faster through bus bulbs.
  - This project will improve bus passenger safety and overall travel experiences by providing additional stop amenities such as pedestrian access enhancements and bus bulbs, which provides larger and safer waiting areas and potentially reduce street crossing distances and time.
  - This project will increase reliability of the existing multimodal transportation network, improve mobility infrastructure and services for vulnerable populations and help establish a network of clear and direct multimodal connections within and between urban centers, and other key destinations by enhancing the overall bus travel experience for the Havana Street Corridor.

- 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?

  Investment in public transportation infrastructure has been linked to various community-wide benefits, ranging from enhanced safety, convenience, less congestion, improved air quality to increased property values. According to the National Association of City Transportation Officials (NACTO), enhanced multimodal facilities can result in higher retail sales and increased property values. These all contribute to an overall improved quality of life for transit customers within this corridor.

  The Havana Street corridor is an important city corridor and is critical to the fiscal and economic health of the city. According to Infogroup, Inc., there are approximately a total of 2,100 businesses, 41,800 employees and 134, 900 residents within one mile of the Havana Street corridor. There are also many planned and active developments, including approximately 1.9 million square feet of commercial development and 1000 residential units that occurred in the last two years. The total population will increase to 140,000 and total employment will grow to 54,400 by 2040. The corridor travels through the heart of the “On Havana Street”- Business

Improvement District (BID). The Havana BID includes all business parcels along Havana Street between Dartmouth Avenue on the south and 6th Avenue on the north. The sales tax revenue of $21.3 million per year, generated just from the area encompassed by the Business Improvement District, accounts for approximately 12 % of total sales tax revenue of the city.

The Havana Street Corridor is also located within the "opportunity triangle" formed by Lowry, Stapleton and Fitzsimons Innovation Community & Anschutz Medical Campus and connects with four Metro Vision-designated Urban Centers including, Iliff Avenue / Parker Triangle, Gardens on Havana (former Buckingham Center), 1st Avenue and Colfax Avenue, and several important parcels and businesses with recent significant city investments, such as the retail development of Gardens on Havana and Argenta, the former Fanfare redevelopment site. Improving the public transportation service and make it more efficient and more attractive will make the Havana Street corridor more livable, sustainable and more competitive economically.

This project will also provide a number of direct benefits to area residents and businesses. Based on conservative estimates from Part 3 of this application, this project will reduce VMT by nearly 1300 each day, which is approximately 474,500 per year. The project will save people auto fuel and maintenance costs, reduce air pollution, and create positive health impacts by encouraging people to use alternative transportation. It is estimated that the implementation of this project will save 142 person-hours of travel each day, 51,830 person-hours of travel annually and over $1 million of travel cost. It will add 287 additional daily transit trips or 104,755 transit trips annually, 147 additional daily bike and pedestrian trips or 53,655 additional bike and pedestrian trips annually.

This corridor has a very high concentration of vulnerable populations, many of them rely on public transportation as their only means to access jobs, shopping and health care facilities. This project will provide better accessibility and connectivity to the urban centers and employments centers mentioned above and therefore bring economic benefits to the residents and businesses along the Havana Street corridor as well as the large metro area.

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

  This project will improve the connections to four rail lines and eleven bus lines by enhancing the reliability and operational efficiency of the bus service along Havana Street.

  It will also improve cross modal linkages between pedestrian and bicycle connections and bus services by enhancing bus stop area amenities and imporving overall access to bus stops.

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

  City of Aurora and RTD will both provide matching funds for this project. In addition, RTD, in collaboration with Aurora, has developed a detailed project scope, elements and cost estimate for the improvements. Aurora and RTD will also be in close coordination in the project final design and implementation phases. This will be the first implementation of transit signal priority in Aurora. The city and RTD traffic engineering staff have already analyzed and confirmed the feasibility of implementing transit signal priority with Aurora's existing signal hardware and software systems.

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).**

Providing safe, convenient, and reliable transit services is essential and vitaly important in an area that has high concentrations of vulnearble populations. There are currently 134,900 total population within one mile of the Havana Street Corridor. The total population will increase to 140,000 by 2040.

