Pa	Part 1 Base Information					
1.	Project Title	2		PARK (PHAS	PARK AVENUE WEST VIADUCT REHABILITATI (PHASE 3: WAZEE TO I-25)	
2.	2. Project Start/End points or Geographic Area Provide a map with submittal, as appropriate		or al, as	Park Av	venue West Viaduct betwee	en Wazee Street and I-25
3.	Project Spo construct/ con responsible for	NSOT (entity that nplete and be find r the project)	: will ancially	City and	l County of Denver	Denver Public Works
4.	Project Con Phone Num	tact Person, T Iber, and Emai	itle, il	Transpo	rtation Planning, 720-913-1	.743, justin.begley@denvergov.org
<ol> <li>Does this project touch CDOT Righ access RTD property, or request RT</li> </ol>			DOT Right equest RT	-of-Way, ir D involven	nvolve a CDOT roadway, nent to operate service?	XX Yes No If yes, provide applicable concurrence documentation with submittal SEE ATTACHED CDOT AND RTD CONCURRENCE/SUPPORT
				RCOG 2040	Fiscally Constrained Regior	nal Transportation Plan (2040 FCRTP)
6.	What plann	ing a) identifies	Lo plan:	cal		
	this project	?	🔀 Ot	<ul> <li>Elevate Denver Bond prioritization</li> <li>Denver Moves: Transit</li> <li>RTD Regional BRT Feasibility Study</li> </ul>		
			Provide with su	link to doci bmittal	ument/s and referenced page	number if possible, or provide documentation
7.	Identify the	project's <b>key</b>	elements			
	<ul> <li>Rapid Transit Capacity (2040 FCRTP)</li> <li>Transit Other:</li> <li>Bicycle Facility</li> <li>Pedestrian Facility</li> <li>XX Safety Improvements</li> <li>Roadway Capacity or Managed Lanes (2040 FCRTP)</li> <li>Roadway Operational</li> </ul>		Grade Separation  Roadway Railway Bicycle Pedestria Roadway Paven XX Bridge Replace Study Design XX Transportation Other:	/ nent Reconstruction/Rehab /Reconstruct/Rehab Technology Components		

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

Metro Vision emphasizes achieving: A Connected Multimodal Region, Outcome 5: The transportation system is safe, reliable, and well-maintained. This outcome includes: "Transportation system physical components are well-maintained to extend their useful life and provide a quality travel experience."

The Park Avenue viaduct was built over 25 years ago. The viaduct is a critical link for Downtown access to and from I-25 for over 41,000 vehicles per day, as well as for the RTD bus system, especially to their operations for north Denver, Boulder, and Arvada. It is also a critical link for the Union Station bus terminal. The bridge carries a significant number of commuters to Downtown and is critical to access to Coors Field.

The bridge has seen significant wear to the bridge deck, bridge expansion joints, corrosion of the steel girders, and the moveable bearings. Without major maintenance of this structure soon, the structure's reliability will decrease, and the likelihood of numerous, disruptive emergency closures will increase drastically.



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

**LOCATION MAP** 



#### SCOPE

This TIP funding will complete Phase 3 of a 4-phase project. The remainder of the funding will be provided by locally derived funding, including Elevate Denver bond sources.



The scope of this TIP-funded Phase 3 project will include:

- Replace 651 linear feet of expansion joints on Park Avenue
- Repair 2,000 square feet of the concrete deck and overlay the entire concrete deck (~30,000 square yards) with asphalt to protect against future damage to the deck
- Repair Sidewalks as well as substructure concrete at the piers and abutments, as needed
- Apply coating to exterior and damaged girders, using a two-coat system with primer and highbuild top coat, to prevent future corrosion of the steel and maintain the integrity of the viaduct
- Update pavement markings, erosion control, and traffic control will be required.
- Advanced Technology elements as described in more detail below.



#### FULL TIP PROJECT DIAGRAM

#### ADVANCED TECHNOLOGY -

Given the strategic location of this project adjacent to I-25, Downtown, and rail operations in the Central Platte Valley, this project provides a unique opportunity to install Advanced Technology for information collection; Intelligent Transportation System (ITS) (detection, communication, and dynamic operations technology); and sustainability (LED streetlights, air quality monitoring).

