



U.S. Department  
of Transportation

**Federal Highway  
Administration**

**Colorado  
Division**

Federal Highway  
Administration  
(FHWA)

**Region 8**

Federal Transit  
Administration  
(FTA)

# Program Review



## **2016 Denver Regional Council of Governments (DRCOG) Planning Certification Review**

**Responses to Questionnaire  
January 26, 2015**

**Questionnaire Packet**

## **Section I**

### **Section Document Links:**

- [Memorandum of Agreement \(MPO Process\) between DRCOG-CDOT-RTD \(updated June 2008\)](#)
- [Transportation Planning in the Denver Region \(Prospectus\) \(September 2011\)](#)
- [Policy on Transportation Improvement Program \(TIP\) Preparation—Procedures for preparing the 2016-2021 TIP \(updated March 2015\)](#)
- [Public Involvement Plan \(April 2010\)](#)
- [Regulation 10 \(SIP\) Criteria for Analysis of Transportation Conformity \(December 2011\)](#)
- [MOA for Ozone Evaluations-RAQC, CDPHE, CDOT, UFRTPR, NFRMPO, & DRCOG \(March 2008\)](#)
- [MOA for Transportation Conformity Evaluations-CDPHE, RAQC, DRCOG, & NFRMPO \(2015\)](#)
- [Memorandum of Agreement- CDOT Concurrence on Public Involvement on STIP and TIP Amendments \(July 2008\)](#)
- [Memorandum of Agreement – CDOT Concurrence on TIP to STIP Amendments \(February 2009\)](#)
- [Memorandum of Agreement - CDOT-CDPHE \(AQCC\) - Air Quality and Transportation Integration \(May 2002\)](#)
- [Memorandum of Agreement – RAQC-DRCOG - Coordinating Air Quality and Transportation Planning \(Feb 2011\)](#)
- [FY16-17 Unified Planning Work Program \(July 2015\)](#)

### **Section I.1- Organizational Structure of Study Area**

1. Identify any operators of major modes of transportation that are not members of the Denver Regional Council of Governments (DRCOG).
  - a. The E-470 Public Highway Authority and the Northwest Parkway Public Highway Authority are independent quasi-governmental implementers and operators of toll roads within the metropolitan area. As special-purpose units of government, their boards of directors are comprised of local elected officials. The local agencies represented on these Boards are also members of DRCOG. As such, while these two public highway authorities are not formally members of the DRCOG Board, their views are represented through local elected officials who serve on both the DRCOG Board and the Board(s) of these public highway authorities. DRCOG has an ex-officio membership on the E-470 Board. Weld County is voting member of the Northwest Parkway Authority and a non-voting member of the E-470 Board. The Jefferson Parkway Public Highway Authority is similarly constituted to the two authorities noted. While it has authority to do so, it has not yet implemented any infrastructure.
2. *Describe the voting structure of the DRCOG Board and the DRCOG committees. Focus on the successfulness of the current structure. Has the*

***DRCOG considered restructuring their committees, Regional Transportation Committee, and the Metro Vision Issues Committee?***

- a. The DRCOG Board of Directors comprises the members of the MPO. The Board of Directors of DRCOG is the policy body for the MPO of the transportation management area. CDOT and the Regional Transportation District (RTD) transit agency are partners in the regional transportation planning process as affirmed in a Memorandum of Agreement (MOA) executed in July 2001. As stated in the MOA, the regional transportation planning process is organized around two committees in addition to the DRCOG Board.

The Regional Transportation Committee (RTC) prepares and forwards policy recommendations to the DRCOG Board. The Transportation Advisory Committee (TAC) reviews the work of the regional transportation planning process and provides advice to the RTC and DRCOG Board.

The DRCOG Board of Directors consists of representatives of local general-purpose governments in the Denver area who are members. Each member may designate one local elected official as its member representative (Denver may designate two). Four local governments from the new planning area joined DRCOG in late 2007. In addition to the local elected officials, the DRCOG Board includes a non-voting member representative of RTD, and three non-voting members designated by the Governor. The current appointments represent the Colorado Department of Transportation and the Denver Metro Homeless Initiative.

The RTC has 16 voting members: 5 from DRCOG, 4 each from CDOT and RTD, and 3 others appointed annually by the RTC chairman upon unanimous recommendation of the DRCOG, CDOT, and RTD executives. Products and policies of the regional transportation planning process are adopted when the DRCOG Board and RTC both take favorable action. This unique relationship between the RTC and DRCOG Board assures that CDOT and RTD, the major public transportation provider, have significant influence on the DRCOG Board relative to performing its role as the policy body for the MPO.

Local governments who are not members of DRCOG are not represented on the MPO policy body. However, with two exceptions, the only local governments in the transportation management area that are not currently members are a handful of very small municipalities that do not operate any regionally significant transportation facilities.

Weld County has not joined DRCOG, but does financially support the MPO planning process and currently has a staff person who has been appointed as a member of the MPO Transportation Advisory Committee.

At its December 2015 meeting, the DRCOG Board on the recommendation of the Structure and Governance Workgroup took action to discontinue the Metro Vision Issues Committee (MVIC) and replace it with a Board Work Session. All Board members and alternates are strongly encouraged to attend. The work sessions will cover topics requiring a deeper dive in order to fully examine topics before formal action by the Board.

3. Have there been any changes in the DRCOG board or voting structure since the previous Transportation Management Area (TMA) certification?
  - a. No changes have been made to the voting structure. A non-voting membership seat for a representative of the lead transit agency (RTD) was added in 2013.