The Havana Street Corridor has a high concentration of vulnerable populations and the vulnerable populations will increase more in the future with the overall population growth and enhanced multimodal travel environment. There are 79,800 minorities which compose more than half of the residents within the study area, with Hispanics composing over 40% of the population. 13,500 or 10% of the population are linguistically challenged. There are 8,870 low-income households, which accounts for 17% of 53,800 total households. The 2017 median household income within one mile of the Havana Street corridor is $39,800, only 55% of the metro area median household income, which is $71,900. Half of the population does not have a college or higher degree and 20% of the population did not graduate from high school. There are 14,400 residents with disabilities and 38,000 residents who are older than 65 years or between age of 6 and 17.

Vulnerable Populations	**Numbers**
Persons over age 65	15,300
Minority persons	79,800
Low-income households	8,900
Linguistically-challenged persons	13,500
Individuals with disabilities	14,400
Households without a motor vehicle	6,400
Children ages 6–17	22,700
Health Care Facilities	178

Delivering a safe and convenient public transportation system and safe, convenient and ADA compliant bike and pedestrian access to bus stops is essential to helping improve quality of life for vulnerable populations in the Havana Street Corridor.

There are a total of 178 health services facilities within one mile of the Havana Street Corridor, including the Kaiser Permanente East Denver facilities, Aurora Mental Health Center, and the non-profit Metro Community Provider Network (MCPN) locations. Accessing medical services is a major driver of transportation needs, particularly for vulnerable populations such as the elderly, persons with disabilities, and children. This project will improve transit service and transit connectivity to these 178 health care facilities.

The Havana Street Corridor also provides important transfer points via RTD bus routes 15 and 15L at Colfax Avenue stops and the R rail line at the Colfax Avenue Station to the world class medical facilities at the Anschutz Medical Campus, which consists of University Hospital, The Children's Hospital, VA Hospital, and at National Jewish Health facility on Colfax Avenue and at the Aurora Regional Medical Center at the R Line Florida Station.

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

The Havana Street Corridor serves vital mobility and connectivity needs for residents as well as businesses, employees, commercial customers and commuters within the corridor area as well as the eastern sector of the metropolitan area. The Havana Street Bus Route 105 has services between 2:30 AM through midnight with 15-minute service frequency between 4:30 AM through 7:00 PM and 30-minute service frequency for the very early morning and late evening hours. It is one of the busiest bus routes within the RTD transit system. It has over 5,200 daily riders, many of which are vulnerable populations, such as lower income employees taking very early or late buses to employment locations.

Bus route 105 also connects the Southeast Light Rail Transit services, including R, F and H Lines, at the Southmoor Station and the A Line at the Central Park Station. It also serves the entire east metro area transit travel needs by connecting with nine east-west bus routes, including bus routes 20, 15/15L, 10, 6, 3, 11, 21 and 83L. The transfer

with bus routes 15L and 15 at Colfax Avenue, the busiest and only 24-hour bus route in the RTD system, has approximately 1,800 daily riders at the Colfax Avenue/Havana Street stop, one of the highest bus boarding locations in the region.

This project will increase reliability of existing multimodal transportation network in the following areas:

- Reduce bus travel time and increase bus travel speed and puctuality by allowing buses to clear intersections faster through bus by-pass lanes, bus signal priorities, and far-side bus stop locations and letting buses remaining in the travel lanes, while passengers boarding or alighting buses, through bus bulbs.
- Improve bus passenger safety and overall travel experiences by providing additional stop amenities such as pedestrian access enhancements and bus bulbs, which provides larger and safer waiting areas and potentially reduce street crossing distances and time.