The project will utilize "best practice" technology available at the time of construction. Examples are described below:

**Transportation Operations and Data Collection** – Installation of conduit in bridge deck for fiberoptic cable connections; various camera (e.g.) detection and pan, tilt, zoom (PTZ) cameras); Road Side Units; Variable Message signs. These elements can provide the following benefits:

- Camera that detects vehicles as they approach an intersection Allows main street to stay green and only change when a vehicle is detected on a side street which allows for efficient progression of all approaches
- On-Board Units for RTD (Regional Transportation District) Buses The On-Board Units will be able to send Transit Signal Priority messages to the Road Side units when the bus is behind schedule, allowing for more efficient transit progression
- BlueTOAD Spectra Road Side Unit Road Side Units will receive rich traveler information that can be used to respond to incidents and understand traffic patterns
- Conduit in Bridge Deck CCD will be able to pull fiber optic cable for CCD's communication network
- Electronic VMS (Variable Message Sign) These signs allow CCD to notify drivers of vehicles crashes, construction sites, road closures and special events

**LED Streetlights** – Conversion of dual-head streetlights in the median and single-head streetlights, as well as addition of "smart streetlights"

**Air Quality and Meteorological Monitoring:** Provision of 4 sensors, 2 with meteorological measurements for monitoring for both the construction period and as a permanent monitoring. This will provide:

- Real-time data, threshold alerts to onsite team to be able to take immediate action if elevated level are seen, proactive approach to mitigating impacts to local community, cutting-edge technology, low-cost system
- On-going data collection to better understand local air quality conditions and weather conditions to reduce human exposure to air pollution in this area and apply best practices for improvements to current and future air quality.
- Installation of weather sensor equipment will also provide real-time pavement condition data

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

🛛 Yes 🗌 No

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

The overall bridge rehabilitation project is currently divided into 4 independent phases. It would be most costefficient and less disruptive to travelers into and out of Downtown if the project is fully funded and constructed in an integrated way. Additional costs and time would be necessary if the project is broken into subphases.

Phase 3, however, could be further divided into Subphase 3A (Park Ave West) and Subphase 3B (22nd/23rd Ave). See Subphased Diagram below.

- The cost for Phase 3A would be \$8.3M (or \$7M without Advanced Technology).
- The cost for Phase 3B would be \$5.3M (or \$4.5M without Advanced Technology).

The additional \$1M in cost is due to the loss of efficiencies in railroad and RTD coordination, mobilization, and traffic control.

Advanced Technology elements as described above have a cost of \$1.3M. These elements could be constructed separately from this project to minimize costs.



#### **PROJECT SUBPHASED DIAGRAM**

## A. Project Financial Information and Funding Request

1.	1. Total Project Cost		
2.	Total amount of DRCOG Subregional Share Funding Request	\$9,600,000	43% of total project cost
3.	<b>Outside Funding Partners</b> <i>(other than DRCOG Subregional Share funds)</i> List each funding partner and contribution amount.	\$\$ Contribution Amount	% of Contribution to Overall Total Project Cost
	Local Match - City and County of Denver CIP Funds	\$2,400,000	11%
	Denver Elevate Denver GO Bond	\$10,000,000	44%
	Denver Local Traffic Signal Funding	\$500,000	2%
		\$	
		\$	
		\$	
Тс	tal amount of funding provided by other funding partners (private, local, state, Regional, or federal)	\$12,900,000	57%

Funding Breakdown (yea	r 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	\$960,000	\$5,760,000	\$2,880,000	\$	\$9,600,000
State Funds	\$	\$	\$	\$	\$0
Local Funds	\$5,240,000	\$6,940,000	\$720,000	\$	\$12,900,000
Total Funding	\$6,200,000	\$12,700,000	\$3,600,000	\$0	\$22,500,000
<b>4. Phase to be Initiated</b> <i>Choose from Design, ENV,</i> <i>ROW, CON, Study, Service,</i> <i>Equip. Purchase, Other</i>	Design	Construction	Construction	Choose an item	
<ul> <li>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.</li> </ul>					

# Part 2 Evaluation Criteria, Questions, and Scoring

## A. Subregional significance of proposed project

*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 the Denver subregion?

