APPLICATION OVERVIEW

<u>What</u>: The Call for Projects for the FY 2024-2027 Regional Transportation Operations and Technology Set-Aside <u>Funding Available</u>: at least \$16,000,000

Call Dates: June 1, 2023 until July 7, 2023, 5 pm

Application Submittals: submit the items below to Jerry Luor (jluor@drcog.org)

- REQUIRED: a <u>single PDF document</u> containing 1) this application (before saving to PDF, press Ctrl-A to select all, and F9 to update all formulas), 2) one location map/graphic, 3) cost estimate (your own or the CDOT <u>cost</u> <u>estimate form</u>), 4) CDOT/RTD concurrence response (if applicable), 5) completed CDOT SEA-Local Agency Template, 6) project support form(s), and 7) any <u>required</u> documentation based on the application text (i.e., FHWA emissions calculators). Please <u>DO NOT</u> attach additional cover pages, embed graphics in the application, or otherwise change the format of the application form.
- 2. OPTIONAL: Submit **one additional** PDF document containing any supplemental materials, if applicable.
- 3. REQUIRED: Submit a single zipped GIS shapefile of your project. At a minimum, the shapefile should consist of project limits and planned equipment locations.

Other Notable items:

- <u>Eligibility</u>: Projects must align with the eligibility guidelines in the <u>Policies for FY2024-2027 TIP Set-Aside</u> <u>Programs</u>. Proposed work on roadways must primarily be located on the <u>DRCOG Regional Roadway System</u> to be eligible for funding (the DRCOG RRS can also be viewed within the <u>DRCOG Data Tool</u>).
- <u>Call-for-Projects Pre-Application Webinar</u>: To be eligible to submit an application, at least one person from your agency must have attended the Regional Transportation Operations and Technology Set-Aside Pre-Application Webinar on April 26, 2023.
- <u>Application Data</u>: To assist sponsors in filling out the application, DRCOG has developed the <u>DRCOG Data Tool</u>. A link to the instructions is also included. Additionally, sponsors may download datasets to run their own analyses from this same site.
- <u>Project Affirmation</u>: The application must be affirmed by either the applicant's City or County Manager, Chief Elected Official (Mayor or County Commission Chair) for local governments, or agency director or equivalent for other applicants.
- <u>Evaluation Process</u>: DRCOG staff will post all applications. DRCOG staff will assemble an evaluation panel to review and make recommendations for funding, including a ranked waiting list. The recommended list of projects will be presented to the Regional Transportation Operations Working Group and Advanced Mobility Partnership Working Group prior to action by the DRCOG committees and Board.
- If you have any questions or need assistance, contact <u>gmackinnon@drcog.org</u> or <u>jluor@drcog.org</u>.

APPLICATION FORMAT

The Regional Transportation Operations and Technology set-aside application contains two parts: *project information* and *evaluation questions*.

Project Information

Applicants enter **foundational** information for the *project/program/study* (hereafter referred to as *project*), including a problem statement, project description, and concurrence documentation from CDOT and/or RTD, if applicable. This section is not scored.

Evaluation Questions

This part includes four sections (A-E) for the **applicant to provide qualitative and quantitative responses** to use for scoring projects. The checkboxes and data entry fields should <u>guide</u> the applicant's responses. They are not directly scored but provide context as reviewers consider the full response to each question. Applicants may access the <u>DRCOG</u> <u>Data Tool</u> as well as other relevant data resources.

Scoring Methodology: Each section will be scored on a scale of 0 to 5, <u>relative</u> to other applications received. All questions will be factored into the final score, with any questions left blank receiving 0 points. The four sections are weighted and scored as follows:

5	The project implements or advances several Primary initiatives.
4	The project implements or advances one Primary initiative
3	The project implements or advances several Secondary initiatives.
2	The project implements or advances one Secondary initiative.
1	The project implements or advances one or more Tertiary initiatives.
0	The project implements no initiatives.

5	The project benefits will substantially address a major subregional problem and benefit people and businesses in multiple communities.
4	The project benefits will significantly address a major subregional problem primarily benefiting people and businesses in one community.
3	The project benefits will either moderately address a major subregional problem or significantly address a moderate -level subregional problem.
2	The project benefits will moderately address a moderate-level subregional problem.
1	The project benefits will address a minor subregional problem.
0	The project does not address a subregional problem.

The TIP set-aside's investments should implement the 2050 Metro Vision Regional Transportation Plan (2050 MVRTP) regional project and program investment priorities, which contribute to addressing the Board-adopted Metro Vision objectives and the federal performance-based planning framework required by the Federal Highway Administration and Federal Transit Administration as outlined in current federal transportation legislation and regulations. Therefore, projects will be evaluated on the degree to which they address the six priorities identified in the 2050 MVRTP: safety, active transportation, air quality, multimodal mobility, freight, and regional transit. It is anticipated that projects may not be able to address all six priorities, but it's in the

applicant's interest to address as many priority areas as possible. Relevant quantitative data is required to be included within narrative responses. The table below demonstrates how each priority area will be scored.

5	The project provides demonstrable substantial benefits in the 2050 MVRTP priority area and is determined to be in the top fifth of applications based on the magnitude of benefits in that priority area.
4	The project provides demonstrable significant benefits in the 2050 MVRTP priority area.
3	The project provides demonstrable moderate benefits in the 2050 MVRTP priority area and is determined to be in the middle fifth of applications based on the magnitude of benefits in that priority area.
2	The project provides demonstrable modest benefits in the 2050 MVRTP priority area.
1	The project provides demonstrable slight benefits in the 2050 MVRTP priority area and is determined to be in the bottom fifth of applications based on the magnitude of benefits in that priority area.
0	The project does not provide demonstrable benefits in the 2050 MVRTP priority area.

Score	% non-Federal Funds
5	36% and above
4	31 - 35.9%
3	26 - 30.9%
2	21 - 25.9%
1	17.21 - 20.9%*
0	17.21%

*(includes 100% eligible projects with no match)

5	Substantial readiness is demonstrated and all known obstacles that are likely to result in project delays have been mitigated.
4	Significant readiness is demonstrated and several known obstacles that are likely to result in project delays have been mitigated.
3	Moderate readiness is demonstrated and some known obstacles that are likely to result in project delays have been mitigated.
2	Slight readiness is demonstrated and some known obstacles that are likely to result in project delays have been mitigated.
1	Few mitigation or readiness activities have been demonstrated.
0	No mitigation or readiness activities have been demonstrated.

Project Information

1.	Project Title		Aurora Traffic Management Center (TMC)					
2.			Start point: N/A					
	Project Location	0N as appropriate (see	End p	oint: N/A				
	Page 1)		OR Ge Auror	eographic A a, CO 80011	rea: Aurora North S 1	Satellite Comple	ex, 15700 E 32 nd Ave,	
3.	Project Sponse financially respor	Or (entity that will be asible for the project)	City o	f Aurora				
4.	Project Conta	ct Person:						
Na	me: Jim Paral				Title: Senior Engir	neer, Public Wo	orks Engineering	
Ph	one: : 303-739-	7328			Email: jmparal@a	auroragov.org		
5.	Required Con CDOT Right-of system, acces	currence and Project f-Way, involve a CDO s RTD property, or ree	Support: Does this p Troadway, connect		roject touch ∴o a CDOT ent to operate		☐ Yes ⊠ No yes, provide a completed Peer Agency apport Form for each partner.	
	service? Does	this project directly i	ect directly involve other local agency partners.			Support Form f		
6.	What	If this project is lis <u>MVRTP)</u> , provide	sted in th the stagi	e <u>DRCOG 20</u> ng period: (<mark>050 Metro Vision R</mark> Click or tap here to	egional Transpo enter text.	ortation Plan (2050	
	planning document(s)			Planning Document Title: TMC Space Planning Study				
	identifies	Local/Regional pla	an:	Adopting agency (local agency Council, CDOT, RTD, etc.): N/A				
Pro	this project? vide link to ument(s) and erenced page nber if possible, provide umentation in supplement			Provide o applicab	date of adoption by le: N/A	/ council/board	/commission, if	
doc refe nun or p		Please describe p review/engageme date:	ublic ent to	N/A				
doc the		Itation in Idement Other pertinent details: The TMC Space Planning Study is currently a precursor for this project.				underway and serves as		
7.	Identify the pr	oject's key phases ar s should correspond with	nd the an the "Phase	ticipated so	chedule of phase m d″ in the Funding Break	nilestones . down table below)	
Phases to be included:		Maj	Major phase milestones:		Anticipated completion date (based on October 2023 DRCOG approval date): (MM/YYYY)			
		🛛 Precor	nstructio	n 🗵	Construction	🗆 Both		
<u>F</u>	REQUIRED FOR ALL PHASESIntergovernmental Agreement (IGA) et (Assumed process is 4-9 months; any v execution is NOT reimbursable)			executed with CDO work performed be	T/RTD efore	06/2024		
		Design contract N	lotice to	Proceed (N	TP) issued (if using	a consultant):	N/A	
	Design	Design scoping m	eeting he	eld with CD0	OT (if no consultant	t):	N/A	
	Design	FIR (Field Inspecti	on Revie	w):		N/A		
		FOR (Final Office	Review):				N/A	
	Environmental	nmental consultant):				N/A		

	Environmental scoping meeting held with CDOT (if no consultant):	N/A	
Right-of-W/av	Initial set of ROW plans submitted to CDOT:Estimated number of parcels to acquire:Enter Number	N/A	
	ROW acquisition completed:	N/A	
	Required clearances:	10/2025	
	Project publicly advertised:	1/2026	
⊠Study	Kick-off meeting held after consultant NTP (or internal if no consultant):	10/2024	
□Equipment Purchase (Procurement)	RFP/RFQ/RFB (bids) issued:	N/A	
□Other Phase not Listed	First invoice submitted to CDOT/RTD:	3/2026	
Describe: Describe		5,2020	

8. Problem Statement: What specific subregional problem/issue will the transportation project address?

Currently, the City of Aurora does not have a TMC or dedicated data center to secure its traffic signal system and ITS-related servers and network hardware. There is no central point to view the traffic signals, detection systems, communications infrastructure, CCTV cameras, DMS, or other City resources. There is currently not an option to monitor signals, minimize impacts of traffic incidents, or provide inter-agency collaboration from a systemwide approach. The installation of a TMC would allow the city to actively monitor and manage intersections across the system. The TMC would also house a dedicated data center to promote both physical cybersecurity and IT resilience (e.g., disaster recovery) to withstand and recover from deliberate attacks, accidents, or naturally occurring threats or incidents. Through the TMC, the City is looking forward to being able to support traffic signal system server-to-server connections, which would promote more coordination with adjacent transportation agencies such as CDOT Region 1, City and County of Denver, and the City of Lakewood. Additionally, the TMC will provide "Situational Awareness" for Traffic Operations staff, and ability to be active participants in regional Traffic Incident Management efforts.