### **Section I.2- Metropolitan Planning Area Boundaries**

1. Was a change made to the urbanized area boundary (UZA) and/or metropolitan planning area boundaries (MPA) since the 2012 DRCOG Certification Review? If yes, please describe.
  - a. Yes, in September 2014 the Board approved a new transportation UZA. Working with CDOT, the boundary was smoothed to incorporate the 2000 UZA and unadjusted 2010 UZA.
2. *Explain how the DRCOG and the Colorado Department of Transportation (CDOT) addressed the Federal Highway Administration's (FHWA) Adjusted Urban Area Boundary process.*
  - a. Meetings were held in summer of 2014, and discussion through the DRCOG committee process. Staff reviewed the 2000 adjusted and 2010 census UZAs and blended them into the revised boundary adopted in 2014.
3. *How has the functional classification of roads been affected since the 2012 Certification Review? Did the enhanced National Highway System (NHS) requirement change any elements of the planning process in the region?*
  - a. Function Classifications have not noticeably changed, other than very minor rural/urban classification adjustments based on the revised UZA. NHS modification in late 2012-early 2013 was a coordinated effort between CDOT, DRCOG and local governments.

4. Does the MPA cover the entire designated nonattainment/maintenance area boundary? If not, what interagency agreement exists for planning and air quality? Who has responsibility for planning in the area not addressed by the DRCOG?
  - a. The MPO boundary covers the designated transportation management area (TMA) that includes the CO and PM<sub>10</sub> attainment/maintenance areas. However, the TMA does not include the entire 8-hour ozone non-attainment area. Nor does DRCOG cover the entire 8-hour ozone non-attainment area. DRCOG signed an MOA in March 2008 with the North Front Range MPO, CDOT, Regional Air Quality Council, Upper Front Range Transportation Planning Region and CDPHE-APCD for Transportation Conformity Evaluations conducted under the 8-hour ozone standard. As part of this agreement, DRCOG conducts regional travel demand modeling to estimate emissions and make conformity determinations for the following [area](#):
    - i. The DRCOG TMA (including southwest Weld County)
    - ii. Part of Weld County in the Upper Front Range Transportation Planning Region within the Southern Subarea,

### **Section I.3- Agreements/Contracts**

1. *List the status of all current agreements between the CDOT, the DRCOG, and providers of public transportation, as well as any others, e.g., Air Quality Agencies, etc., including:*
  - *Dates executed;*
  - *Dates agreements are scheduled to expire;*
    - a. There are no expiration dates on any of the agreements referenced below.
  - *How often these agreements are updated.*
    - a. As needed, or when agency names, regulations, etc., change.

*If an agreement expiration date is approaching (or lapsed) please provide detail about the anticipated date/process for the update of the agreement.*

- a. DRCOG, CDOT, and RTD (the regional transit operator) entered into a [Memorandum of Agreement](#) (MOA) regarding the operation of the regional transportation planning process on July 10, 2001. This MOA was modified in June, 2008 to cover the revised MPO boundary discussed in previous questions. All three agencies are party to this single MOA. DRCOG staff is currently working with CDOT and RTD on updating the MOA to reflect the MAP-21/FAST Act requirements for a “Metropolitan Planning Agreement” (MPA).

The MOA calls for development of a [Prospectus](#) to document policies, procedures, coordination mechanisms, etc. for carrying out the regional transportation planning process. A Prospectus was approved by the Regional Transportation Committee (RTC) in December 2004 and amended most recently in September 2011. It is undergoing an update at the present time. An [MOA](#) between the executive directors of DRCOG and the RAQC regarding staff coordination of planning activities was signed in February 2011.

DRCOG has entered into an [agreement](#) with the Air Pollution Control Division (APCD) of the Colorado Department of Public Health and Environment, the RAQC, and the North Front Range Transportation and Air Quality Council (NFRTAQC). This agreement was updated in 2015 and focuses on air quality modeling and the procedures for Air Quality Control Commission (AQCC) review and comment regarding conformity findings. It augments the conformity SIP (regulation #10). Other aspects of air quality planning, including the review of draft documents on the part of CDOT, RTD, APCD, NFRTAQC, and RAQC are carried out through the regular coordination structure in place in the regional transportation planning process. [Regulation #10](#) was revised by the AQCC in 2011 and approved by EPA in 2013. Further minor modifications are being processed at this moment and proposed for AQCC action in 2016.

DRCOG and the North Front Range MPO entered into an [MOA](#) that addresses coordination of transportation along the common boundary and for affected non-member jurisdictions. This undated MOA was executed March, 2008.

A CDOT and MPO [Concurrence on Public Involvement](#) for TIP and STIP Amendments effective July 1, 2008 which DRCOG has signed. DRCOG and CDOT have an agreement called [Colorado Department of Transportation and the Denver Regional Council of Governments Concurrence on TIP and STIP Amendments](#) to guide how DRCOG TIP amendments will be reflected in the STIP. The concurrence was signed in 2009.

One agreement that affects DRCOG is a [MOA](#) between CDOT and APCD for Plan and TIP conformity determinations and State Implementation Plans (SIP). This May 10, 2002 MOA allows CDOT to review MPO conformity outputs and SIP transportation networks prior to AQCC approval.

2. How are roles and responsibilities defined for the development of the Regional Transportation Plan (RTP), the Transportation Improvement Plan (TIP), the Unified Planning Work Program (UPWP), Title VI, and other required documents?

- a. Basic roles and responsibilities are defined in the individual MOAs and further details are provided in the [Prospectus](#) (pages 15-17) and other referenced agreements described previously and below.
3. Does the DRCOG collect the data necessary to adequately support the Congestion Management Plan (CMP) or do the local agencies supply that information? If so, are there agreements in place and data quality assurance routines built in?
  - a. DRCOG compiles data (e.g., traffic counts, travel times, roadway geometry) that is obtained from CDOT, local governments, consultants, and other private entities (e.g., TTI and INRIX). Entities collecting traffic counts follow industry standards and procedures. CDOT monitors continuous counter locations and results to ensure “bad” data is removed. Because of the robust traffic counting efforts of CDOT and the local governments, DRCOG has not conducted its own traffic count program for several years. A routine annual process for obtaining data and reporting results has been in place since 2006.