Park Avenue is one of the main entryways into the Downtown Denver area, connecting I-25 and I-70 to offices, retail, and residences. The viaduct has been in service roughly 25 years, and serves over 40,000 vehicles daily. Additionally, the viaduct services 9 RTD bus routes including 4 Flatiron Flyer routes and 3 regional routes. The grade separation from the BNSF, UPRR and RTD allows for both commercial freight and commuter rail lines to operate unobstructed. Finally, Park Avenue carries a large number of pedestrians to Downtown, including the majority of fans to Rockies Coors Field throughout the season.

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

The project does not cross multiple municipality boundaries, but benefits multiple cities as commuters from northern communities are provided quicker, easier access to Downtown Denver and Coors Field. In addition the maintenance of this bridge results in minimal future disruption to commuter lines and bus routes which benefits numerous communities.

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

The maintenance of this bridge results in minimal future disruption to commuter lines and bus routes which benefits numerous subregions, including for sports and other events at Coors Field which draw from all over the region..

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

Park Avenue has been in service roughly 25 years, and is seeing the typical wear that is expected with a bridge of this age.. This maintenance is required to ensure the bridge continues to safely serve Denver commuters and reaches its useful life. Without this investment to renew structural components of the structures, the viaduct's condition will worsen more rapidly and the need for a larger, more costly rehabilitation or replacement will be accelerated, at substantial additional cost. Included below are two life cycle timelines, the first showing the best practices for a bridge, the second showing the impact to the lifecycle if this rehabilitation is not completed in a timely way.

WEIGHT 30%

As illustrated in the graphic below, delaying this project could shorten the bridge lifecycle by 15 years.



## -Joint Replacement

## Bridge Life Cycle Timeline: Impact of Delayed Rehabilitation



5. One foundation of a sustainable and resilient economy is physical infrastructure and transportation. How will the <u>completed</u> project allow people and businesses to thrive and prosper?

As mentioned, the current traffic load of the bridge is 41,087 vehicles. If the bridge is not maintained and required closure, surrounding businesses would lose traffic and commuters would be required to take a longer, more timely route to their destinations. Completing this maintenance will prevent these negative impacts from reaching people and businesses. This work will also prevent costly service disruptions to RTD, BNSF and UPRR, and continue to allow them to carry on their business as usual.

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

This viaduct is just north of Denver's Union Station, which is the transportation hub for buses, commuter rail lines and long-distrance rail lines. Multiple bus lines use Park Avenue daily on their routes, and the grade separation from the rail lines allows for RTD commuter lines and railroad freight lines to operate unobstructed. P roper maintenance will allow the structure to remain in service as anticipated.

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

Additional funding will be provided by the Elevate Denver bond and City of Denver CIP funds.

CDOT, RTD, BNSF and UPRR are agencies or companies with an interest in the project.

## B. DRCOG Board-approved Metro Vision TIP Focus Areas and Specific Denver Goals

Provide **<u>qualitative</u> and <u>quantitative</u>** (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).

30%

WEIGHT

VULNERABLE POPULATIONS AND EQUITY

1.A. Describe how the project will **improve mobility infrastructure and services for vulnerable populations** (including improved transportation access to health services) as defined in the <u>Adopted 2020-2023 TIP Policy</u>:

As the data in Part 3 illustrates, due to the proximity to Downtown and the Globeville neighborhoods, substantial numbers of vulnerable populations are served:

1.	Persons over age 65	1565
2.	Minority persons	9820
3.	Low-Income households	2329
4.	Linguistically-challenged persons	1266
5.	Individuals with disabilities	2015

This project will maintain bus and commuter rail mobility, which allows vulnerable populations to access services and jobs more easily. The closure of this bridge would result in increased commuting times and impact the ease of multimodal travel for all populations.

The pedestrian facilities are generally in good condition, but the sidewalks need some repairs and the curb ramps will be replaced and upgraded to current CCD standards.

1.B. Describe how your project is consistent with **Denver's commitments to Equity principles** as defined below, and discussed in more detail in Chapter 4, Access to Opportunity, in the *Blueprint Denver* (*Public Review Draft August 6, 2018*).

Equity is providing everyone with access to opportunity regardless of income level, race, ethnicity, gender, ability, or age.