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

Currently, the Havana Street Corridor experiences significant traffic congestion during peak hours, which is significantly impacting the efficient operation of buses along the corridor. There is also a need to provide safe and convenient pedestrian and bicycle connections to transit stops and business, including enhanced pedestrian and bicycle facilities along the Havana Street Corridor and enhanced pedestrian crossings across Havana Street. The city of Aurora's Bicycle and Pedestrian Master Plan identifies designated bike facilities parallel to Havana along the corridor, but with the majority of attractions located directly adjacent to Havana Street, the need to improve bicycle and pedestrian access along Havana Street itself as well as east-west connections from the adjacent developments to Havana Street remain. Over the past five years, Havana Street has experienced 4,725 traffic crashes, including 316 injuries and eight (8) fatal crashes, out of which four (4) are fatal pedestrian crashes. This project will improve transportation safety and security in the following areas:

- Improve bus passengers safety and overall travel experience by providing additional stop amenities such as pedestrian access enhancements and bus bulbs, which will provide larger and safer waiting areas and potentially reduce street crossing distances and times.
- Increase the overall travel safety by encouraging more people to use public transportation which is operated by professional drivers and is typically safer than trip making in private vehicles.
- Reduce potential traffic crashes by allowing buses, which are larger in size, move at a slower speed and take longer to accelarate and brake, to clear intersections first and separately.
- Increase pedestrian safety by locating bus stops from near-side to far-side to reduce potential pedestrian and bus conflicts.

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

WEIGHT **15%**

*Provide **qualitative and quantitative** responses (derived from Part 3 of the application) to the following items on how the proposed project contributes to Transportation-focused Objectives (in bold) in the adopted Metro Vision plan. Refer to the expanded Metro Vision Objective by clicking on links.*

MV objective 2	**Contain urban development in locations designated for urban growth and services**.

1. Will this project help focus and facilitate future growth in locations where urban-level infrastructure already exists or areas where plans for infrastructure and service expansion are in place? ☒ Yes ☐ No

Describe, *including supporting quantitative analysis*

The Havana Street Corridor is a developed city corridor with significant existing residents and businesses. Specifically, there are approximately a total of 2,100 businesses, 41,800 employees and 134,900 residents within one mile of the Havana Street Corridor. There are also many planned and active developments, including approximately 1.9 million square feet of commercial development and 1000 residential units that have been delivered in the last two years. The total population will increase to 140,000 and total employment will grow to 54,400 in 2040. The Havana Street Corridor is also located within the "opportunity triangle" formed by Lowry, Stapleton and Fitzsimons/Anschutz Medical Campus and connects with four Metro Vision-designated Urban Centers including, Iliff Avenue/Parker Triangle, Gardens on Havana- former Buckingham Center, and 1st Avenue and Colfax Avenue, and several important parcels and businesses with recent significant city investments, such as the retail development of Gardens on Havana and Argenta, the former Fanfare redevelopment site.

Improving the public transportation service and making it safer, more efficient and more attractive will make the Havana Street corridor more livable, sustainable and more competitive economically and therefore help focus and facilitate future growth along the Havana Street corridor where urban-level infrastructure and service expansion are in place.

MV objective 3	**Increase housing and employment in urban centers**.

2. Will this project help establish a network of clear and direct multimodal connections within and between urban centers, or other key destinations? ☒ Yes ☐ No

Describe, *including supporting quantitative analysis*

As it is discussed above, the Havana Street Corridor is located within the "opportunity triangle" formed by Lowry, Stapleton and Fitzsimons Innovation Community &Anschutz Medical Campus and connects with four Metro Vision-designated Urban Centers including, Iliff Avenue/Parker Triangle, Gardens on Havana – former Buckingham Center, 1st Avenue and Colfax Avenue, and several important parcels and businesses with recent significant city investments, such as the retail development of Gardens on Havana and Argenta, the former Fanfare redevelopment site.

Improving the public transportation service and making it safer, more efficient and more attractive will help establish a network of clear and direct multimodal connections within and between urban centers, and key destinations along the Havana Street corridor.

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*

The Havana Street corridor serves vital multimodal mobility and connectivity needs for residents as well as businesses, employees, commercial customers and commuters within the corridor area as well as the eastern sector of the metropolitan area. The Havana Street Bus Route 105 has services between 2:30 AM through midnight with 15-minute service frequency between 4:30 AM through 7:00 PM and 30-minute service frequency for the very early morning and late evening hours. It is one of the busiest bus routes within the RTD transit system. It has over 5,200 daily riders, many of which are vulnerable populations, such as lower income employees taking very early or late buses to employment locations.