9. Identify the project's key elements. A single project may have multiple project elements.

Roadway

- ⊠Operational Improvements
- □General Purpose Capacity (2050 MVRTP)
- □ Managed Lanes (2050 MVRTP)
- □ Pavement Reconstruction/Rehab
- □Bridge Replace/Reconstruct/Rehab

Grade Separation

- \Box Roadway
- □Railway
- Bicycle
- □Pedestrian

Regional Transit¹

□ Rapid Transit Capacity (2050 MVRTP)

⊠ Safety Improvements

Active Transportation Improvements

- □ Bicycle Facility □ Pedestrian Facility
- ⊠ Air Quality Improvements
- □ Improvements Impacting Freight

Multimodal Mobility (i.e., accommodating a broad range of users)

Complete Streets Improvements

 \Box Mobility Hub(s)

□ Transit Planning Corridors

□ Transit Facilities (Expansion/New)

□ **Other**, briefly describe: Click or tap here to enter text.

¹For any project with transit elements, the sponsor must coordinate with RTD to ensure RTD agrees to the scope and cost. Be sure to include RTD's concurrence in your application submittal.

10. Define the scope and specific elements of the project (including any elements checked in #9 above).
<u>DO NOT</u> include scope elements that will not be part of the DRCOG funded project or your IGA scope of work (i.e., adjacent locally funded improvements <u>or</u> the project merits and benefits). Please keep the response to this question tailored to details of the scope only and no more than five sentences.

The project will fund the development of the City's TMC as determined by the TMC Space Planning Study (currently in progress). Prior to installation, a Concept of Operations (ConOps) will be developed using local funds that describes how the TMC will be employed and supported. Following approval of the ConOps, the installation of the TMC is expected to include: a main control center, operator workstations, video wall, conference room or area to support meetings, secure data center, Uninterruptible Power Supply (UPS), standby power system, dedicated Heating, Ventilation, and Air Conditioning (HVAC) system, fire protection system, and Computer Aided Dispatch (CAD) terminal. The proposed TMC will be constructed within an existing City building located in the Aurora North Satellite Complex. The design portion of this project will be completed prior to FY 26 using local funds.

11. What is the current status of the proposed scope as defined in Question 10 above? *Note that overall project readiness is addressed in more detail in Section E below.*

A TMC Space Planning Study has been initiated. The results of the planning study will guide the design of the TMC (i.e. size of space, work flow/circulation, ADA and life safety criteria, etc.) based on a user-centric approach that defines the requirements needed to fulfill the mission objectives of the City's TMC. The study is expected to be completed by November 2023.

12. Would a smaller DRCOG-allocation than requested be acceptable, while maintaining the original intent of the project?

🗆 Yes 🖾 No

If yes, smaller meaningful limits, size, service level, phases, or scopes, along with the cost, **MUST** be defined.

Smaller DRCOG funding request: N/A

Outline the differences between the scope outlined above and the reduced scope: N/A

Project Financial Information and Funding Request	(All funding amounts in \$1,000s)		
To update the formulas below, enter your information, highlight the formulas, and p	ress F9 or right-click and sele	ect Update Field.	
Total amount of Federal Funding Request (in \$1,000's) (Not to exceed 82.79% of the total project cost)	\$1,101	68.98% of total project cost	

Match Funds (in \$1,000's) List each funding source and contribution amount.	Contribution Amount	% Contribution to Overall Project Total
Click or tap here to enter text.	\$495	31.0%
Click or tap here to enter text.	\$Match Amount	0.0%
Click or tap here to enter text.	\$Match Amount	0.0%
Click or tap here to enter text.	\$Match Amount	0.0%
Click or tap here to enter text.	\$Match Amount	0.0%
Click or tap here to enter text.	\$Match Amount	0.0%
Total Match (private, local, state, regional, or federal)	\$ 495	31.0%
Project Total	\$1,596	

Funding Breakdown (in \$1,000s) (by program year) ¹ (Total funding should match the Project Total from above) To update the formulas below, enter your information, highlight the formulas (or Ctrl-A), and press F9. OR close and reopen the file.						
	FY 2024	FY 2025	FY 2026	FY 2027	Total	
DRCOG Requested Funds	\$0	\$0	\$1,101	\$0	\$1,101	
CDOT or RTD Supplied Funds ²	\$0	\$0	\$0	\$0	\$ 0	
Local Funds (Funding from sources other than DRCOG, CDOT, or RTD)	\$0	\$0	\$495	\$0	\$ 495	
Total Funding	\$ 0	\$ 0	\$1,596	\$ O	\$1,596	
Phase to be Initiated	Select Phase	Select Phase	Construction	Select Phase		
Notes:	 Fiscal years are October 1 through September 30 (e.g., FY 2024 is October 1, 2023 through September 30, 2024). The proposed funding plan is not guaranteed if the project is selected for funding. While DRCOG attempts to accommodate applicants' requests, final funding will be assigned at DRCOG's discretion. Funding amounts must be provided in year of expenditure dollars using a recommended 3% inflation factor. Only enter funding in this line if CDOT and/or RTD specifically give permission via concurrence letters or other written source. 					
Affirmation:	By checking this box, the applicant's Chief Elected Official (Mayor or County Commission Chair/City or County Manager/Agency Director) has certified it allows this application to be submitted for potential DRCOG-allocated funding and will follow all local, DRCOG, state, and federal policies and regulations if funding is awarded.					

Evaluation Questions

A. Deployment of RTO&T Initiatives in RTO&T Strategic Plan

Select the initiatives to be deployed or advanced by this proposed project. It is possible to select more than one initiative.

30%

WEIGHT

Primary initiatives	
Develop a Regional Situational Awareness platform.	\boxtimes
Develop processes to share traffic camera view and control between jurisdictions and public safety.	\boxtimes
Develop a Regional Performance Monitoring Data Archive platform.	\boxtimes
Develop strategies and processes to coordinate performance-based management.	\boxtimes
Deploy additional supporting transportation surveillance and control systems and infrastructure.	
Develop Traffic Incident Management standard operating procedures.	\boxtimes
Standardize and implement transit signal priority performance management and system optimization procedures.	\boxtimes
Secondary initiatives	
Develop evacuation and recovery plans and exercises.	
Develop processes to coordinate traveler information messaging across the region.	\boxtimes
Develop active work zone monitoring and management in the field.	\boxtimes
Deploy additional safety-focused technology applications	
Expand the Regional Performance Monitoring Data Archive platform.	\boxtimes
Expand the Regional Situational Awareness platform.	\boxtimes
Expand transit signal priority deployment.	\boxtimes
Tertiary initiatives	
Develop a Regional Multimodal Traveler Information platform.	\boxtimes
Develop a process to monitor regional parking availability, capacity and pricing.	
Develop a multimodal trip planner and reservation/ payment system.	
Develop and deploy dynamic ride-sharing.	
Develop and implement curbside management standards.	
Develop continuity of operations plans.	\boxtimes

Describe how this project will deploy, advance or achieve the selected initiatives.

This project advances Primary Initiatives 1 through 4,6 and 7. With the installation of a TMC, the project will provide a Regional Situational Awareness platform that enables operators to monitor real time road conditions, signal malfunctions, and lane blockages. In the future, this data could be shared with DRCOG to enhance the regional platforms and support Traffic Incident Management initiatives. The TMC will allow for coordination to occur with Aurora Police Department, Aurora Fire Department, and Aurora 911. A common CCTV video management system is currently being installed for these agencies in Aurora. Data can be shared between these agencies. Additionally, data could be shared with other city agencies that share jurisdictional boundaries with Aurora, including City/County of Denver and Lakewood along the I-70 Corridor who own common traffic signal systems. Additionally, the TMC would support the primary initiative 6 by providing operators with standard operating procedures established through the Regional Traffic Incident Management Program and ability to adjust traffic signal timings during incidents. The TMC would also support initiative 7 by allowing City staff to more easily monitor existing TSP intersections as well as support the implementation of future TSP on Colfax. This would also give City staff the ability to pull and share data more easily with RTD. The proposed ConOps will involve the various stakeholders identified earlier and address all of their needs and these identified initiatives.

This project advances secondary initiatives 2, 3, 5, 6, and 7. This project will advance secondary initiative 2. The first step in providing traveler information systems is to observe the existing and ongoing roadway conditions. This project will provide the ability to obtain the necessary traveler data and will facilitate the ability to have future traveler information systems. This project will also advance secondary initiative 3 by providing the ability to monitor work zones remotely at the TMC. Similar to the primary initiatives, this project advances secondary initiatives 5 and 6 by providing the ability to monitor and collect ATSPM data. In the future, this data could be

shared with the Regional Performance Monitoring Data Archive platform. This project also supports initiative 7 by allowing City staff to bring back more TSP and ATSPM data that can be shared with RTD.

This project also advances tertiary initiative 1 by providing the ability to monitor and collect data such as traffic camera snapshots or roadway conditions that could be shared in the future. This project also advances tertiary initiative 6 through a TMC design that supports traffic operations essential function necessary for the continuity of operations and address disaster recovery through the use of the TMC's data center.

The Regional Transportation Operations and Technology Strategic Plan emphasizes a data management concept that requires interagency information sharing. Describe in detail how this project will share data with other regional entities.

The scope of this project will provide Aurora the ability to obtain data across their traffic network including roadway conditions, traffic camera snapshots, work zone information, among other data and house it in the TMC's data center. Upon the development of dataset criteria, dataset structures/format, dataset security, a regional platform, and interagency agreements, the City is in favor of exploring how its traffic data could be shared with regional partners. Based on the progress made by CDOT Region 1, City and County of Denver, and City of Lakewood, the City is looking forward to establishing our traffic signal system server-to-server connection to support regional mobility and enhance traffic operations situational awareness. The City understands that RTD would like to deploy a centralized TSP system that would enable a faster and more efficient deployment of TSP. Implementing this TMC projects would allow the City to better collaborate with RTD and support their regional data sharing and TSP goals.