The Denver **Comprehensive Plan 2040** plan includes a 2040 Vision Element addressing the condition of Denver's mobility infrastructure: *"Denver is connected by safe, high quality, multimodal transportation options."* Goal 7 of this vision element states: "Expand funding options for multimodal infrastructure," including increasing budgets for maintenance and operations."

Renewing the life cycle of this bridge structure allows continued use for vehicles, buses, pedestrians and bicyclists of all populations, and allows uninterrupted commuter rail service.

#### RELIABILITY OF THE MULTIMODAL TRANSPORTATION NETWORK

2.A. Describe how the project will **increase reliability of existing multimodal transportation network** as defined in the *Adopted 2020-2023 TIP Policy:* 

Proper maintenance will allow the structure to remain in service as anticipated, and prevent the negative impact of detours and reduced commercial traffic. Multiple bus lines use Park Avenue daily on their routes, and the grade separation from the rail lines allows for RTD commuter lines and railroad freight lines to operate unobstructed. This work will prevent costly service disruptions to RTD, BNSF and UPRR, and continue to allow them to carry on their business as usual.

#### **VEHICULAR / FREIGHT**

Daily traffic counts in September 2018 conducted by Denver Public Works on the Park Avenue West Viaduct indicate that **more than 41,000** vehicles per day utilize the structure, **3 to 5%** of which are estimated to be medium or heavy trucks

#### **TRANSIT - EXISTING**

The RTD Corridor Planning (Operations) staff indicates that the Park Ave West Viaduct is very important to RTD service. One of the important routes connecting to Northwest Denver and Wheat Ridge is the Route 38 which uses the structure and has stops at Delgany/Wewatta. Route 8 does the same. It is also used by regional and express buses running in the opposite direction of the HOV lane on I-25. The actual boardings on the structure are not large, 18 inbound and 112 outbound, but it serves as a very important through route.

ROUTES UTILIZING THE STRUCTURE:	8, 38, 55L, 72L, 120X, FF1, FF2, FF4, FF6, LD, and LX
WEEKDAY PASSENGERS:	4088 passengers carried on Park Avenue West between Wewatta/Delgany and Globeville Rd
WEEKDAY TRIPS:	227 trips inbound and 184 trips outbound
SATURDAY TRIPS:	137 trips inbound and 52 trips outbound
SUNDAY TRIPS:	75 trips inbound and 48 trips outbound

#### **BICYCLE/PEDESTRIAN**

The multi-use path on both sides of Park Ave West is part of a local bike route (D-7). See map below. Maintaining and enhancing the structure allows this key bike-pedestrian artery to continue to serve access to Northwest Denver, Globeville, and the South Platte Trail park connections.



#### 2.B. Describe how the project will meet the goals of the *Denver Mobility Action Plan*.

Multiple modes of transportation utilize this bridge as well as take advantage of the separation from the rail lines below. This allows citizens the choice of how to commute and makes that commute more efficient. ADA ramps on the bridge will be updated in a separate phase, increasing accessibility and safety.

2.C. If applicable, describe how the project will **increase multimodal person-trip capacity and access as** described in the *Denver Strategic Transportation Plan* (2008).

As described in future sections, the structure is a key part of existing and future RTD bus transit system improvements. The future people-carrying capacity of the Park Avenue viaduct, as part of the West 38th Avenue transit corridor serving Northwest Denver and Wheat Ridge, is expected to increase. Park Avenue/West 38th Avenue is designated by both Denver's transit plans and RTD's Regional Bus Rapita Transit (BRT) Feasibility study.

#### TRANSPORTATION SAFETY AND SECURITY

3A. Describe how the project will **improve transportation safety and security as defined in** the *Adopted 2020-2023 TIP Policy:* 

Neglected maintenance reuiqres more frequent, unscheduled repairs that result in increased disruption to the general public. For example, in the last year, Denver has had to complete two emergency repairs on the bridge bearings. If the joints and the deck are not protected, damage to the rail lines below and vehicles on the surface could occur.

#### 3B. Describe how the project will meet the goals of **Denver's Vision Zero Action Plan**.

Providing a safe, reliable, well-maintained structure for buses, trucks, and autos, and a multi-use path for pedestrians and bicyclists, without unnecessary construction closures, is consistent with safe travel. The Advanced Techology elements included in the **Transportation Operations and Data Collection** will lead to better, more real-time traveler information and incident detection which can prevent crashes and travel delays.