Bus Route 105 provides important regional transit services. It connects the Southeast Light Rail Transit services, including R, F and H Lines, at the Southmoor Station and the A Line at the Central Park Station. It also serves the entire east metro area transit travel needs by connecting with nine east-west bus routes, including bus routes 20, 15/15L, 10, 6, 3, 11, 21 and 83L. The transfer with bus routes 15L and 15 at Colfax Avenue, the busiest and only

24-hour bus route in the RTD system, has approximately 1,800 daily riders at the Colfax Avenue/Havana Street stop, one of the highest bus boarding locations in the region.

The Havana Street Corridor is a developed city corridor with significant existing residents and businesses. Specifically, there are approximately a total of 2,100 businesses, 41,800 employees and 134, 900 residents within one mile of the Havana Street Corridor.

This project will help increase mobility choices within and beyond the Arapahoe subregion for 41,800 employees and 134, 900 residents currently and 140,000 populations and 54,400 employment by 2040. The project will especially benefit a significant amount of vulnerable populations, which many of them rely on public transportation as their only means of accessing to job, health care and other essential daily needs and services.

	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*

Using the methodology provided in Section 3 indicates that this project will reduce greenhouse gases by approximately 1,267 lbs daily or 462,455 lbs annually.

	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* (what #s/metrics can be cited?)

This project will help establish multimodal connection enhancements to many built and natural parks, open spaces and increase accessibility to our region's open space assets and regional trails, including Aurora City Park, Spencer Garrett Park, Havana Park, Futon Park, Expo Park, Ben Bezoff Park, Babi Yar Park, Hentzell Park as well as the HighLine Canal and Cherry Creek Regional Trail.

	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* (what #s/metrics can be cited?)

This project will significantly advance the creation of a well-connected, well-maintained, safe, reliable multi-modal transportation network. Together with higher density, mixed use urban forms being developed throughout the corridor, this project will enable people of all ages and all level of physical capabilities to feel safe, and comfortable to make healthy and convenient active travel choices, such as walking, biking or taking public transit. In addition, this project will improve public transportation connections to many built and natural parks and open spaces, including City Park, Spencer Garrett Park, Havana Park, Futon Park, Expo Park, Ben Bezoff Park, Babi Yar Park, Hentzell Park as well as the High Line Canal and Cherry Creek regional trails, along the Havana Street Corridor, that will support healthy active choices.

	MV objective 13	**Improve access to opportunity**.

7. Will this project help reduce critical health, education, income, and opportunity disparities by promoting reliable transportation connections to key destinations and other amenities? ☒ Yes ☐ No

Describe, *including supporting quantitative analysis*

The Havana Street Corridor is a developed city corridor with significant existing residents and businesses. Specifically, there are approximately a total of 2,100 businesses, 41,800 employees and 134,900 residents within one mile of the Havana Street Corridor. There are also many planned and active developments, including approximately 1.9 million square feet of commercial development and 1000 residential units that have been delivered in the last two years. The total population will increase to 140,000 and total employment will grow to 54,400 by 2040. The Havana Street Corridor has a very high concentration of vulnerable populations and many of them rely on public transportation services as their only means of access to health care facilities, educational opportunities and jobs. There are 79,800 minorities which compose more than half of the residents within the study area, with Hispanics comprising over 40% of the population. 13,500 or 10% of the population are linguistically challenged. There are 8,870 low-income households, which accounts for 17% of 53,800 total households. The 2017 median household income within one mile of the Havana Street corridor is $39,800, only 55% of the metro area median household, which is $71,900. Half of the population does not have a college or higher degree and 20% of the population did not graduate from high school. There are 14,000 residents with disabilities and 38,000 residents who are older than 65 years or between age of 6 and 17. The vulnerable populations will increase more in the future.

Havana Street and the neighboring land uses have shares of diverse housing types, a full range of retail opportunities, and a mixture of commercial employment, and social service and medical services.