B. Regional Impact of Proposed Project

Provide **<u>qualitative</u>** and **<u>quantitative</u>** responses to the following questions on the subregional impact of the proposed project. Be sure to provide all required information for each question. Quantitative data from is available from the <u>DRCOG Data Tool</u>.

1. Why is this project regionally important? Relevant quantitative data in your response is required.

Although the physical construction will be focused at the Aurora North Satellite Complex, the proposed project will serve as the central point for the City's entire network of traffic signals. The implication is that road users that utilize any Aurora traffic signal will ultimately benefit from this project. Additionally, the TMC will facilitate for data to be shared between nearby jurisdictions.

In addition to the ability to monitor, detect, and repair traffic signal malfunctions quicker, the TMC will elevate the City's capacity to support regional Traffic Incident Management in an active manner. According to the 'Intelligent Transportation Systems Benefits, Costs, Deployment, and Lessons Learned' report from the FHWA, the bulk of traffic incident management programs studied have shown incident durations reduced by 30 to 40 percent.

The TMC will be collaborative as it plans to coordinate with CDOT, other local traffic agencies, RTD, E-470, and City public safety agencies. It has the potential to transform how the City can actively manage and operate its roadways while also improving the safety and mobility of all travelers. As mentioned throughout this application, the TMC will enable operators to:

- Make decisions in real-time
- Operate in an environment that utilizes state-of-the-art technologies to enable greater situational awareness for its roadway network
- Proactively manage and control traffic
- Coordinate and share information with other regional partners

2. How will the proposed project address the specific transportation problem described in the **Problem Statement** (as submitted in Project Information, #8)? Relevant quantitative data in your response is <u>required</u>.

The installation of a TMC would address the problem statement by providing a central point for the City to monitor traffic signals, detection systems, communications, CCTV cameras, Dynamic Message Signs (DMS), and other City resources. The TMC would provide the City the ability to monitor and provide operations management for construction activities, incident management, traffic signal malfunctions, natural disasters, special events, and weather-related events. In combination with the deployment of additional fiber and radios, the City will have the capability to constantly monitor the roadway network and proactively manage traffic.

The TMC will provide "Situational Awareness" for Traffic Operations staff, and ability to be active participants in regional Traffic Incident Management efforts. This integration of real-time information will lead to reduced incident duration times of 30 to 40 percent.

WEIGHT

3. Does the proposed project benefit multiple municipalities and/or subregions? If yes, which ones and how? Also describe any funding partnerships (other subregions, regional agencies, municipalities, private, etc.) established in association with this project.

The project is looking to include a Computer Aided Dispatch (CAD) terminal to the TMC in partnership with the Aurora Police Department (APD) in an effort to enhance coordination. This would help to minimize response times to incidents in two ways: ability to dispatch from the TMC when operators confirm an incident has occurred and the ability to learn about incidents that TMC operators are not aware of yet through monitoring APD radio communications. The TMC would also allow for the City to join the City of Lakewood, City and County of Denver, and CDOT for the center-to-center connection so it has the ability to observe systemwide regional traffic operations and coordinate with its peers to check on signal operations, monitor regional arterial coordination parameters, and implement pre-planned incident timing plans. Through its demonstrated partnership with RTD, the City can also check on the operational status of Transit Signal Priority corridors such as SH 30 (Havana Street) and US 40 (Colfax Avenue). This creates a win-win situation for transit users and the motoring public since the transit vehicle can be serviced without interruption to the active coordination plan in effect.

The TMC has the potential to transform how the City can actively manage and operate its roadways with the goal of improving the mobility and safety of all travelers. It will enable the TMC operators to (1) coordinate and share information with other agencies, (2) make more decisions in real-time, (3) effectively operate using new technologies designed to support user-centric needs for situational awareness, and (4) proactively manage and control traffic. As an active member of the Metro Denver Traffic Incident Management team, these efforts will benefit the entire region through communications and coordination.

4. Disproportionately Impacted and Environmental Justice Communities

This data is available in the DRCOG Data Tool. Completing the below table and referencing <u>relevant</u> quantitative data in your response is <u>required</u>.

To update the formulas below, enter your information, highlight the formulas (or Ctrl-A), and press F9. OR close and reopen the file.						
	DI & EJ Population Groups	Number within ½ mile	% of Total	Regional %		
	a. Total population	9850	-	-		
Use 2015-2019	b. Total households	2999	-	-		
American	c. Individuals with low-income	4408	45%	20%		
Community	d. Individuals of color	7875	80%	33%		
Survey Data	e. Adults age 60 and over	1062	11%	13%		
	f. Youth under 18	3249	33%	16%		
(Use a 0.5 mile	g. Individuals with limited English proficiency	2911	30%	3%		
[Equity data tab]	h. Individuals with a disability	891	9%	9%		
	i. Households that are housing cost-burdened	1304	43%	32%		
	j. Households without a motor vehicle	98	3%	5%		

For Lines c. – i. use definitions in the <u>DRCOG Title VI Implementation Plan</u>. For Line j., as defined in C.R.S. 24-38.5-302(3)(b)(I): "'cost-burdened' means a household that spends more than thirty percent of its income on housing."

Describe how this project will improve access and mobility for each of the applicable disproportionately impacted and environmental justice population groups identified in the table above, *including the <u>required</u> quantitative analysis:*

The table above reflects the DI&EJ populations groups within 0.5 mile of the planned TMC location (North Aurora Satellite Complex. However, the TMC will be a centralized location for the monitoring of the entire roadway network, thus the effected population groups is expected to be larger than shown in the table above. Each of the households and/or groups listed above will be able to access and utilize the signals within the Aurora network, and thus will benefit from any system wide or corridor improvements.

- 5. How will this project move the subregion toward achieving the shared <u>regional transportation outcomes</u> established in <u>Metro Vision</u> in terms of...
 - Land Use, community, urban development, housing, employment? (Improve the diversity and livability of communities. Contain urban development in locations designated for urban growth and services. Increase housing and employment in urban centers. Diversify the region's housing stock. Improve the region's competitive position.)
 - As indicated by DI&EJ community percentages above, this project will impact those communities.
 - Multimodal transportation, safety, reliability, air quality? (Improve and expand the region's multimodal transportation system, services, and connections. Operate, manage, and maintain a safe and reliable transportation system. Improve air quality and reduce greenhouse gas emissions. Reduce the risk of hazards and their impact.)
 - The installation of a TMC will allow for monitoring of the signal network. The monitoring will occur under day-to-day conditions as well as special events such as weather incidents, special events, or incident management. This monitoring will improve the reliability of the system by maximizing the available capacity of the roadway network through proactive monitoring of congestion and delay to ultimately enhance throughput. A secondary benefit to this monitoring is improving air quality by reducing air pollution generated by vehicle queuing. TMC personnel will have the ability to check traffic signals on TSP corridors to assess the number of TSP call requests that were served and proactively assess if any problems are occurring. Through this proactive process, transit delays can be minimized to improve travel time, system reliability, and schedule adherence to promote transit. Crashes, especially during peak periods, can have a significant impact on travel times and create a risk for secondary accidents. Active involvement by TMC personnel may facilitate earlier intervention by the appropriate emergency service providers and help to save lives.
 - Connection/accessibility to particular locations supporting healthy and active choices? (Connect people to natural resource and recreational areas. Increase access to amenities that support healthy, active choices. Improve transportation connections to health care facilities and service providers. Improve access to opportunity.)

 N/A

6. <u>Items marked with an asterisk (*) below are available in the DRCOG Data Tool</u>.

- Is there a DRCOG designated urban center within ½ mile of the project limits?*
 ☑ Yes □ No If yes, please provide the name: The following urban centers are within the city of Aurora City Center, Florida, Iliff Avenue Center, I-225 /Parker Road, Iliff Center, Smoky Hill, Colfax Avenue, Fitzsimons, 13th Avenue, Buckingham Center, 1st Avenue Center, Peoria-Smith
- Does the project connect two or more urban centers?*
 □ Yes ⊠ No If yes, please provide the names: Click or tap here to enter text.
- Is there a transit stop or station within ½ mile of the project limits?* Bus stop: ⊠ Yes □ No If yes, how many:945 Rail station: ⊠ Yes □ No If yes, how many: 10
- Is the project in a locally-defined priority growth and development area and/or an area with zoning that supports compact, mixed-use development patterns and a variety of housing options?
 □ Yes ⊠ No
 - If yes, provide a link to the relevant planning document:
 - If yes, provide how the area is defined in the relevant planning document:

Provide households and employment data* [Population and Employment tab]	2020	2050
Jobs within ½ mile	7,512	9,830
Households within ½ mile	333	410

Describe how this project will improve transportation options in and between key geographic areas including DRCOG-defined urban centers, multimodal corridors, mixed-use areas, Transit Oriented Development (transit near high-density development), or locally defined priority growth areas, *including the <u>required</u> quantitative analysis*:

N/A

 Describe how this project will improve access and connections to key employment centers or subregional destinations. In your answer, define the key destination(s) and clearly explain how the project improves access and/or connectivity.

This project will reduce congestion and lead to reduced incident duration times of 30 to 40 percent.