# C. Consistency & Contributions to Transportation-focused Metro Vision and Denver Plans, Goals, and Objectives

WEIGHT 30%

Yes 🗌 No

Provide **<u>qualitative and quantitative</u>** 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. In addition, provide information related to the consistency with Denver goals, objectives, plans, and priorities.

**<u>MV objective 2</u>** Contain urban development in locations designated for urban growth and services.

 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?

Describe, including supporting quantitative analysis

This project is adjacent to, and serves, the densely populated Downtown area, and carries vehicles and buses from the two main interstates in the region.

MV objective 3	Increase housing and employment in urban centers.				
<b>2.A</b> . Will this project h and between urban ce	<b>2.A</b> . Will this project help establish a network of clear and direct multimodal connections within and between urban centers, or other key destinations?				
Describe, including	supporting quantitative analysis				
Park Avenue is cur Downtown Denve	rently a multimodal connector between the interstate and the Central Busin	ess District of			
<b>2.B.</b> How does this p the <u>Blueprint Denver</u> (	<b>2.B.</b> How does this project focus or serve desired growth in areas identified on the Places map (Chapter 5, p. 126) in the <i>Blueprint Denver</i> ( <i>Public Review Draft August 6, 2018</i> )?				
This project serves Wewatta and 16 <sup>th</sup>	This project serves the area identified on the Places map as the Union Station regional center, located at Wewatta and 16 <sup>th</sup> Avenue Downtown.				
MV objective 4	Improve or expand the region's multimodal transportation system, service connections.	ces, and			
<b>3.A.</b> Will this project help increase mobility choices within and beyond your subregion for people, goods, or services?					
<b>3.A.</b> Will this project people, goods, or serv	nelp increase mobility choices within and beyond your subregion for ces?	Yes 🗌 No			
<b>3.A.</b> Will this project people, goods, or serv Describe, <i>including</i>	nelp increase mobility choices within and beyond your subregion for ices?	🛛 Yes 🗌 No			
<b>3.A.</b> Will this project people, goods, or serv Describe, <i>including</i> . This project maint transit, and pedest	help increase mobility choices within and beyond your subregion for ices? In supporting quantitative analysis ains the current mobility choices for people, goods and services by providing crian facilities. It also eases the use of commuter rail.	Yes 🗌 No 🔄 Yes			
<b>3.A.</b> Will this project people, goods, or serv Describe, <i>including</i> . This project maint transit, and pedes. TRANSIT – FUTURE	help increase mobility choices within and beyond your subregion for ices? In supporting quantitative analysis ains the current mobility choices for people, goods and services by providing crian facilities. It also eases the use of commuter rail.	Yes 🗌 No			



3.B. If applicable, describe how this project is consistent with Denver's specific alternative mode and/or project priorities contained in one or more of Denver's modal plans linked below or small area plans (Neighborhood Planning Initiative, corridor plans, station area plans, Next Steps Studies, etc.). See Denvergov website: denvergov.org search bar and specific plan links below:

NOTE: The application does not need to address numerous plans. Provide documentation for the most applicable or relevant document(s) or plan(s).

Examples are listed below:

- Denver Moves: Transit <u>https://www.denvergov.org/content/denvergov/en/denveright/transit.html</u>
- Denver Moves: Pedestrian and Trails <u>https://www.denvergov.org/content/denvergov/en/denveright/pedestrians-trails.html</u>
- Denver Moves: Bicycles <u>https://www.denvergov.org/content/dam/denvergov/Portals/708/documents/FINAL\_Denver\_Moves.pdf</u>
- Transit Oriented Development (TOD) Strategic Plan <u>https://www.denvergov.org/content/dam/denvergov/Portals/193/documents/TOD\_Plan/TOD\_Strategic\_Plan\_FINAL.pdf</u>
- Small area plans (Neighborhood Planning Initiative, corridor plans, station area plans, Next Steps studies, etc.)

#### **CONSISTENCY WITH DENVER PLANS:**

**Denver Moves: Transit** is Denver's first local transit vision and guiding framework that identifies near- and long-term transit system investment and improvement strategies and actions to move more people more efficiently and safely as Denver continues to grow and develop.