#### **Section I.4- Unified Planning Work Program (UPWP)**

1. *How are Federal Funds and expenditures monitored in your organization? Does the DRCOG have an annual accomplishment report that conveys the previous year's UPWP success? What mechanism is used to track planning activity progress? Are there performance targets associated with the UPWP?*
  - a. A staff person is assigned to monitor and update all budgetary aspects of the [UPWP](#) in close cooperation with DRCOG, CDOT, and RTD administrative staff. A progress report is prepared annually. Mid-year reports are produced as well, to track progress and give indication of amendments that may need to be made to the UPWP. No specific targets are formally “set,” however the UPWP does include a table (Appendix B: pages 43-45) highlighting deliverables with expected completion dates. Of course, the expectation is to complete everything identified in the UPWP, barring extenuating circumstances or unanticipated activities placed on DRCOG and planning partner staff. Each new UPWP reports on accomplishments of the previous UPWP (Pages 9-12 in 2016-17 UPWP).
2. Who is involved in the development of the UPWP? What agencies or entities have input into the activities selected? Specifically, how does the CDOT and the DRCOG collaborate with providers of public transportation in the development, selection, and prioritization of the funding of UPWP activities?
  - a. CDOT and RTD are key participants in the preparation of the UPWP and are actively involved in both the Agency Coordination Team (ACT) and



TAC. Local government staffs provide input and suggestions primarily through their involvement with the TAC. RTD Board members and State Transportation Commissioners are voting members of the RTC. Staff from several departments of CDOT participate. CDOT's relevant state planning and research program tasks are identified in Chapter V (pages 37-39) of the UPWP ("other major planning activities"). Transit issues in particular are addressed in many work elements as both a component of general transportation tasks and with tasks specifically addressing transit topics such as RTD's Strategic Plan and planning for park-and-ride locations and station development. RTD is currently focusing most of its activities on implementation of FasTracks, including various planning steps.

3. How are the activities in the UPWP prioritized?
  - a. Input from the ACT, the Transportation Advisory Committee and local governments is combined with information from the various sections of DRCOG into a preliminary draft UPWP for discussion with each committee. The transportation planning process involves all participant agencies in the discussion of work products and priorities. The TAC and RTC serve as formal advisory committees regarding UPWP priorities. The annual Board retreat also identifies DRCOG Board priorities. The MOA allows for a meeting of the three policy boards. Generally, consensus is reached among the participant agencies during ACT discussions.
4. *How do the activities in the UPWP relate to the goals and priorities identified in the Regional Transportation Plan?*
  - a. The UPWP has a close relationship to all aspects of the RTP, Metro Vision Plan, and MAP-21 requirements. Amendments and updates to the RTP and TIP are key UPWP activities, along with updating, monitoring, and reporting on specific topical and modal elements of the RTP. However the greatest time component of the UPWP is on the process and operational elements of the entire MPO planning process.
5. Provide a description of the funding trends seen in the FY13, FY14, and FY15 UPWPs. Have certain years been dominated by a specific task? Use a visual display to show the allocation to different activities in the past UPWPs.
  - a. No clear funding trends are evident in past UPWPs. Day-to-day process requirements (committee coordination, responding the CDOT and USDOT requirements, administration of TIP, RTP, and data/model maintenance efforts.) make up the largest share of the UPWP. A larger component of the FY14-15 UPWP was devoted to work on the new Metro Vision Plan and 2040 RTP than the previous UPWP.



6. What resources other than PL and 5303 funding are used to support UPWP activities?
  - a. DRCOG has been successful in leveraging other federal grant opportunities such as the Sustainable Communities Initiative (SCI) and a recent SHRP2 grant to further develop UPWP activities. Local funding contributions and RTD planning activities are also key components of UPWP funding.
7. Describe how the activities in the UPWP are related to the 8 planning factors.
  - a. The FY 2016-2017 [UPWP](#) (pages 3-5) specifically highlights how planning activities over the next two years will address each federal planning factor.
8. How do the UPWP development process and the activities in the UPWP reflect Title VI and Environmental Justice? Does the UPWP include a listing of Title VI and EJ goals and activities for each year?
  - a. The UPWP contains several activities that address specific EJ issues or facilitate public involvement of EJ groups/representatives. For example, as part of the 2016-2017 UPWP, DRCOG is currently developing a report on “Status and Impacts of DRCOG’s Transportation Planning and Programming with Environmental Justice.” Specific quantifiable goals for Title VI and EJ are not listed in the UPWP. Internal public involvement objectives include specific initiatives and targets.
9. What is the role of freight, non-motorized transportation, bicycles, pedestrians, and other modal interests in UPWP development?
  - a. Planning activities in the UPWP are reflective of DRCOG’s stated RTP outcome of developing a balanced multimodal transportation system. All modal interests have a seat at the table at DRCOG. The [TAC membership](#) includes representatives of freight, aviation, businesses, bicycle/pedestrian, transportation demand management, and non-RTD transit interests. The TAC is involved in the preparation and formal review of the UPWP.