8.	Congestion Mitigation Process Mobility Score					
	Completing the below table and referencing <u>relevant</u> quantite	ntive data in you	r response is <u>required</u> . In the DRCOG			
	Data Tool, use a 0.02 mile buffer distance.					
	Provide congestion mobility parameters* 2021					
	Sum: length-weighted score 309.8					
	Sum: miles 67.37					
	Congestion Mobility Score 4.60					
	(The Congestion Mobility Score will automatically calculate based on values entered. If this has not updated, select the box and click F9)					

C. Metro Vision Regional Transportation Plan Priorities

- Qualitative and quantitative responses are REQUIRED for the following items on how the proposed project contributes to the project and program investment priorities in the adopted 2050 Metro Vision Regional Transportation Plan. To be considered for full points, you must fully answer all parts of the question, including incorporating quantitative data into your answer. (see scoring section for details). Quantitative data from is available from the DRCOG Data Tool.
 Checkboxes and data tables help to provide context and guide responses, but do not account for the full range of potential improvements and are not directly scored, but are required to be completed.
 Not all proposed projects will necessarily be able to answer all questions, however it is in the applicant's interest to address as many priority areas as possible.
 Provide improved travel options for all modes. (drawn from 2050 MVRTP priorities; federal travel time reliability, infrastructure condition, & transit asset management performance
 - Multimodal
 (drawn from 2050 MVRTP priorities; federal travel time reliability, infrastructure condition, & transit asset management performance

 Mobility
 measures; & Metro Vision objective 4)

 Examples of Project Elements: combinations of improvements that support options for a broad range of users, such as complete

 streets improvements, or an interchange project that incorporates transit and freight improvements, etc.
- What modes will project improvements directly address?
 □Walking □ Bicycling ⊠ Transit ⊠ SOV □ Freight □ Other: Click or tap here to enter text.
- List the elements of this project which will address the above modes (i.e., sidewalk, shared use path, bus stop improvements, new general purpose or managed lanes, etc.): Through the demonstrated partnership with RTD, the TMC will allow for monitoring of the operational status of TSP corridors such as SH 30 (Havana Street) as well as future TSP corridors. Through active participation in Regional Traffic Incident Management program by TMC operators, this project will reduce congestion and lead to reduced incident duration times of 30 to 40 percent.
- Will the completed project be a complete street as described in the <u>Regional Complete Streets Toolkit</u>? <u>Complete Streets Typology is available in the DRCOG Data Tool</u>.

 \Box Yes \boxtimes No If yes, describe how it implements the Toolkit's strategies in your response. Click or tap here to enter text.

- Does this project improve travel time reliability and reduce delay?
 ☑ Yes □ No
- Does this project improve asset management of roadway infrastructure, active transportation facilities, and/or transit facilities or vehicle fleets?

🗆 Yes 🖾 No

• Does this project implement resilient infrastructure that helps the subregion mitigate natural and/or humanmade hazards?

🗆 Yes 🖾 No

Question: Describe how this project will help increase mobility choices for people, goods, and/or services. Please include quantitative information, including any items referenced above, in your response. Note that the proposed roadway operational improvements must be primarily on the DRCOG <u>Regional Roadway System</u> and/or <u>Regional Managed Lanes System</u>.

The TMC will provide the ability to monitor TSP corridors, ultimately reducing delays and providing more reliability and thus promoting the use of transit.

Question: Describe how this project will help improve asset reliability and availability. Please include quantitative information in your response (for example, reduce mean time to repair and increase mean time between failures).

One of the main benefits of the TMC is to remotely know what is happening in the field without having to wait for a call from the public. When these calls come in, a traffic signal technician needs to be dispatched to the field to identify the issue(s). Using the TMC to monitor the traffic signal system will help to proactively identify issues occurring in the field, identify some candidate options to fix the problem, and ensure that the technician has the correct parts and tools to restore signal operations. In many cases, the problems could range from signal equipment failure, but it could also be an electrical issue, utility outage, communications failure, firmware problem, or a combination of multiple items. Having the capability to remotely identify possible problems and getting a truck rolling

to the site does not impact the Mean Time to Repair (MTTR) or Mean Time Between Failures (MTBF) but the primary metrics that would benefit from the TMC are Mean Time to Acknowledge (MTTA) and Mean Time to Respond (MTTResp). MTTA is the average time it takes from when a failure occurs at a signalized intersection to when work begins to resolve it, while MTTResp is the average time it takes to recover from a failure starting from the time when the failure was discovered. Proactive monitoring from the TMC and a faster response to a failure improves safety and minimizes delays.

Question: Describe how this project will reduce delays and improve travel time reliability. Please include quantitative information in your response (for example, vehicle-hours traveled and travel time index).

The TMC will allow for proactive monitoring of congestion and delay. Additionally, the TMC provides the ability to remotely modify traffic signal timing to enhance throughput which will reduce vehicle queuing and improve air quality. This project will reduce congestion and lead to reduced incident duration times of 30 to 40 percent.

Air Quality	Improve air quality (drawn from 2050 MVRTP Metro Vision objectives 2 Examples of Project Eleme supportive infrastructure;	and reduce gree <u>priorities</u> ; <u>state greenhc</u> <u>3, & 6a</u>) ents: active transportatic etc.	nhouse gas emis	ssions. ederal congestion & emis	sions reduction perform	<u>mance measures;</u> rric vehicle	
 Does this M Yes [Does this M Yes [Does this M Yes [s project reduce conges ☐ No s project reduce vehicle ⊠ No s project reduce single-o ⊠ No	tion? miles traveled (VI occupant vehicle (:	MT)? SOV) travel?				
Emi	ssions Reduced	СО	NOx	VOCs	PM 10	CO₂e	
	(kg/day)	143.95	13.38	6.51	10.12	18,019	
Use the <u>FH</u> year of ope submittal p	Use the <u>FHWA CMAQ Calculators</u> or a similar reasonable methodology to determine emissions reduced. Base your calculations on the year of opening. Please attach a screenshot of your work (such as the FHWA calculator showing the inputs and outputs) as part of your submittal packet.						

Question: Describe how this project helps reduce congestion and air pollutants, including but not limited to carbon monoxide, ground-level ozone precursors, particulate matter, and greenhouse gas emissions. Please include quantitative information, including any items referenced above, in your response.

The TMC will allow for proactive monitoring of congestion and delay. Additionally, the TMC provides the ability to remotely modify traffic signal timing to enhance throughput. This optimization will reduce vehicle queuing and thus reduce emissions across the signal system. This project will reduce congestion and lead to reduced incident duration times of 30 to 40 percent

This project is expected to reduce emissions by the amount detailed in the table above. The FHWA CMAQ Calculator was used, specifically the Traffic Signal Synchronization tab. This project will implement improvements at locations across Aurora and thus the calculator tool was applied to multiple corridors across the signal system. The calculator is applicable to this project because improved detection and ability of ATSPM data will allow regular monitoring and optimization of signal timing at these intersections. To make the assumptions more conservative, the table above equates to approximately 25% of the full output from the FHWA CMAQ Calculator.

	Regional Transit	Expand and improve the subregion's transit network. (drawn from 2050 MVRTP priorities, Coordinated Transit Plan, RTD's Regional Bus Rapid Transit Feasibility Study) Examples of Project Elements: transit lanes, station improvements, etc. <u>Note</u> : For any project with transit elements, the sponsor must coordinate with RTD to ensure RTD agrees to the scope and cost. Be sure to include RTD's concurrence in your application submittal.
	<u>Items marke</u>	ed with an asterisk (*) below are available in the DRCOG Data Tool.
•	Does this pr <u>MVRTP</u>)?*	oject implement a portion of the regional bus rapid transit (BRT) network (as defined in the 2050
	🗆 Yes 🖾 N	Io If yes, which specific corridor will this project focus on: Click or tap here to enter text.
•	Does this pr	oject involve a regional transit planning corridor (as defined in the <u>2050 MVRTP</u>)?*
	🗆 Yes 🖂 N	Io If yes, which specific corridor will this project focus on: Click or tap here to enter text.
•	Does this pr	oject implement a mobility hub (as defined in the <u>2050 MVRTP</u>)? Io
•	Does this pr	oject improve connections between transit and other modes?
	🗆 Yes 🖾 N	lo If yes, please describe in your response.
•	Does this pr	oject improve transit travel time reliability?
	🛛 Yes 🗆 N	lo If yes, please describe in your response.
•	Does this pr	oject add and/or improve transit access to or within a DRCOG-defined urban center?* Io
Q in in <i>or</i>	uestion: Desc the <u>2050 MV</u> formation, inc o the <u>Regional</u>	ribe how this project improves connections to or expands the subregion's transit system, as outlined <u>RTP</u> . Also describe how this project improves transit travel time reliability. Please include quantitative cluding any items referenced above, in your response. <i>Note that rapid transit improvements must be <u>Rapid Transit System</u>.</i>
Tł	ne TMC will pr	ovide the ability to monitor TSP corridors, ultimately reducing delays along major transit corridors.

	Safety	Increase the safety for all users of the transporta (drawn from <u>2050 MVRTP priorities</u> , <u>Taking Action on Regional Visio</u> performance measures)	ation system. on Zero, CDOT Strategic	Transportation Safety Plan, & federal safety					
		Examples of Project Elements: bike/pedestrian crossing improveme	nts, vehicle crash count	ermeasures, traffic calming, etc.					
lte	Items marked with an asterisk (*) below are available in the DRCOG Data Tool.								
•	Does this p in a local V □ Yes ⊠	roject address a location on the <u>DRCOG High-Injury</u> sion Zero or equivalent safety plan?* No	y Network or Crit	ical Corridors or corridors defined					
•	Does this p $ extsf{D}$ Yes $ extsf{D}$	roject implement a safety countermeasure listed in No	n the <u>countermea</u>	asure glossary?					
•	Will this prosection will this prosection of the secondary □ Yes □ □ Yes □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □	oject result in a reduction of average roadway clea incidents? No	rance time and ir	ncident clearance time and/or					
•	Will this pr \Box Yes \boxtimes	oject result in a reduction of first responder struck No	-bys?						
	Provide the (using the 20 [Crash Severi NOTE: if cons	current number of crashes involving motor vehicles, bicyclists 16-2020 period – in the DRCOG Data Tool, use a 0.02 mile buffer dist ty 2016-2020 tab] tructing a new facility, report crashes along closest existing alternativ	s, and pedestrians* ance) e route	Sponsor must use industry accepted crash modification factors (CMF) or crash reduction factor (CBE) practices (e.g., CME					
	Fatal	crashes	48	Clearinghouse, NCHRP Report 617, or					
	Seriou	is Injury crashes	480	DiExSys methodology).					
	Other	: Non-Serious Injury and Property Damage Only crashes	15,034						
	Estimated r	eduction in crashes applicable to the project scope		Provide the methodology and sources					
	(per the five	-year period used above)		below:					
	Fatal	crashes reduced	Enter Data	Click or tan hara ta antar taut					
	Seriou	s Injury crashes reduced	Enter Data	Click of tap here to enter text.					
	Other	: Non-Serious Injury and Property Damage Only crashes	Enter Data						

Question: Describe how this project will implement safety improvements (roadway, active transportation facility, etc.), particularly improvements in line with the recommendations in <u>Taking Action on Regional Vision Zero</u>. Please include quantitative information, including any items referenced above, in your response. *Note that any improvements on roadways must be primarily on the DRCOG <u>Regional Roadway System</u>.*

The table above lists crashes that occur within 0.02 mile of the all Aurora signals along DRCOG roadways. Within the 0.02 of the North Satellite Complex, there are no crashes. However, the proposed project provides a centralized monitoring location for the entire signal network. Thus, the crash numbers across the entire network are reflected in the above table.