The future people-carrying capacity of the Park Avenue viaduct, as part of the West 38<sup>th</sup> Avenue transit corridor serving Northwest Denver and Wheat Ridge, is expected to increase. The Park Avenue/West 38<sup>th</sup> Avenue corridor is designated by *Denver Moves: Transit* as one of the "Medium Capacity" Transit Capital Investment Corridors based on technical analysis and community input.

#### DRAFT DENVER MOVES: TRANSIT PLAN

#### **38TH AVENUE CORRIDOR**

#### BACKGROUND

Corridor Type: Medium-Capacity Transit

Length: 4.3 miles

Sidewalk Coverage within 1/4-mile: 78%

Existing Transit: Route 38

#### Planning Background:

- The Globeville Neighborhood Plan (2014) recommends improved multimodal connectivity and choices, safety improvements at intersections, and transitsupportive development
- The Deriver Vision Zero Action Plan (2017) identifies 38th Avenue west of downtown as a corridor on the High Injury Network

38th needs to be made pedestrian friendly. There need to be more protected crossings so that people can easily get across the street to take the bus or visit businesses. Pedestrians and businesses would benefit from a green median and slower speeds.

- Deriver Moves: Transit Survey Participan





a. Map shows existing conditions and improvement recommendations proposed through other plans/projects. Deriver Movie: Transit recommendations will b further defined in future project studies and design. Contidor routing is conceptual and does not represent actual bus routes.

MV objective 6a	Improve air quality and reduce greenhouse gas emissions.					
<b>4.A.</b> Will this project h monoxide, particulate	<b>4.A.</b> Will this project help reduce ground-level ozone, greenhouse gas emissions, carbon monoxide, particulate matter, or other air pollutants?					
Describe, including	supporting quantitative analysis					
Since this is a struc	tural rehabilitation project, the project itself will not provide air quality ben	efits.				
However, because pedestrian, and bu provide reliable, s	However, because the structure is a critical grade separation on a multimodal corridor acommodating bike, pedestrian, and bus travel, it is important to maintain the decking, structural elements, and multi-use path to provide reliable, safe travel with minimal disruption for modes that reduced pollution.					
<b>4.B.</b> If applicable, des <u><i>Plan</i></u> , which set the Citt Denver's <u>2020 Sustain</u>	scribe how this project is consistent with, or helps implement, Denver's <u>80x5</u> y's target to <b>reduce greenhouse gas emissions to 80% below 2005 levels by</b> ability Goals.	<u>50 Climate Action</u> 2050, and/or				
Sustainability as re the case of the 25- premature replace	Sustainability as related to bridge structures and roadways means meeting the anticipated design life, which in the case of the 25-year old Viaduct is projected to be 75 years. Neglecting typical, periodic repairs will lead to premature replacement and a much higher investment earlier than planned.					
<b>4.C.</b> If applicable, destypes and focus areas i	cribe if this project contains <b>water quality and green infrastructure</b> consisted dentified in <b>Denver's <u>Green Infrastructure Implementation Strategy</u>:</b>	ent with project				
This project will no	This project will not install green infrastructure.					
MV objective 7b	Connect people to natural resource or recreational areas.					
<b>5.A.</b> Will this project or improve other multiassets?	help complete missing links in the regional trail and greenways network modal connections that increase accessibility to our region's open space	Yes XX No				
Describe, including	supporting quantitative analysis					
The multi-use path on both sides of Park Ave West is part of a local bike route (D-7). See map in Part 2.A. above. Maintaining and enhancing the structure allows this key bike-pedestrian artery to continue to serve access to Northwest Denver, Globeville, and the South Platte Trail park connections.						
<b>5.B.</b> If applicable, des Parks and Recreation's	cribe how your project meets the goals, objectives and priorities of the Den <u>Game Plan for a Healthy City</u> (Public review draft 2018).	ver Department of				
One of the "Cross	s-Over" strategies—Strategy 5.4—of the Game Plan – includes:					
Upgrade and exp wayfinding, and a	Upgrade and expand regional trail system to meet new standards to improve safety, connectivity, wayfinding, and access. Maintaining this key connection to the South Platte Greenway Trail is					

important to the Game Plan goals.