## **Section II**

### **Section Document Links:**

- [2035 Metro Vision Regional Transportation Plan \(Dec 2007\)](#)
- [2040 Fiscally Constrained Regional Transportation Plan \(February 2015\)](#)
- [Mapping Inventory of Potential Historic Parcels in the Denver Region \(Aug 2009\)](#)
- [DRCOG Regional TDM Short Range Plan \(2012 – 2016\)](#)
- [Metro Vision Growth and Development Supplement \(January 2012\)](#)

### **Section II.1- Environmental Mitigation**

1. Is consideration for potential environmental mitigation activities built into the regional planning process? Is this incorporated into TIP project selection?
  - a. Yes, but primarily in the project implementation phases. Since DRCOG funds environmental (NEPA) activities directly in the TIP, most detailed environmental mitigation analysis is conducted after projects are selected. For long range planning, maps are prepared showing broad environmental resource areas – e.g., waterways, riparian corridors, and parks/open space. And project sponsors are strongly encouraged to conduct some level of preliminary environmental review or consideration prior to submitting projects for consideration. Planning and Environmental Linkage (PEL) studies are conducted for some major corridors. Specific environmental resource impact criteria are not used for selecting projects for the RTP or TIP, unless, in few instances, NEPA work has been conducted. The RTP includes a section discussing types of environmental mitigation activities.
2. *What evaluation criteria are used to estimate the environmental impacts of projects? How does this get determined at a regional level?*
  - a. Specific NEPA-type environmental impact criteria are not used for selecting projects for the RTP or TIP, unless, in few instances, NEPA work has been conducted. For most projects, NEPA work is conducted in project implementation after projects are selected. Estimates of benefits or negative impacts on air quality are considered for TIP funded projects.
3. *What opportunities were provided for participation and consultation by State, Tribal, and local agencies responsible for land-use management,*

*natural resources, environmental protection, conservation, and historic preservation appropriate? How was outreach done for these opportunities?*

- a. DRCOG staff works closely with RTD and CDOT on group consultation efforts through the State Transportation and Environmental Resource Council, and specific CDOT coordinated efforts such as the “Planning Insight Network” (PIN) process which encourages sharing of consultation comments and feedback on the regional transportation plan. This process allows for an efficient review of comments received. Additionally, resource agencies actively participate in all NEPA processes associated with RTP or TIP projects.
4. Is there a programmatic option or policy to ensure environmental mitigation is fulfilled? If yes, provide documentation.
    - a. The TIP policy notes: *“For projects that require an EA or EIS, the EA or Draft EIS Disclosure Document must be signed, or be reasonably expected to be signed by the relevant federal agency within FY2016-2019.”* All project sponsors are made aware prior to submitting applications and throughout the contracting process that NEPA must be followed for federally funded projects.

## **Section II.2 - Consultation and Coordination**

1. *What opportunities are provided for agency consultation at key decision points in the transportation planning decision-making? How are agencies informed of consultation activities and opportunities for review at key decision points including but not limited to approval of RTPs and TIPs? How does the consultation process demonstrate explicit consideration and responsiveness to input received?*
  - a. DRCOG staff works closely with RTD and CDOT on group consultation efforts through the State Transportation and Environmental Resource Council, and specific CDOT coordinated efforts such as the “Planning Insight Network” (PIN) process which enable sharing of consultation comments and feedback on the regional transportation plan. This process allows for an efficient review of comments received. Resource agencies actively participate in all NEPA processes associated with RTP or TIP projects.

2. *How is consultation in the regional transportation process coordinated with the statewide consultation process to enhance public consideration of issues, plans, and programs?*
  - a. see previous response
3. Please send documentation of DRCOG's consultation process with State and local agencies responsible for land-use management, natural resources, environmental protection, conservation, and historic preservation.
  - a. Notice of availability of draft plans and TIPs is given to resource agencies via email and announcements at TERC meetings if timing is applicable. In Spring 2014, as described above, DRCOG participated with CDOT and resource agencies on the interactive "[PIN Tool](#)" to solicit comments on projects in the draft 2040 RTP. (See page 61 of 2040 RTP)
4. *What financial and personnel resources are devoted to implementing the consultation process?*
  - a. Three staff actively, though periodically, participate on CDOT coordinated consultation activities, and the TERC. Several staff members participate frequently on NEPA or PEL environmental review activities associated with specific projects or corridors
5. What types of visualization techniques are shared between agencies to better understand the relationship of transportation planning and environmental considerations? What are the results?
  - a. Numerous maps, tables, charts, and graphics are shared via printed documents, presentation materials, meeting discussions, and mapping websites hosted by CDOT, DRCOG, or resource agencies. DRCOG also maintains a specialized webpage known as the Denver Regional Visual Resources (DRVR): <http://www.drcog.org/drvr>. This is a public education tool that allows some of DRCOG's most interesting data to be presented in a fun interactive visual format. In essence, it tells a story about our region.
6. Can you describe the connection between the consultation and coordination within the metropolitan area and any associated performance measures and targets?
  - a. See responses to #1 and #3 above. Specific regional environmental mitigation performance measures and targets have not been established.

### **Section II.3- Land Use and Livability**

1. ***How does the RTP demonstrate alignment with the proposed transportation improvements and the State and local planned growth and economic development forecasts?***
  - a. The RTP reflects all fiscally constrained proposed regionally significant transportation improvements. The regional control basis for population/employment growth and forecasts used for the RTP and the associated travel model come from the State Demographer. Local plans and forecasts are used as basis for deriving small-area (TAZs) forecasts. Many meetings are held with local governments.
2. What coordination has been achieved with transit operators and local jurisdictions to encourage Travel Demand Management (TDM) programs or land development design/patterns to reduce congestion?
  - a. DRCOG works very closely with numerous local governments, RTD, and sub-regional TMOs who support and implement TDM activities with the [Way to Go](#) program of DRCOG. Coordination is a hallmark of the funding allocated through the DRCOG TIP's TDM set-aside program and [partnership](#) program. The underlying root of the Metro Vision Plan is to encourage more efficient development patterns where feasible.
3. To what extent are non-motorized modes of travel analyzed and addressed in the RTP and throughout the transportation planning process?
  - a. Non-motorized modes are a vital component to addressing the future demand of the regional transportation system. Non-motorized modes are extensively addressed within the RTP currently undergoing revision as an activity identified in the current 2016-2017 UPWP (Activity 3.4 Deliverable: Development of the DRCOG Active Transportation Plan). The importance of non-motorized modes was evident during project selection for the 2016-2021 TIP when almost 20+% of federal funds were allocated to stand-alone bicycle projects. This does not include the roadway projects with a bicycle and/or pedestrian component.