The TMC will deploy the safety countermeasure of traffic incident management, by minimizing the impact of traffic incidents on public safety and travel times. These could include reducing the likelihood of an incident or secondary incidents through prompt action by the TMC (e.g., police dispatch, public information dissemination, etc.) and minimizing delays by notifying the appropriate emergency response.

This project will lead to safety countermeasures for improved signal timing and coordination, by reducing time to detect and respond to signal operational malfunctions.

This project will reduce congestion and lead to reduced incident duration times of 30 to 40 percent.

Question: Describe how this project will reduce average incident duration, secondary incidents and first responder struck-bys. Please include quantitative information in your response. A "responder struck-by" incident is a collision between a motor vehicle in transit and a responder working a roadway incident. The responder may be a nonmotorist, an occupant of a stopped response vehicle or an unoccupied response vehicle.

This project will lead to quicker detection and response to incidents, leading to reduced incident duration times of 30 to 40 percent. This project is looking to include a Computer Aided Dispatch (CAD) terminal to the TMC in partnership with the Aurora Police Department (APD) in an effort to enhance coordination. The CAD terminal would enhance the ability for dispatch to communicate incident information to first responders.

		Maintain efficient movement of goods within and beyond the subregion.
	Freight	(drawn from 2050 MVRTP priorities; Regional Multimodal Freight Plan; Colorado Freight Plan, federal freight reliability performance
		Examples of Project Elements: bridge improvements, improved turning radii, increased roadway capacity, etc.
lte	ms marked	with an asterisk (*) below are available in the DRCOG Data Tool.
•	Is this proje	ect located in or impact access to a <u>Freight Focus Area</u> ?*
	\boxtimes Yes \square	No If yes, please provide the name: I-70 Distribution Center
•	If this proje	ect is located in a Freight Focus Area does it address the relevant Needs and Issues identified in the Plan
	(see text lo	cated within each Focus Area)?
	🗆 Yes 🖾	No If yes, please describe in your response below.
•	Is the proje	ect located on the <u>Tier 1 or Tier 2 Regional Highway Freight Vision Network</u> ?*
	🗆 Yes 🖂	No
•	Check any	items from the <u>Inventory of Current Needs</u> which this project will address:
	🗆 Truck C	Crash Location 🛛 Rail Crossing Safety (<u>eligible locations</u>)
	🛛 Truck 🛛	Delay 🗵 Truck Reliability 🗆 Highway Bottleneck
	□ Low-Cl	earance or Weight-Restricted Bridge
	Please pro	vide the location(s) being addressed: Click or tap here to enter text.
•	Does this p	roject include any innovative or non-traditional freight supportive elements (i.e., curb management
	strategies,	cargo bike supportive infrastructure, etc.)?
	🗆 Yes 🖂	No If yes, please describe in your response below.
_		
Qu	estion: Des	cribe how this project will improve the efficient movement of goods. In your response, identify those
ita	provements	Identified in the <u>Regional Multimodal Freight Plan</u> , include quantitative information, and include any
Ro	nis reierenc	ed above. Note that any improvements on roadways must be primarily on the DRCOG <u>Regional</u>
	uuwuy syste	<u></u> .
Thi	is project wi	II lead to quicker detection and response to incidents, leading to reduced incident duration times of 30
to	40 percent f	or all traffic, including freight. Additionally, this project will improve travel times of all vehicles

including freight vehicles. This is especially important as the project would impact the following tier 2 freight networks: Colfax Ave, 6th Ave, Alameda Ave, Mississippi Ave, Iliff Ave, Hampden Ave, Quincy Ave, Havana St, Peoria St, Chambers Road, Buckley Rd/Airport Blvd, and Smoky Hill Rd.

т	Active Expand and enhance active transportation travel options. Transportation (drawn from 2050 MVRTP priorities; Denver Regional Active Transportation Plan; & Metro Vision objectives 10 & 13) Examples of Project Elements: shared use paths, sidewalks, regional trails, grade separations, etc.							
Iter	Items marked with an asterisk (*) below are available in the DRCOG Data Tool.							
•	 Does this project close a gap or extend a facility on a <u>Regional Active Transportation Corridor</u> or locally-defined priority corridor?* Yes X No 							
•	Does this project in □ Yes ⊠ No	nprove pedestrian accessibility and connectivity in a	pedestrian focus area	<u>a</u> ?*				
•	Does this project in □ Yes ⊠ No	nprove active transportation choices in a <u>short trip c</u>	opportunity zone?*					
•	Does this project ir boulevard)? □ Yes ⊠ No If ye	nclude a high-comfort bikeway (like a sidepath, shar s, please describe in your response.	ed-use path, separate	d bike lane, bicycle				
Bic NO	ycle Use TE: if constructing a new fo	acility, report bike usage along closest existing alternative route						
<u>1</u>	o update the formulas	below, enter your information, highlight the formulas (or Ctrl	-A), and press F9. OR close	and reopen the file.				
1.	Current Average Sing	e Weekday Bicyclists:	Project is not anticipate	d to increase bike trips.				
	Bicycle Use Calculatio	ns	Year of Opening	2050 Weekday Estimate				
2.	Enter estimated addit after project is compl	ional average weekday one-way bicycle trips on the facility eted.	N/A	N/A				
3.	Enter number of the l different bicycling rou (Example: {#2 X 50%]	<pre>bicycle trips (in #2 above) that will be diverting from a ite. } or other percent, if justified on line 10 below)</pre>	N/A	N/A				
4.	= Initial number of ne	w bicycle trips from project (#2 – #3)	0	0				
5.	Enter number of the made by another non (Example: {#4 X 30%	new trips produced (from #4 above) that are replacing a trip -SOV mode (bus, carpool, vanpool, walking, etc.).	N/A	N/A				
6.	= Number of SOV trip	s reduced per day (#4 - #5)	0.00	0.00				
7.	Enter the value of {#6 (Values other than 2	5 x 2 miles }. (= the VMT reduced per day) miles must be justified by sponsor on line 10 below)	N/A	N/A				
8.	= Number of pounds	GHG emissions reduced (#7 x 0.95 lbs.)	0.00	0.00				
9. 10.	If values would be dis N/A If different values oth	tinctly greater for weekends, describe the magnitude of differe er than the suggested are used, please explain here:	nce:					
	N/A							
Pe NO	destrian Use TE: if constructing a new fo To update the formulas	ncility, report pedestrian usage along closest existing alternative route below, enter your information, highlight the formulas (or Ctrl	-A), and press F9. OR close	and reopen the file.				
1.	Current Average Singl devices such as scoot	e Weekday Pedestrians (including users of non-pedaled ers and wheelchairs):	Project is not anticipate	d to increase ped trips.				
	Pedestrian Use Calcul	ations	Year of Opening	2050 Weekday Estimate				
2.	Enter estimated addit facility after project is	ional average weekday pedestrian one-way trips on the s completed	N/A	N/A				
3.	Enter number of the r a different walking ro (Example: {#2 X 50%	new pedestrian trips (in #2 above) that will be diverting from ute } or other percent, if justified on line 10 below)	N/A	N/A				
4.	= Number of new trip	s from project (#2 – #3)	0	0				
5.	Enter number of the made by another non (Example: {#4 X 30 %	new trips produced (from #4 above) that are replacing a trip -SOV mode (bus, carpool, vanpool, bike, etc.). } or other percent, if justified on line 10 below)	N/A	N/A				
6.	= Number of SOV trip	s reduced per day (#4 - #5)	0.00	0.00				
7.	Enter the value of {#6 (Values other than .4	x .4 miles} . (= the VMT reduced per day) miles must be justified by sponsor on line 10 below)	N/A	N/A				

8.	= Number of pounds GHG emissions reduced (#7 x 0.95 lbs.)	0.00	0.00				
9.	If values would be distinctly greater for weekends, describe the magnitude of different	nce:					
	N/A						
10.	If different values other than the suggested are used, please explain here:						
	N/A						
Que	Question: Describe how this project helps expand the active transportation network, closes gaps, improves comfort,						
and,	and/or improves connections to key destinations, particularly improvements in line with the recommendations in the						
Den	ver Regional Active Transportation Plan. Please include quantitative in	formation, including a	any items referenced				
abo	<i>ie,</i> in your response.						
Not applicable to this project							
NOL							

What percent of outside funding sources (non- federal funds) does this project have? (Match percentage will automatically calculate based on values entered in the Funding Request table. If this has not updated, select the box to the right and click F9.)Enter score:36%+ outside funding sources 31 - 35.9% 26 - 30.9% 21 - 25.9% 17.21 - 20.9%*[*includes 100% eligible projects with no match]17.21 - 20.9%*	D. Financial Leveraging			WEIGHT	5%
(Match percentage will automatically calculate based on values entered in the Funding Request table. If this has not updated, select the box to the right and click F9.) [*includes 100% eligible projects with no match]	What percent of outside funding sources (non- federal funds) does this project have?	Enter score:	36%+ outside func 31 - 35.9%	ling source	es 5 4
	(Match percentage will automatically calculate based on values entered in the Funding Request table. If this has not updated, select the box to the right and click F9.) [*includes 100% eligible projects with no match]	31.0%	26 - 30.9% 21 - 25.9% 17.21 - 20.9%*		

E. Project Readiness

Provide responses to the following items to demonstrate the readiness of the project. DRCOG is prioritizing those projects that have a higher likelihood to move forward in a timely manner and are less likely to experience a delay.