	MV objective 10	Increase access to amenities that support healthy, active choices.			
6.	Will this project ex Describe, <i>including</i>	pand opportunities for residents to lead healthy and active lifestyles? Second Se			
	The multi-use path on the structure provides access to the South Platte Regional Trail and connections to the northwest Denver communities.				
	MV objective 13	Improve access to opportunity.			
<b>7.</b> 4 by	<ul> <li>7.A. Will this project help reduce critical health, education, income, and opportunity disparities</li> <li>by promoting reliable transportation connections to key destinations and other amenities?</li> <li>Describe, including supporting quantitative analysis</li> </ul>				
	This project will m services and jobs. travel for all comm	aintain bus and commuter rail mobility, which allows all populations to more easily access The closure of this bridge would result in increased commuting times and impact the ease of nuters.			
<b>7.B.</b> Describe how your project addresses the neighborhood inequities related to transportation as depicted and mapped in the <i>Denver Neighborhood Equity Index</i> which was produced by the Denver Department of Public Health and Environment, which helps to inform decision makers about where city investment and resources are needed most for those living in Denver's underserved neighborhoods?					
	General inforn	nation on the Neighborhood Equity Index is on the Denvergov website:			
	<u>https://www.denvergov.org/content/denvergov/en/environmental-health/community-</u> <u>health/health-in-all-policies.html</u>				
	See the interactive map, by opening this <u>link</u> in a new window. The source of each indicator is described in the map. Click on each individual link and see specific map layers; for example, in Built Environment, there is information on "Access to Parks" separately.				
	This project addresses neighborhood inequalities by serving multiple RTD bus lines and providing a direct route into Downtown. Without it, transit into the Central Business District would require using alternate routes that would impact and delay riders at a greater cost than drivers.				
	MV objective 14	Improve the Denver Subregion's competitive position.			
	8. Will this project health and vita	ct help support and contribute to the growth of the subregion's economic Ality?			
	Describe, including	g supporting quantitative analysis			
	This viaduct allows the movement of people, goods, and services quickly and efficiently, both on the bridge and by way of the grade separation. This in turn allows the region to handle business more effectively.				

D. Project Leveraging	WEIGHT <b>10%</b>		
9. What percent of outside funding sources (non-DRCOG-allocated Subregional Share funding) does this project have?	57%	60%+ outside fundin 30-59% 29% and below	ıg sourcesHigh Medium Low

# Project Data Worksheet – Calculations and Estimates

(Complete all subsections applicable to the project)

## A. Transit Use

Part 3

- 1. Current ridership weekday boardings
- 2. Population and Employment

Total Pop and Employ within 1 mile	Employment within 1 mile	Population within 1 mile	Year
102,402	64341	38061	2020
127,843	70356	57487	2040

0

	Transit Use Calculations	Year of Opening	2040 Weekday Estimate
3.	Enter estimated additional daily transit boardings after project is completed. (Using 50% growth above year of opening for 2040 value, unless justified) Provide supporting documentation as part of application submittal	0	0
4.	Enter number of the additional transit boardings (from #3 above) that were previously using a different transit route. (Example: <b>{#3 X 25%}</b> or other percent, if justified)	0	0
5.	Enter number of the new transit boardings (from #3 above) that were previously using other non-SOV modes (walk, bicycle, HOV, etc.) (Example: <b>{#3 X 25%}</b> or other percent, if justified)	0	0
6.	= Number of SOV one-way trips reduced per day $(#3 - #4 - #5)$	0	0
7.	Enter the value of <b>{#6 x 9 miles}</b> . (= <b>the VMT reduced per day</b> ) (Values other than the default 9 miles must be justified by sponsor; e.g., 15 miles for regional service or 6 miles for local service)	0	0
8.	= Number of pounds GHG emissions reduced (#7 x 0.95 lbs.)	0	0

**9.** If values would be distinctly greater for weekends, describe the magnitude of difference:

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

## B. Bicycle Use

#### 1. Current weekday bicyclists

## **2.** Population and Employment

Year	Population within 1 mile	Employment within 1 mile	Total Pop and Employ within 1 mile
2020	38061	64341	102,402
2040	57487	70356	127,843