Annual Census travel mode-share data is summarized and presented every year, bicycle and pedestrian facility design guidance documents, and training courses have been presented, as well as regional summits, and numerous focused meetings with bicycle and pedestrian stakeholders.

4. How is the Safe Routes to School Program coordinated with non-motorized planning?
  - a. CDOT administered the former federal SRTS program. Concepts of the regional non-motorized planning efforts were incorporated into CDOT's process. Grant applicants are required to receive DRCOG acknowledgement that proposed projects are not inconsistent with the DRCOG RTP. A good amount of CDOT's efforts were focused on very small projects and educational grants. Connections to schools are considered in the evaluation of non-motorized projects for the DRCOG TIP.
  
5. *To what extent has public health been integrated into the planning process and decision-making?*
  - a. Public health has been identified as a priority Metro Vision discussions and related activities (e.g., SCI). Metro Vision 2035 includes a focus on built and natural environment issues (e.g., land use, transportation options, air quality, etc.) that are increasingly associated with their impact on health outcomes. In the development of draft Metro Vision 2040 plan, a renewed focus on health emerged during conversations with stakeholders and the public alike. In 2016, the Board will consider a revised Metro Vision 2040 plan that amplifies the connections between health, land use, transportation, environmental quality and a vibrant regional economy. The Metro Vision [2040 policy outcomes](#) approved by the DRCOG Board in January 2016 specifically address public health.  
  
Active transportation modes are a very important aspect of the planning and programming decision making and outcomes. The direct transportation related aspects of traffic safety and air quality on public health have been incorporated in RTP and TIP procedures and documents, and presented in companion documents such as DRCOG's safety reports.
  
6. To what degree have jurisdictions within the TMA adopted climate change mitigation or greenhouse gas (GHG) emission reduction goals or plans? Has the DRCOG considering adopting a regional GHG reduction goal?
  - a. While we are aware some communities have adopted GHG goals (e.g., Denver and Boulder) DRCOG does not have a complete inventory of all local government actions. DRCOG itself has adopted a long range goal to reduce per capita transportation GHG emissions by 60% by 2035.
  
7. Does the transportation planning process consider affordable housing plans or involve agencies/organizations responsible for identifying or addressing housing needs and options?

- a. The project evaluation criteria for the current TIP included points associated with a community's commitment to preserve or develop affordable housing in designated urban centers. The DRCOG Board includes a member representative of the Denver Metro Homeless Initiative.

8. Explain how the DRCOG integrated the HUD grant into their planning process.

- a. Numerous components and outputs of the [HUD SCI](#) grant activities led by DRCOG have been incorporated into the regional transportation planning process, including:
  - SCI elements are being considered by the DRCOG Board as they develop the new Metro Vision Plan
  - Activity results and outcomes have been reviewed by staff to learn of issues to reflect in the RTP, environmental justice analyses, public input summaries, and overall planning process.
  - Local governments who participated in the SCI learned many great planning techniques that have carried over from their localities to decision-making by their staff and elected officials who serve on DRCOG Board and Committees.

Staff will discuss specific elements at the site visit, if time permits.

9. *Tell us about your Urban Growth Boundary. How has it contributed to the overall planning process? What have been the successes of it? What percentage of land has it protected? How has it affected land and housing prices for the average citizen?*

- a. The region's [UGB/A program](#) was first initiated in 1997 with the intent to:
  - 1) Anticipate and direct growth;
  - 2) Efficiently phase development to maximize infrastructure investment, saving money for taxpayers;
  - 3) Stimulate infill and redevelopment activity; and
  - 4) Increase overall regional density within the UGB/A.The UGB/A program has also been a tool to help DRCOG, member communities, and regional service providers better understand local growth priorities. The program's initiation coincided with the adoption of Metro Vision 2020 and was later reinforced through the signing of the Mile High Compact in 2000.

Unlike other regional urban growth boundaries, the Denver Region's UGB/A relies on voluntary collaboration among communities. The local government participants have designed the program to operate with



flexibility that allows communities to retain local control over local land use as their plans and priorities change. Its success has been in facilitating an opportunity for discussions of local growth priorities in a broader regional context.

The region's UGB/A does not protect land from development. It seeks to promote an orderly phasing and pattern of urban-level growth that will require urban-level services and infrastructure in order to help plan for those investments. Other local and regional efforts aside from the UGB/A seek to protect parks and other open space from development. In 2013, DRCOG identified more than 770 square miles of parks and open space protected through these other efforts.

Staff will discuss further during site review.