WEIGHT 15%

Subsection 1. Avoiding Pitfalls and Roadblocks

a. Has a licensed engineer (CDOT, consultant, local agency, etc.) reviewed the impact the proposed project will have on utilities, railroads, ROW, historic and environmental resources, etc. and have those impacts and pitfalls been mitigated as much as possible to date before this submittal?

 \boxtimes Yes \square No \square N/A (for projects which do not require engineering services)

If yes, please type in the engineer's name below which certifies their review and that impacts have been evaluated and mitigated as much as possible before your application is submitted:

Carlie Campuzano, P.E.

Please describe the status to date on each, including 1) anticipated/known pitfalls/roadblocks, and 2) mitigation activities taken to date:

- Utilities: No anticipated conflicts
- Railroad: No anticipated conflicts
- Right-of-Way: No anticipated conflicts. Work will be performed within Aurora ROW at existing Aurora North Satellite Complex Building
- Environmental/Historic: No anticipated conflicts. The north satellite building is not anticipated to be historic. The north satellite building is not anticipated to contain asbestos or lead based paint, however mitigation will be started if incurred during construction.
- Other: N/A
- b. Have additional project risks been identified?

 \boxtimes Yes \square No \square N/A

If yes, please provide a brief description of the known risks and planned mitigation activities.

A Local Agency SEA form is required and attached to this application. A robust SEA process is not expected to be required for this application.

c. Is this application for a single project phase only (i.e., design, environmental, ROW acquisition, construction only, study, equipment purchase, etc.)?

 \boxtimes Yes \square No

If yes, are the other prerequisite phases complete? $\ \Box$ Yes $\ \boxtimes$ No $\ \Box$ N/A

d. Will this project seek a Finding in the Public Interest as part of equipment procurement?

 \boxtimes Yes \square No

If yes, please provide an explanation of the need for a Finding in the Public Interest. Do not reference spec	cific
products trade names.	

During TMC SEA and design, a need may be identified to use a brand name for synchronization or specific functionality purposes. If so, a FIPI may be justified and used.

e. Has all required ROW been identified? □ Yes □ No ⊠ N/A Has all required ROW already been acquired and cleared by CDOT? \Box Yes \Box No \boxtimes N/A Is existing equipment within ROW? \square Yes \square No \square N/A Will subsurface utility engineering be a factor in this project? \Box Yes \boxtimes No Has subsurface utility engineering been accounted for in the project scoping, phasing and estimate? \Box Yes \Box No \boxtimes N/A f. Based on the current status provided in Project Information, question 11, do you foresee being able to execute your IGA by October 1 of your first year of funding (or if requesting first year funding, beginning discussions on your IGA as soon as possible), so you can begin your project on time? \boxtimes Yes \square No Does your agency have the appropriate staff available to work on this project? \boxtimes Yes \Box No If yes, are they knowledgeable with the federal-aid process? \square Yes \square No \square N/A g. Have other stakeholders in your project been identified and involved in project development? \boxtimes Yes \square No \square N/A If yes, who are the stakeholders? Aurora Police Department, Aurora Fire Department, Aurora 911 Please provide any additional details on any of the items in Subsection 1, if applicable. N/A Subsection 2. Local Match Availability a. Is all the local match identified in your application currently available and not contingent on any additional decisions, and if a partnering agency is also committing match, do you have a commitment letter? 🛛 Yes 🗆 No Please describe: The City has the local match funds specifically for the TMC that are currently available in a City account. b. Is all funding for this project currently identified in the sponsor agency's Capital Improvement Program (CIP)? \boxtimes Yes \square No Please describe: The City has the local match funds specifically for the TMC that are currently available. Subsection 3. Systems Engineering Analysis Documentation Systems Engineering Analysis (SEA) is a federally required process for deployment of transportation technology projects using funds from the Highway Trust Fund. CDOT established and administers a formal SEA process for transportation technology projects in the state, including local agency projects.

Please complete at least the first seven sections of the required <u>SEA-Local Agency Template</u>. Submit the completed form with this application.

Submit completed applications to <u>jluor@drcog.org</u> no later than 5pm on July 7, 2023.

Prior to submitting, press Ctrl+A to select all, then press F9 to update all formulas. You can then print to PDF.



Project Cost Estimate

Project Title: Aurora Traffic Mangement Center

Project Location: Aurora North Satellite Complex, 15700 E 32nd Ave, Aurora CO 80011 Project Sponsor: City of Aurora

Item	Quantity	Unit Cost	Total Cost
North Satellite Complex Architectural Renovations	1	\$500,000	\$500,000
Structural Renovations	1	\$70,000	\$70,000
Furnishings	1	\$60,000	\$60,000
Operator Computer Workstations and Monitors	1	\$30,000	\$30,000
CAD Dispatch Console	1	\$120,000	\$120,000
Video Wall and Controller	1	\$200,000	\$200,000
Plumbing Modifications	1	\$30,000	\$30,000
HVAC	1	\$60,000	\$60,000
UPS	1	\$70,000	\$70,000
Generator and Accessories	1	\$60,000	\$60,000
Electrical Modifications	1	\$80,000	\$80,000
Fire Protection	1	\$50,000	\$50,000
Subtotal			\$1,330,000
Contingency (Rounded)			\$266,000
Project Total (Rounded)			\$1,596,000
Federal Runding Request		68.98%	\$1,101,000
Match Funds (City of Aurora)		31.02%	\$495,000

FY2024-2027 REGIONAL TRANSPORTATION OPERATIONS AND TECHNOLOGY SET-ASIDE PROCESS: REQUEST FOR PROJECT SUPPORT FORM

Complete the sections with green headers below, then provide this form to the agency you are requesting support from. That agency will complete the blue section and return the form.

APPLICANT INFORMATION				
1. Who is requesting project supp	port? City of Aurora			
2. Project Sponsor: City of	3. Other Project Partne	ers:		
Aurora				
4. Contact Person: Carlie Campuz	ano Title: Traffic N	<i>l</i> anager		
Email: ccampuza@auroragov.c	org Phone: 303-7	39-7309		
PROJECT DESCRIPTION				
5. Project Title: Aurora Traffic Ma	anagement Center	Total Project Cost: \$1,596,000		
Project Location: City Wide		Project Limits: (mileposts, intersecting		
Country Adams		roads, rivers, etc.) City Wide		
	wunicipality(les): City of	Aurora Project Length: City wide		
Brief Description of Project: This p	roject will fund the install	ation of a Transportation Management		
Center (TMC) as determined by the	e TMC Space Planning Stu	dy (currently in progress). The installation		
of the TMC will include: main cont	rol center, video wall, con	ference room or area to support		
meetings, data center, dedicated p	ower system, dedicated I	HVAC, fire protection system, and		
Computer Aided Dispatch (CAD) te	rminal. The proposed TM	C will be constructed within the existing		
Aurora North Satellite Complex.				
SUPPORT REQUEST				
6. Based on who is requesting su	pport (see #1), from whoi	m are you are requesting support? If you		
are requesting support from mult	iple entities, please fill out a	nd send a separate form to each.		
Local Agency, Specify:				
7. Type of Support Requested:				
	on (e.g. staff, resources, of	perations responsibilities, etc.)		
Specify: Staff parti	cipation in data sharing a	nd project plan reviews		
	ent: Local (non-DRC	OG) Funds: Amount:		
	State Funds: An	nount:		
		ount:		
8. Please type your name and da	te below which certifies th	he above information is accurate and		
complete:	Data: 6/28/22			
Name: Carlie Campuzano	Date: 6/28/23			
DECDONSE (to be completed by or		t is nonuceted)		
C The agency in #1 above has real	sency from whom suppor	their preject. Whe are you? Colorado		
5. The agency in #1 above has requested your support for their project. who are you? Colorado				
10 Contact parson at supportation	Manay Alazar Tacfaya			
Titlo: Pogion 1 traffic 2	agency. Alazar residye ail: alaar toofaya@ctata a	aus Phone: (202)564 6446		
Safety Program Engineer				
$\frac{11}{11} \text{ Will your agency participate in this project? } \text{ Ves} \square \text{ No}$				
L TT. WIII YOUL AGENCY PALICIPALE IN		סאר		

r				
12. Does your agency commit financial support to this project, if requested? 🗌 Yes 🛛 No 🗌 N/A				
If yes, provide amount: \$	Fiscal year(s) funds are provided in:			
If yes, where are funds coming	from:			
13. Please enter your name and date below which certifies the above information is accurate and				
complete, and your subregion/agency will honor any financial commitments made above:				
Name: Al a — a v T a a f a	Digital Restand by Alazar Tesfave			

Alazar Tesfaye Digitally Signed by Alazar Lestaye Date: 2023.06.30 12:46:30 -06'00'

FY2024-2027 REGIONAL TRANSPORTATION OPERATIONS AND TECHNOLOGY SET-ASIDE PROCESS: REQUEST FOR PROJECT SUPPORT FORM

Complete the sections with green headers below, then provide this form to the agency you are requesting support from. That agency will complete the blue section and return the form.