This project will deliver multimodal transportation improvements, such as improving bus operational efficiency and reliability, pedestrian and bike accessibility to bus stops. It will minimize congestion, maximize safety, make the corridor more livable, promote more diversity and meet existing and future travel needs of pedestrians, bicyclists, transit customers and automobile drivers and provide reliable mobility choices to all users: residents and visitors of all ages, incomes and abilities, as well as businesses that provide services and produce and/or sell goods, and therefore help reduce critical health, education, income, and opportunity disparities along the Havana Street Corridor.

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* (any additional #s/metrics to cite ?)

The Havana Street Corridor is an important city corridor and is critical to the fiscal and economic health of the city. According to Infogroup, Inc., there are approximately a total of 2,100 businesses, 41,800 employees and 134, 900 residents within one mile of the Havana Street corridor. There are also many planned and active developments, including approximately 1.9 million square feet of commercial development and 1000 residential units that was delivered in the last two years. The total population will increase to 140,000 and total employment will grow to 54,400 by 2040. The corridor travels through the heart of the "On Havana Street"- Business Improvement District (BID). The Havana BID includes all business parcels along Havana Street between Dartmouth Avenue on the south and 6th Avenue on the north. The sales tax revenue of $21.3 million per year, generated just from the area encompassed by the Business Improvement District, accounts for approximately 12 % of total sales tax revenue of the city. The Havana Street Corridor is also located within the "opportunity triangle" formed by Lowry, Stapleton and Fitzsimons Innovation Community & Anschutz Medical Campus and connects with four Metro Vision-designated Urban Centers including, Iliff Avenue/Parker Triangle, Gardens on Havana – Former Buckingham Center, 1st Avenue and Colfax Avenue, and several important parcels and businesses with recent significant city investments, such as the retail development of Gardens on Havana and Argenta, the former Fanfare redevelopment site.

Improving the public transportation service and making it more efficient and more attractive will help support and contribute to the continued high level of access to and growth of the corridor thereby contributing significantly 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?	31%	41%+ outside funding sources .....High 31-40% .....Medium 30% and below .....Low

Part 3 Project Data Worksheet – Calculations and Estimates

(Complete all subsections applicable to the project)

A. Transit Use

1.	Current ridership weekday boardings	5,211
2.	Population and Employment (check #s – see different #s in Bicycle Use section below, and round off #s)	

Year	Population within 1 mile	Employment within 1 mile	Total Pop and Employ within 1 mile
2020	134,900	41,800	**176,700**
2040	140,000	54,400	**194,400**

Transit Use Calculations (any #s ?)	Year of Opening	2040 Weekday Estimate
3. Enter estimated additional daily transit boardings after project is completed. *(Using 50% growth above year of opening for 2040 value, unless justified)* *Provide supporting documentation as part of application submittal*	287	430
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)*	72	107
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)*	72	107
6. = Number of SOV one-way trips reduced per day (#3 – #4 – #5)	**143**	**216**
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)*	1,287	1,944
8. = Number of pounds GHG emissions reduced (#7 x 0.95 lbs.)	**1,222**	**1,846**
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	528
2.	Population and Employment	

Year	Population within 1 mile	Employment within 1 mile	Total Pop and Employ within 1 mile
2020	134,900	41,800	**176,700**
2040	140,000	54,400	**194,400**

Bicycle Use Calculations (Any 2040 growth #s ?)	Year of Opening	2040 Weekday Estimate
3. Enter estimated additional weekday one-way bicycle trips on the facility after project is completed.	49	73
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)*	24	36
5. = Initial number of new bicycle trips from project (#3 – #4)	25	37
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)*	7	**11.1**
7. = Number of SOV trips reduced per day (#5 - #6)	18	25
8. Enter the value of **{#7 x 2 miles}**. (= the VMT reduced per day) *(Values other than 2 miles must be justified by sponsor)*	36	50
9. = Number of pounds GHG emissions reduced (#8 x 0.95 lbs.)	34	47
10. If values would be distinctly greater for weekends, describe the magnitude of difference: Based on bicycle counts performed on 12/10, 12/13, and 12/15 of 2018, Saturdays had approximately 16 percent more cyclists than weekdays. This could account for an additional 68 daily cyclists on weekend days.		
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)	1,056
2. Population and Employment	