	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: <b>{#3 X 50%}</b> 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: <b>{#5 X 30%}</b> (or other percent, if justified)	0	0		
7.	= Number of SOV trips reduced per day (#5 - #6)	0	0		
8.	Enter the value of <b>{#7 x 2 miles}</b> . (= 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	<b>10.</b> 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)	
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## 0

0

## 2. Population and Employment

Year	Population within	1 mile	Employment within 1	t mile Total Pop and Employ w		ithin 1 mile	
	38061		64341	102,402			
	57487		70356	127,843			
Pedestr	rian Use Calcula	tions			Year of Opening	Weeko	2040 Jay 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: <b>{#3 X 50%}</b> 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: <b>{#5 X 30%}</b> or other percent, if justified)	0	0
7.	= Number of SOV trips reduced per day (#5 - #6)	0	0
12.	Enter the value of <b>{#7 x .4 miles}</b> . <b>(= the VMT reduced per day)</b> (Values other than .4 miles must be justified by sponsor)	0	0
8.	= Number of pounds GHG emissions reduced (#8 x 0.95 lbs.)	0	0
9.	If values would be distinctly greater for weekends, describe the magni	tude of difference:	

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

D. Vulnerable Populations						
	Vulnerable Populations	Population within 1 mile				
	6. Persons over age 65	1565				
Use Current	7. Minority persons	9820				
Census Data	8. Low-Income households	2329				
	9. Linguistically-challenged persons	1266				
	10. Individuals with disabilities	2015				
	<b>11.</b> Households without a motor vehicle	1813				
	12. Children ages 6-17	2029				
	13. Health service facilities served by project	0				

#### 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	41,087
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 <b>{#3 - #4} =</b> Reduced VHD	0
6.	Enter value of <b>{#5 X 1.4} = Reduced person hours of delay</b> (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 ma	gnitude 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) Fatal crashes 0 Serious Injury crashes 7 Sponsor must use industry **Other Injury** crashes 31 accepted crash reduction factors (CRF) or accident modification Property Damage Only crashes 316 factor (AMF) practices (e.g., 2. Estimated reduction in crashes applicable to the project scope NCHRP Project 17-25, NCHRP (per the five-year period used above) Report 617, or DiExSys Fatal crashes reduced 0 methodology). 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					
Ro	adway Pavement					
1.	1. Current roadway pavement condition Fair					
2.	Describe current pavement issues and how the project will address them.	- -				
	The current concrete pavement is not sealed or overlaid with asphalt, so water has in caused cracking, delamination, and efflorescence. These weaken the deck, reducing would repair delamination and overlay asphalt to protect the deck, so it can reach its	nfiltrated its total li s full life.	the deck and fespan. This project			
3.	Average Daily User Volume		41,087			
Bio	cycle/Pedestrian/Other Facility					
4.	Current bicycle/pedestrian/other facility condition		Good			
5.	Describe current condition issues and how the project will address them.					
	The pedestrian facilities are generally in good condition, but the sidewalks need som will be replaced and upgraded to current CCD standards.	e repairs	and the curb ramps			
6.	Average Daily User Volume		0			
н.	Bridge Improvements					
1.	<ol> <li>Current bridge structural condition from CDOT The bridge deck, which is of most concern, is rated in fair condition, however it is deteriorating at an increased rate each year. This project will address the issues currently seen on the deck and help protect it from future damage.</li> </ol>					
2.	Describe current condition issues and how the project will address them.					
	Currently, the bridge expansion joints need repair, and allow water to infiltrate to the structure below the surface. In addition, the deck shows cracking and signs of water infiltration. The condition rating of the 22nd and 23rd Street bridges were downgraded this year. This project will fix both of those issues and protect the deck to minimize future occurrences.					
3.	Other functional obsolescence issues to be addressed by project					
	This project will replace the existing expansion joints, which are damaged and allowing water to infiltrate below the driving surface. This water causes damage to the bridge bearing pads and to the bridge deck. Also, the damaged joints cause additional wear on vehicle tires.					
Δ	4. Average Daily User Volume over bridge 41,087					

I.	Other Beneficial Variables (identified and calculated by the sponsor)	
1.	As described in the project scope, numerous Advance Transportation technology elements wis structure or the signals.	ill be installed on the
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
	N/A	
2.	Negative impact on vulnerable populations	
	Disruption during construction will impact all travelers.	
3.	Other:	