APPLICANT INFORMATION				
1. Who is requesting project sup	port? City of Aurora			
2. Project Sponsor: City of	3. Other Project Partne	ers:		
Aurora				
4. Contact Person: Carlie Campuz	ano Title: Traffic N	lanager		
Email: ccampuza@auroragov.c	org Phone: 303-73	39-7309		
PROJECT DESCRIPTION				
5. Project Title: Aurora Traffic Ma	anagement Center	Total Project Cost: \$1,596,000		
Project Location: City Wide		Project Limits: (mileposts, intersecting		
		roads, rivers, etc.) City Wide		
County: Adams	Municipality(ies): City of	Aurora Project Length: City Wide		
Center (TMC) as determined by the of the TMC will include: main cont meetings, data center, dedicated p Computer Aided Dispatch (CAD) te Aurora North Satellite Complex.	e TMC Space Planning Stur rol center, video wall, con power system, dedicated H rminal. The proposed TM	dy (currently in progress). The installation ference room or area to support IVAC, fire protection system, and C will be constructed within the existing		
SUPPORT REQUEST				
 Based on who is requesting su are requesting support from mult Local Agency, Specif CDOT RTD 	pport (see #1), from whon iple entities, please fill out ar y:	n are you are requesting support? <i>If you</i> ad send a separate form to each.		
7. Type of Support Requested:				
Material Participatio	n (e.g. staff, resources, op	perations responsibilities, etc.)		
Specify: Staff parti	cipation in data integratio	n related to traffic signals with TSP		
🗌 Financial Commitme	nt: 🗌 Local (non-DRC	DG) Funds: Amount:		
	State Funds: Am	nount:		
	RTD Funds: Amo	ount:		
8. Please type your name and da	te below which certifies th	e above information is accurate and		
Name: Carlie Campuzano	Data: 6/26/22			
Name. Came Campuzano	Date. 0/20/25			
RESPONSE (to be completed by as	ency from whom support	t is requested)		
9. The agency in #1 above has re-	quested your support for t	heir project. Who are you? RTD Acting		
Assistant General Manager of Planning Brian Welch				
10. Contact person at supporting a	agency: Doug Monroe			
Title: Manager, Corridor Em	ail: douglas.monroe@rtd-	Phone: 303-299-2213		
Planning denver.com				
11. Will your agency participate in	this project? 🛛 Yes 🗌] No		

12.	12. Does your agency commit financial support to this project, if requested? 🗌 Yes 🗌 No 🛛 N/A				
	If yes, provide amount: \$ Fiscal year(s) funds are provided in:				
	If yes, where are funds coming from:				
13.	13. Please enter your name and date below which certifies the above information is accurate and				
	complete, and your subregion/agency will honor any financial commitments made above:				
	Name: Brian T. Welch Digitally signed by Brian T. Welch Date: 6/30/23				



Requirement: The <u>systems engineering analysis (SEA)</u> process is required per <u>23 CFR 940</u>. The SEA is the project delivery process for the technology element of the project. If the project does not have technology, the project still needs documentation that the scope was evaluated and no additional SEA documentation is required beyond section two of this form. As a matter of policy, CDOT has committed to following the intent and requirements of the SEA process for all transportation projects, regardless whether the project is state or federally funded.

Purpose: The SEA is intended to help design a robust and sustainable technology system. The SEA prompts discussions during design with stakeholders and is intended to document those critical discussions. Since technology does require maintenance and has relatively short life cycles, the SEA also helps projects plan for how to keep the system maintained and operating after construction is completed.

Who is responsible: The local agency will be required to complete this form. This form shall be submitted to CDOT a minimum of two weeks prior to the FOR meeting. It must be reviewed and approved prior to receiving CDOT Concurrence to Advertise for construction. The ITS & Network Services Branch needs at least two weeks to review documents.

Section 1 - Project Overview

1.1 Local Public Agency Project Manager and Contact Information

Carlie Campuzano, PE, PTOE, Traffic Manager, City of Aurora, 303-739-7309, ccampuza@auroragov.org

1.2 Consultant Project Manager and Contact Information (X N/A)

1.3 CDOT Project Manager and Contact Information

Ben Kiene, PE, Region 1 Traffic Operations Engineer, 303-512-4025, benjamin,kiene@state.co.us

1.4 Project Location, Route Beginning and Ending MM, or Nearest Intersection

City of Aurora, Colorado, located at the City's North Satellite Complex

1.5 Project Description, Title, and Type of Work – This should include identification of the problem and the purpose of the project

City of Aurora Traffic Management Center - The City does not currently have a dedicated facility for a



traffic management center (TMC). This project purpose is to install a TMC for the City of Aurora. TMCs serve as the mission control for an agency's major street and highway network. This one location monitors traffic signals, intersections, and roads, and proactively deploys traffic management strategies to reduce congestion and coordinate with other authorities during special events, emergencies, or daily stop-and-go traffic. TMCs collect information on the entire road network by using sensors, cameras, and other technology. Using a complete network picture, TMCs can proactively identify weak areas, suggest solutions to agencies, and communicate solutions or information to travelers in real time.

1.6 CDOT Project Number and Sub Account Code

TBD]

1.7 Federal-Aid \boxtimes Yes \square No

1.8 Is the project within CDOT's Right of Way (ROW)? \Box Yes \boxtimes No

1.9 Funding and Source of Each (Including State and Federal)

68.98% Federal STBG funding through the Denver Regional Council of Government's (DRCOG) Regional Transportation Operations & Technology (RTO&T) Set-Aside program, and 31.02% Local Match from the City of Aurora.

1.10 Fiscal Year of Funding: FY 2024-2027

Section 2 - SEA Required?

Federal Requirement: 23 CFR 940.11 Project Implementation

2.1 Are there any technology elements included in the scope of the project?

The <u>National Regulation (23 CFR 940)</u> defines ITS as "electronics, communications, or information processing used singly or in combination to improve the efficiency or safety of a surface transportation system." An ITS project is "any project that in whole or in part funds the acquisition of technologies or systems of technologies that provide or significantly contribute to the provision of one or more ITS user services as defined in the National ITS Architecture."

Technology includes any type of device or system that is used to improve the roadways. This could include, but is not limited to, intelligent transportation systems devices. Examples are CCTV, DMS, VTMS,



VSL, wrong way detection, RWIS, connected vehicles, <u>non-traditional signals</u> (click on link to understand which signals projects require an SEA), on board equipment in vehicles, and anything that has to be communicated to ATMS or other traffic management systems. Additionally, creating or modifying systems and software that impacts the roadway is included in the SEA classification. If there is still confusion on what is classified as technology, please reach out to the ITS & Network Services Branch.

🛛 Yes 🛛 🗆 No

If the answer to 2.1 is "yes" then a SEA is required.

If the answer to 2.1 is "**no**" then a **SEA is not required** and the rest of this form does not need to be completed, but Sections 1 and 2 will need to be submitted for documentation purposes.

2.2 Which SEA process should be followed	2.2	Which SE/	process	should	be	followed	?
--	-----	-----------	---------	--------	----	----------	---

 \Box Yes \boxtimes No Will the system be owned, operated, or maintained by CDOT?

 \Box Yes \boxtimes No Does the project involve CDOT technology assets?

 \Box Yes \boxtimes No Will the project connect to the CDOT network?

 \Box Yes \boxtimes No Will the project be on CDOT right of way?

 \Box Yes \boxtimes No Does the project involve multiple municipalities?

If "**yes**" is selected for any of the above questions, then the <u>Robust SEA Process</u> needs to be followed and this form is no longer applicable.

If "**no**" is selected for all questions, then completing this entire form will fulfill the <u>23 CFR 940</u> requirements for local agency projects only.

Section 3 - ITS Architecture Conformance

Federal Requirement: 23 CFR 940.11(c)(1) - "Identification of portions of the regional ITS architecture being implemented (or if a regional ITS architecture does not exist, the applicable portions of the National ITS Architecture)"

Per <u>23 CFR 940</u>, every project has to comply with an ITS Architecture Plan. For background information, there is a <u>National ITS Architecture Plan</u> that is maintained by FHWA. The National Architecture Plan consists of Service Packages that identifies a problem that needs to be solved or a certain application of a technology. A service package states the basic requirements the project must achieve to create



National ITS

Architecture

COLORADO Department of Transportation Division of Maintenance & Operations

consistency. CDOT is then required to select the service packages from the National ITS Architecture Plan that will assist in fulfilling CDOT's technology vision and make them CDOT specific. From there the local Council of Governments (COG's) have to make their ITS Architectures as well. The local agencies should use the COG's architecture plan if one exists. If one does not, the CDOT Architecture Plan should be followed.

		the CDOT Architecture Plan sho	uld be followed.	
CE Arc	COG hitecture	Service packages are critical to i documentation. Service package rather than specific devices. For (DMS) service package. It will be DMS in order to determine the a within the TM06 Traffic Informati drivers with information. If a DMS could fall under TM24 Tunnel Ma application the DMS is being use multiple service packages. Pleas Branch with any questions.	dentify as part of compiling required SEA is focus on how the technology is being used example, there is no Dynamic Message Sign e critical to understand the intent of use for the pplicable service package(s). A DMS could fall on Dissemination if the intent is to provide S is being installed as part of a tunnel, then it anagement. The key is focusing on what ed in. It is possible for a project to fall within se reach out to the ITS & Network Services	
3.1 Which	architecture pla	ו will be used?		
□ Nation	al ITS Architect	ure 🗆 CD	OT ITS Architecture	
⊠ COG				
3.2 If using Architectur	⊨a COG/MPO/T e Plan.	PR Architecture Plan, what COG?	N/A for using the National or CDOT	
Denver Re	egional Council	of Government (DRCOG)		
3.3 List ser	vice packages t	hat will be implemented on this pro	oject:	
1. DM 01-02 Local Jurisdiction				
2. DM 02-02 Local Jurisdiction Performance Monitoring				



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- 3. MC 08-01 Maintenance and Construction Activity Coordination
- 4. PS01-02 Local Jurisdiction Emergency Call-Taking and Dispatch
- 5. PS 02-01 Local Jurisdiction Routing Support for Emergency Responders
- 6. PT 14-01 Local Jurisdiction Multi-modal Coordination
- 7. TM 07-01 Local Jurisdiction Regional Traffic Management
- 8. TM 08-02 Local Jurisdiction Traffic Incident Management System

To add additional service packages click in the line item 2 box and hit enter.

Section 4 - Procurement				
Federal Requirement: 23 CFR 940.11(c)(5) Procurement options				
4.1 State the procurement method for the project.				
⊠ Competitively Bid	⊠ Sole Source			
4.2 If 4.1 is competitively bid, then what kind is the project delivery method?				
⊠ Design, Bid, Build	□ Design Build			
Construction Manager/General Contractor	oxtimes Other (Please specify) Purchase Order			

Section 5 - Alternative Analysis

Federal Requirement: 23 CFR 940.11(c)(4) - Analysis of alternative system configurations and technology options to meet requirements

Instructions: Document alternatives considered. When thinking of alternatives it is important to consider maintenance resources and costs into the selected alternative. An alternative can also include not implementing the project. More rows can be added as needed.

Alternative Title	Alternative Description	Selected (Yes/No)	Reason
New TMC at Traffic Operations Facility – North	New TMC at Traffic Operations Facility – North Satellite Facility	Yes	This facility is where operations staff currently reside. There is existing space available. Central signal system currently resides at this location.