## **Section III**

### **Section Document Links:**

- [DRCOG Regional Concept of Transportation Operations \(Aug 2012\)](#)
- [2035 Metro Vision Regional Transportation Plan \(Dec 2007\)](#)
- [2040 Fiscally Constrained Regional Transportation Plan \(February 2015\)](#)
- [CDOT ITS Systems Engineering Analysis Guidelines](#)
- [Report on Traffic Safety in the Denver Region \(Oct 2011\)](#)
- [Pedestrian and Bicycle Safety in the Denver Region \(May 2012\)](#)
- [Business Continuity Plan \(draft January 2016\)](#)
- [DRCOG Congestion Management Process Flowchart](#)
- [Arterial Progression Index \(API\)](#)

### **Section III.1- Transportation System Management and Operations (TSM&O) Considerations**

- 1. What involvement does the operations community have in the development of these goals, objectives and strategies, and more generally, in the planning process? Are these TSM&O goals and strategies consistent with those contained in the DRCOG's CMP?*
  - a. The operations community participates in DRCOG's Regional Transportation Operations (RTO) Working Group that assists DRCOG staff in the development of goals, objectives and strategies. The M&O action strategies are consistent with the CMP (e.g., see the [Congestion Tool Kit](#)).
2. What mechanism(s) are in place for measuring performance of TSM&O goals and objectives?
  - a. The transportation goals and measures defined in the 2040 RTP are universal, meaning all regional efforts, including M&O, contribute to the measures and performance. The regional travel model and CMP are used directly to measure performance in attaining the overall numeric target transportation goals. Additional performance measures are defined in the DRCOG [RCTO](#). DRCOG is embarking on an effort to document performance measures identified in the RCTO on an annual basis. Separately, CDOT TSM&O is reporting performance measures monthly.

**3. *How is the ITS Regional Architecture related to the planning process? Provide evidence that the ITS projects in the DRCOG's TIP and RTP consistent with the ITS Regional Architecture?***

- a. The ITS Regional Architecture defines a framework of systems and infrastructure to address the operations policy and action strategies defined in the 2040 RTP. ITS projects are funded through the RTO set-aside, which is identified in the TIP. Sponsors seeking funding must demonstrate how their projects fit within the ITS Regional Architecture as part of a systems engineering analysis.
4. Is there a process identified to ensure that Federal-aid Highway projects meet the Systems Engineering Analysis requirements of 23 CFR 940.11?
- a. DRCOG and CDOT prepared the [CDOT ITS Systems Engineering Guidelines](#) and supporting materials to document the process to meet the requirements of 23 CFR 940.11. CDOT is institutionalizing the systems engineering process into its project development process statewide. DRCOG will be confirming its role in CDOT's process with the assistance of FHWA.
5. Is a data collection and analysis process in place to assess the existing transportation system for management and operational efficiencies? Have current operations conditions been adequately assessed to form a baseline?
- a. DRCOG has established the [Arterial Progression Index \(API\)](#) that currently uses travel run data from traffic signal timing benefits analyses to define baseline conditions. Use of this index is in the experimental stage and is intended to evolve as new forms of data become available.

Current operations conditions are characterized by regional model outputs and the CMP. The DRCOG RCTO defines a number of performance measures prompting further investment.

**6. *Is the operation and management of the transit network prioritized?***

- a. Through DRCOG's planning and programming processes (i.e. RTP and TIP), transit issues, needs and priorities established by RTD and other transit stakeholders are documented.

RTD is also a member of the Regional Transportation Operations (RTO) Working Group comprised of the region's transportation operations stakeholders. This working group assists DRCOG staff in regional transportation operations planning and programming. This includes the

preparation of DRCOG's Regional Concept of Transportation Operations (RCTO) that includes RTD's operational goals and objectives. The RCTO guides the subsequent programming of the regional transportation operations set-asides.

Through the RTO Working Group, DRCOG provides a forum for transit and other transportation operators to coordinate regional transit operations improvements. A key topic has been to improve information services to customers, and on-time reliability. The best example over the last decade is partnership and coordination for transit signal priority (TSP) planning, design and implementation. There have been multiple pilot implementations of TSP. DRCOG and RTD continue to work closely to develop and implement transit operations improvements policies and processes.

7. What medium of transit TSM&O strategies are implemented in your area to improve the performance of existing transportation services?
  - a. There are several significant transit TSM&O strategies employed in the region. The regional traffic signal timing coordination assistance provided by DRCOG continues to support transit operations by providing more reliable operations. In addition, there have been several implementations of transit signal priority and queue jumps across the region, which is expected to grow as RTD and regional partners begin to implement BRT on selected corridors. Managed lanes and shoulder-running strategies are also being employed. RTD continues to improve its offering of transit traveler information services, which has been made possible through RTD's recent upgrade of its CAD/AVL system. RTD has also deployed a fare card system and it continues to roll out further functionality for that system.

**8. *How are operational strategies in the RTP and TIP identified to allow stakeholders to see how the level of investment corresponds to improved operations?***

- a. The TIP identifies funding for specific operational projects and set-aside pools. Other major stand-alone roadway and transit projects may identify operational components within the project descriptions. DRCOG staff has for many years prepared "[Signal Timing Briefs](#)" that present the benefits of corridor level multi-jurisdiction traffic signal system and re-timing projects

The RTP identifies many types of operational strategies, but does not identify funding for specific stand-alone operational projects. A rough

estimate of grand total expenditures for the 25 year period of the plan for operational activities is presented.

**9. Does the RTP include a documented methodology for assessing the costs associated with maintaining and operating the existing Federal-aid transportation system?**

a. A description is provided on pages 20 and 31-41 of the 2040 RTP. Greater detail on the calculation process will be provided in the new 2040 MVRTP.

**10. Has the DRCOG region been utilizing a Regional Concept for Transportation Operations (RCTO)? How is this working out?**

a. The DRCOG RCTO defines the operations community's near-term priorities, guiding the definition of projects and the selection of projects for federal funding. The RCTO has had a positive influence on operations investment in the region. Several projects that advance RCTO initiatives have been allocated federal funds and are currently in implementation, including: multiple jurisdictions implementing arterial travel time monitoring; CDOT revising CTMS to collect travel time data from those project; CDOT converting their database to a data warehouse and reporting function for the benefit of the region; and CDOT preparing a regional incident management process.