Year	Population within 1 mile	Employment within 1 mile	Total Pop and Employ within 1 mile
2020	134,900	41,800	**176,700**
2040	140,000	54,400	**194,400**

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	98	147
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)*	49	73
5. = Number of new trips from project (#3 – #4)	49	74
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)*	14	37
7. = Number of SOV trips reduced per day (#5 - #6)	35	37

12. Enter the value of **{#7 x .4 miles}**. (**= the VMT reduced per day**) *(Values other than .4 miles must be justified by sponsor)*	14	14
8. = Number of pounds GHG emissions reduced (#8 x 0.95 lbs.)	13	13
9. If values would be distinctly greater for weekends, describe the magnitude of difference: Values are not expected to be greater for weekend days.		
10. If different values other than the suggested are used, please explain here:		

D. Vulnerable Populations

	Vulnerable Populations	Population within 1 mile
Use Current Census Data	**1.** Persons over age 65	15,316
	2. Minority persons	79,796
	3. Low-income households	8,870
	4. Linguistically-challenged persons	13,445
	5. Individuals with disabilities	14,414
	6. Households without a motor vehicle	6,417
	7. Children ages 6–17	22,668
	8. Health service facilities served by project	178

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 (ADT seems high ?)	48,000
2. 2040 ADT estimate	76,000
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** *(Value higher than 1.4 due to high transit ridership must be justified by sponsor)*	0
7. **After project peak hour congested average travel time reduction** per vehicle (includes persons, transit passengers, freight, and service equipment carried by vehicles). *If applicable, denote unique travel time reduction for certain types of vehicles*	0
8. If values would be distinctly different for weekend days or special events, describe the magnitude of difference.	

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

F. Traffic Crash Reduction

1. Provide the current number of crashes involving motor vehicles, bicyclists, and pedestrians *(most recent **5-year** period of data)*		Sponsor must use industry accepted crash reduction factors (CRF) or accident modification factor (AMF) practices *(e.g., NCHRP Project 17-25, NCHRP Report 617, or DiExSys methodology).*
Fatal crashes	8	
Serious Injury crashes	316	
Other Injury crashes		
Property Damage Only crashes	4401	
2. Estimated reduction in crashes applicable to the project scope *(per the five-year period used above)*		
Fatal crashes reduced	0	
Serious Injury crashes reduced	0	
Other Injury crashes reduced	0	
Property Damage Only crashes reduced	0	

G. Facility Condition

Sponsor must use a current industry-accepted pavement condition method or system and calculate the average condition across all sections of pavement being replaced or modified.
Applicants will rate as: Excellent, Good, Fair, or Poor

Roadway Pavement

1. Current roadway pavement condition	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?
   YES. RTD in collaboration with Aurora, has developed a conceptual design and preliminary cost estimate. RTD and Aurora have also identified local matching fund for the project to begin immediately with the TIP funding award.

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

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

4. Does the project or program benefit more than just the sponsoring agency and considered subregionally significant/transformative?
   Yes. This project will deliver benefits to multiple parties/agencies, including the city, RTD, Arapahoe Co. Adams County, Denver, as well as cities of Greenwood Village, Centennial and Lone. Itis also significant in that TSP is being initiated in this corridor for the first time and in Aurora.

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

   YES. 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?
   It is not a next logical phase of a TIP project. However, it is a logical phase of a project completed by RTD, Transit Priority Analysis of Select Corridors completed in 2018. Specifically, this project will implement the recommendations developed by the RTD study.

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

Yes, the City of Aurora and RTD will both provide matching funds for this project. In addition, RTD, in collaboration with Aurora, has developed a detailed project scope, elements and cost estimate for the improvements. Aurora and RTD will also be in close coordination in the project final design and implementation phases. This will be the first implementation of transit signal priority the Havana Street Corridor and in Aurora. The City and RTD traffic engineering staff have already analyzed and confirmed the feasibility of implementing transit signal priority with Aurora's existing signal hardware and software systems.

8. Are there any other "special considerations" the committee should consider in evaluating the application?
   No.