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Satellite Complex			
New TMC at Traffic Engineering Facility – Aurora Municipal Center	New TMC at Traffic Engineering Facility – Aurora Municipal Center	No	New space would need to be made available at this facility. Traffic Operations staff do not currently reside at this facility.
New Multi- agency TMC	New Multi-agency TMC	No	While such a facility is desirable in the future, there would take a considerable amount of time and budget to coordinate and build.
No Build	No Build	No	Existing facility is not well organized, and is used more as a "shop' testing facility for traffic signal equipment and system computers. There is no workstation for operators, and display capabilities for system status maps and CCTV monitors.

To add additional rows, right click on a row, select "insert", select "row below"

Section 6 - Roles & Responsibilities

Federal Requirement: 23 CFR 940.11(c)(2) - Identification of participating agencies roles and responsibilities

Instructions: Determine roles and responsibilities of the proposed technology system throughout the entire life cycle. More rows can be added as needed.

Agency	Role/Position	Contact Info	Phase*	Responsibility
City of Aurora - Public Works – Traffic Engineering	Traffic Manager	Carlie Campuzano ccampuza@aurorag ov.org	Design, Construction, Operations	Manager of entire traffic engineering for traffic signal system.
City of Aurora - Public Works – Traffic Operations	Traffic Operations Superintendent	Mike Jaques mjaques@auroragov .org	Design, Construction, Operations	Field operations of all city traffic signals and ITS systems.
City of Aurora – Police Department	Traffic Safety and Enforcement	Carrigan Bennet cbbennet@aurorago v.org	Design, Operations	Traffic Incident Management
City of Aurora – Fire Department	Emergency Response	Eric Franks efranks@auroragov. org	Operations	Traffic Incident Management



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City of Aurora – 911 Communication Center Center	Tina Buneta tbuneta@auroragov. org	Operations	Dispatch and Communications Coordination
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*Phase: Design, Construction, Operations

To add additional rows, right click on a row, select "insert", select "row below"

Section 7 - Requirements & Corresponding Standards

Federal Requirement: 23 CFR 940.11(c)(3) Requirements definitions and 23 CFR 940.11(c)(6) Identification of applicable ITS standards and testing procedures

Instructions: Determine the functional requirements of the system and how these requirements will be implemented. Implementation could be specifications or included in the general design of the system. More rows can be added as needed.

Functional Requirement	How is the requirement included in the project? Spec, plan set, etc
'TMC Basic Surveillance' remotely monitors and controls traffic sensor systems and surveillance (e.g., CCTV) equipment, and collects, processes and stores the collected traffic data. Current traffic information and other real-time transportation information is also collected from other centers. The collected information is provided to traffic operations personnel and made available to other centers.	Plan set
'TMC Data Collection' collects and stores information that is created in the course of traffic operations performed by the Traffic Management Center. This data can be used directly by operations personnel or it can be made available to other data users and archives in the region.	Plan set
'TMC Incident Detection' identifies and reports incidents to Traffic Operations Personnel. It remotely monitors and controls traffic sensor and surveillance systems that support incident detection and verification. It analyzes and reduces the collected sensor and surveillance data, external alerting and advisory and incident reporting systems, anticipated demand information from intermodal freight depots, border crossings, special event information, and identifies and reports incidents and hazardous conditions	Plan set
'TMC Incident Dispatch Coordination' formulates and manages an incident response that takes into account the incident potential, incident impacts, and resources required for incident management. It provides information to support dispatch and routing of emergency response and service vehicles as well as coordination with other cooperating agencies. It provides access	Plan set



to traffic management resources that provide surveillance of the incident, traffic control in the surrounding area, and support for the incident response. It monitors the incident response and collects performance measures such as incident response and clearance times.	
'TMC Multi-Modal Coordination' supports center-to-center coordination between the Traffic Management and Transit Management Centers. It monitors transit operations and provides traffic signal priority for transit vehicles on request from the Transit Management Center	Plan set
TMC Regional Traffic Management' supports coordination between Traffic Management Centers in order to share traffic information between centers as well as control of traffic management field equipment. This coordination supports wide area optimization and regional coordination that spans jurisdictional boundaries; for example, coordinated signal control in a metropolitan area or coordination between freeway operations and arterial signal control within a corridor.	Plan set
'TMC Roadway Equipment Monitoring' monitors the operational status of field equipment and detects failures. It presents field equipment status to Traffic Operations Personnel and reports failures to the Maintenance and Construction Management Center. It tracks the repair or replacement of the failed equipment. The entire range of ITS field equipment may be monitored including sensors (traffic, infrastructure, environmental, security, speed, etc.) and devices (highway advisory radio, dynamic message signs, automated roadway treatment systems, barrier and safeguard systems, cameras, traffic signals and override equipment, ramp meters, beacons, security surveillance equipment, etc.).	Plan set
'TMC Signal Control' provides the capability for traffic managers to monitor and manage the traffic flow at signalized intersections. This capability includes analyzing and reducing the collected data from traffic surveillance equipment and developing and implementing control plans for signalized intersections. Control plans may be developed and implemented that coordinate signals at many intersections under the domain of a single Traffic Management Center and are responsive to traffic conditions and adapt to support incidents, preemption and priority requests, pedestrian crossing calls, etc.	Plan set
TMC Standard Rail Crossing Management' monitors and controls rail crossing traffic control equipment. This version provides basic support for standard active warning systems at grade crossings. It remotely monitors and reports the status of the rail crossing equipment and sends control plan updates to the equipment.	Plan set



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'TMC Traffic Information Dissemination' disseminates traffic and road conditions, closure and detour information, incident information, driver advisories, and other traffic-related data to other centers, the media, and driver information systems. It monitors and controls driver information system field equipment including dynamic message signs and highway advisory radio, managing dissemination of driver information through these systems.	Plan set
'TMC Traffic Management Decision Support' recommends courses of action to the traffic operator based on current and forecast road and traffic conditions. Traffic incidents, special events, maintenance activities and other events or conditions that impact capacity or demand are monitored. Historical data and models are used to compare the impact of potential courses of action and make recommendations to the operator. Decisions are supported through presentation of filtered and fused network-wide road and traffic conditions that identify network imbalances and recommended courses of action. The recommended actions may include predefined incident response plans, signal timing plan changes, DMS/HAR messages, truck restrictions, lane control strategies, metering strategies, and adjustment of variable speed limits. Multimodal strategies may also be recommended that include suggested transit strategies and suggested route and mode choices for travelers. Once a course of action is selected, traffic operations personnel implement these actions within the Traffic Management Center and coordinate the response with other centers in the region.	Plan set
TMC Traffic Network Performance Evaluation' measures traffic network performance and predicts travel demand patterns to support traffic flow optimization, demand management, and incident management. It collects traffic data from sensors and surveillance equipment as well as input from other Traffic Management Centers, emissions management, transit operations, and event promoters and uses this information to measure traffic network performance. It collects route planning information from transportation information centers and integrates and uses this information to predict future traffic conditions. The planned control strategies can be passed back to the transportation information center so that the intended strategies can be reflected in future route planning.	Plan set

To add additional rows, right click on a row, select "insert", select "row below"

Section 8 - Devices & System



Federal Requirement: 23 CFR 940.11(c)(6) Identification of applicable ITS standards and testing procedures and 23 CFR 940.11(c)(7) Procedures and resources necessary for operations and management of the system				
8.1 Is a list or a map with all of the proposed devices attached? □ Yes □ No				
8.2 Determine how each device type installed or modified on the project will be specified, tested, and operation of the devices documented. If the project is a whole system, then there may need to be a system wide test as well to ensure all devices are working together properly. More rows can be added as needed.				
Device and system type included in project	Is there a supporting specification(s)? If yes, give specification title.	Is there a supporting test document? If yes, give testing procedure title.	Is this device documented in a Standard Operating Procedure (SOP) Document? If yes, give SOP title.	Is this device documented in a Maintenance Plan document? If Yes, give maintenance plan title.

To add additional rows, right click on a row, select "insert", select "row below"

Section 9 - FHW	VA Involvement	
9.1 Has FHWA classified this project as a Project of Division Involvement (PODI) and requires involvement in the review of SEA documents?		
□ Yes	□ No	

Section 10 - Schedule	
10.1 Design Start Date:	10.2 AD date:
10.3 Construction Start:	10.4 Construction completion:



10.5 Relationship to other Federal, State, and local projects and phases. Tip: Does this project depend on another project to operate successfully? Is this project one of a series or projects for a phased approach?

CMAQ Emissions Calculator Toolkit	Traffic Signal Synchronization					
	This calculator will estimate the emission reductions resulting from synchronizing the traffic signals along a previously unsynchronized corridor.				ronized corridor.	
Navigator	INPUT					
Intersection Improvements						
Traffic Signal Synchronization		Area Type	Urban			
Traine Signal Synchronization		Corridor Length	50	miles		
<u>Roundabouts</u>	Number of S	Signalized Intersections	150			
Two Way Loft Turn Lanos	Number V	Posted Speed Limit	45	miles per hour (1 - 75 N	ИРН)	
Two way Left Turn Lanes		Average Cycle Length	135	seconds		
	Annual Average Daily Traffic (Truck Percentage	2%	voh (dov		
	Annual Average Daily france (Peak-hour Ve	olume (both directions)	40,000	veh/hr		
	Existi	Existing Corridor Travel Time 100 minutes				
	Total peak h	nours per day (AM+PM)	4			
	OUTPUT					
		PEAK-HOUR	OFF-PEAK			
	Volume (both directions)	4,000	1200	veh/hr		
	Existing Average Speed Travel Time Savings	1 580	982	min		
	Proposed Average Speed	41	30	mph		
	EMISSION REDUCTIONS					
	Pollutant	Peak-hour	Off-Peak	Total		
		Kilograms/day	Kilograms/day	Kilograms/day		
	Carbon Monoxide (CO)	385.890	189.910	575.800		
	Particulate Matter <2.5 μm (PM _{2.5})	3.590	3.127	6.717		
	Nitrogen Oxide (NOx)	20.804	29.226	53.541		
	Volatile Organic Compounds (VOC)	12.806	13.237	26.044		
	Atmospheric Carbon Dioxide (CO2)	24,678.343	46,970.216	71,648.559		
	Carbon Dioxide Equivalent (CO2e)	24,884.647	47,191.758	72,076.405		
	I otal Energy Consumption (MMBTU)	324.142	618.592	942./34		