**11. What type of data is being used for these TSM&O strategies? Is INRIX being utilized?**

a. The DRCOG RCTO defines performance measures that require the following types of data for the primary goal: roadway segment travel time; transit trip travel time; intersection stop and duration; and traffic incident data. INRIX travel time data is being used as CDOT has purchased the data for the benefit of the state. Unfortunately, questions remain about the accuracy of arterial-specific data. Observations have led many in the operations community to conclude that INRIX travel time data for arterials is currently not meeting their needs.

**12. How does the DRCOG see its involvement in Traffic Incident Management in the regional area currently and going forward?**

a. Establishment of a regional incident management process is one of the highest priority initiatives in the DRCOG RCTO. DRCOG anticipates that the on-going effort will define more specific roles for DRCOG. For example, DRCOG could assist with administration and hosting of regional incident management team meetings (possibly including After Action Reviews and

training). Currently, DRCOG is involved in all regional traffic incident management planning activities focusing on consistency in planning and ensuring relevant partners are asked to participate.

**13. How frequently does the DRCOG region evaluate performance measurements utilized for TSM&O for the RTP and TIP?**

- a. No specific frequency of performance measurement evaluation has been established, but DRCOG is embarking on an effort to document performance measures identified in the RCTO on an annual basis. General regionwide measures (delay, severely congested lane miles, VMT, etc.) are presented in each amended RTP (usually every 6 months), and in the Annual Reports on Traffic Congestion. Measurements (results) are also calculated for specific TIP projects.

**14. Is the DRCOG aware of the CDOT's effort to implement a uniform lane marking guidance as standard practice? Was the DRCOG a participant?**

- a. CDOT is improving striping and lane marking - including reviewing long-standing guidelines on pavement marking best-practices - but not newly implementing any new requirements or standard practices. The CDOT pavement marking guideline is being revised collectively by all region Traffic Engineers and HQ staff so that it is a best practices guideline for the state, so it could be called a standard practice - but recent discussions are not elevating it from what it was. The guideline does not go so far as to dictate what material will be used where. The guideline advises best material in various conditions based upon best life-cycle cost, but does not dictate what the Region should select but instead allows them to consider those factors and other local specific factors to ultimately decide what lane markings are used.

DRCOG was not a specific participant in this ongoing effort. Albeit, our Region striping engineers, especially in R1, work closely with municipalities to experiment with, learn from, coordinate, etc. on pavement markings.

Until recently, CDOT has focused on internal efforts we needed to focus on first, and strategize what those efforts would be for most effective improvement. Efforts are now reaching further into the industry to improve materials specifications and application practices and accountability.

As the efforts may have impact on local agencies, CDOT will involve them collectively since the effects would touch all local agencies, not just the MPOs (would have to include the TPRs also).

15. What, if any, assistance does the MPO need to improve their M&O goals, strategies, and tracking?
  - a. DRCOG requires the coordinated efforts and input from RTD and CDOT to implement our regional and respective goals and strategies. Many goals, objectives, initiatives, and measures are already clearly outlined in the DRCOG Regional Concept of Transportation Operations. Staff will monitor and respond to all final MAP-21/FAST Act planning rules when they are approved.

### **Section III.2- Transportation Safety Planning**

1. How is the safety planning factor considered in your planning process? Does it cover all modes of transportation (auto, transit, pedestrian, bicyclists, and freight)?
  - a. DRCOG considers safety/crash data for all modes in RTP and TIP project selection. One of the key policy goals of the Metro Vision 2035 Plan and 2040 RTP is to “develop and maintain a safe transportation system for all of its users.” While safety related improvements, because of their relatively small scale, are not specifically listed or mapped in the RTP, safety is given consideration through the TIP project selection criteria and RTP improvement evaluation criteria. It is also strongly considered in the project development and design stages for all construction projects. DRCOG staff works with CDOT traffic safety engineers to monitor high crash locations that are candidates for crash reduction measures. The Regional ITS Strategic Plan identifies technologies that will result in safety and security benefits for travelers. DRCOG develops the [Report on Traffic Safety in the Denver Region](#) and a [Pedestrian and Bicycling Safety Report](#). Both reports are currently being updated.
2. *Describe the collaborative process for developing safety goals, objectives, performance measures, and strategies for the DRCOG. Who are the safety partners that are involved? Is the collaboration institutionalized or ad hoc?*
  - a. The DRCOG planning processes and committees described earlier have been used to define the safety goals and measures reported in the RTP and companion documents. Goals will be modified and added, following the publication of final federal planning rules.



3. *How does the DRCOG safety process relate to the State Highway Safety Plan (SHSP) process? Describe how the safety goals and objectives for the DRCOG are consistent with the SHSP.*
  - a. DRCOG was an active participant in the development of the SHSP. As such, the safety goal and strategies identified in the 2035 and 2040 RTPs are consistent with SHSP. DRCOG further refined its safety goal to reflect urban results (i.e., goal for rate of traffic fatalities was more stringent than CDOT's). The upcoming new 2040 MVRTP will provide a closer connection with CDOT's new SHSP and goals derived following the release of planning rules.
  
4. *What safety data does the DRCOG collect or obtain from other sources?*
  - o *Fatalities, serious injuries, crash rates, crash hot spots, collision inventories, pedestrian injuries, behavior statistics, driver's age, location, GIS, and roadway inventory data?*
    - a. All of the above is obtained on an annual basis from CDOT. Data is originally submitted by law enforcement agencies to the State Department of Revenues, which transmits the raw crash data files to CDOT.
  
  - o *Is there a cross coordination/collaboration with this data with State Patrol, media, CDOT, or others?*
    - a. DRCOG participates on the State Traffic Records Advisory Committee (STRAC). The STRAC includes CDOT, State Patrol, local law enforcement agencies, Department of Health, NHTSA, and several other agencies.
  
5. How does safety get addressed in public involvement activities of the DRCOG?
  - a. Recent public comments suggest that safety continues to be a major concern of the multimodal traveling public. DRCOG addresses these concerns by placing an emphasis on safety in the project evaluation criteria for the RTP and TIP.

Citizens and other participants are provided the opportunity to raise safety issues at any time, but most commonly during the preparation of planning/safety documents or selection of TIP projects.
  
6. How are safety impacts of potential transportation projects evaluated?
  - a. TIP project applications must note current safety issues and data and demonstrate if, or how, the proposed project will reduce the likelihood of crashes occurring. Points are awarded to a project based on the degree the

project can alleviate the noted safety problems (see Appendix D pages 54-57 of the [2016-2021 TIP Policy document](#)).

7. What safety data collection and analysis tasks are included in the UPWP?
  - a. Annual data compilation, mapping efforts, and participation on statewide committees are identified. As noted above, an update to the two regional safety reports is included in the 2016-2017 UPWP.
8. How is safety considered in determining which projects will be included in the RTP/TIP?
  - a. See question 1. and 6. above.
9. What implementation strategies in the safety component of the RTP have been deployed?
  - a. Legislation/Enforcement - recent state legislation related to safety include graduated licensing laws and vehicle traction laws applicable to the mountainous area of the DRCOG region,  
  
Engineering aspects – CDOT and local governments have implemented numerous safety projects at intersections and along highways across the region. Projects range from constructing grade separations to installing median cable barriers. DRCOG TIP project evaluation scoring incorporated safety measures for selecting pedestrian, bicycle, and roadway projects that improve safety for all travel mode users.  
  
Education - CDOT and RTD have conducted many educational outreach efforts through small- and large-scale media campaigns (e.g. Click-it-or-Ticket, the Heat is On (DUI), RTD's Dumb Ways to Die)
10. In the programming process, is safety a project prioritization factor?
  - a. Yes, it is a scoring criterion. (see Appendix D pages 54-57 of the [2016-2021 TIP Policy document](#)).
11. What is the mechanism for including Highway Safety Improvement Program (HSIP) funded projects, which are within the MPA, in the TIP?
  - a. CDOT conducts the call for projects. Following selection of projects, they are submitted, reviewed, and added to the TIP through the DRCOG committee process.

12. What are the plans for addressing safety in the next TIP and RTP update?
  - a. Primary factor is the consideration of final planning rules. No specific plans at this time for the next TIP. The new 2040 MVRTP will provide a closer connection with CDOT's new SHSP and goals derived following the release of planning rules.

### **Section III.3- Security in the Planning Process**

1. How have you defined security planning for your region in the RTP and the TIP?
  - a. Security planning is discussed in the 2040 RTP, including DRCOG's participation in regional security planning and coordination efforts. Security planning policy and action strategies are defined in the 2035 MVRTP. They will be updated for the 2040 MVRTP.
2. *How does the DRCOG or State DOT collaborate with regional, State or national security professionals during the transportation planning process? Which organizations are included and how does this collaboration occur?*
  - a. DRCOG staff actively participates in the Colorado North Central All-Hazards Region and Denver Urban Area Security Initiative Board. DRCOG also coordinates with other local and state agencies and emergency managers (e.g., the Colorado Division of Homeland Security and Emergency Management). Representatives or participants from these organizations either serve on, or have provided briefing to the DRCOG TAC.
3. How has DRCOG prepared and worked against cyber security concerns both internally and externally?
  - a. DRCOG is currently preparing a document for the operations community regarding information security providing awareness of potential threats and general best practices (See page 27 of the [2016-2017 UPWP](#)). Staff will discuss further at the site visit.
4. How are security roles and responsibilities defined in the RTP, the TIP, the UPWP, or the Congestion Management Process? Is security considered in corridor or other project studies?
  - a. Roles are not specifically defined but necessity of on-going regional coordination is discussed in RTP. Staff will discuss during site visit.
5. *What types of natural emergencies that affect the transportation network does this region experience? Provide examples of how the DRCOG was involved in either the disaster preparedness or the recovery stage.*

- a. Snow (ubiquitous); Flooding (river or creek floodplains, urban roadways after downpours (ubiquitous); wildfires, rockfalls, and landslides primarily in the foothills; tornados, lightning and power outages (random-ubiquitous). DRCOG expedited the TIP'ing of flood relief projects using federal funds, following the 2013 floods in Jefferson, Boulder, Adams, and Weld Counties. DRCOG also was an invited participant in briefings and other coordination task force efforts during the 2013 flood recovery.
6. What plans have been created for evacuation of transportation-disadvantaged populations such as the elderly, low-income, and disabled? How have local governments dealt with this and is there a regional plan outside of the DRCOG?
    - a. All of the counties in Colorado have prepared a Multi-Hazard Mitigation Plan, coordinated through the Colorado Division of Homeland Security and Emergency Management (<http://dhsem.state.co.us/division/resource-library>). As an example, the Jefferson County plan notes: "Since 2007, Emergency Management has worked with caregivers of those with special needs to create and exercise emergency plans. These trainings have been held for group homes, nursing homes, and assisted living facilities within the county".

The Department of Local Affairs completed the Colorado Disaster Housing Plan in 2011.

[http://dhsem.state.co.us/sites/default/files/Colorado%20Disaster%20Housing%20Plan\\_2011.pdf](http://dhsem.state.co.us/sites/default/files/Colorado%20Disaster%20Housing%20Plan_2011.pdf)

*7. Does the DRCOG have a Continuity of Operations Plan (COOP)? If so, what are the principal components of the plan?*

- a. DRCOG's **draft** [Business Continuity Plan \(BCP\)](#) is currently undergoing internal review. The principal components of the BCP include:
  - Purpose, Scope, Situations, and Assumptions
  - Concept of Operations
  - Direction, Control, and Coordination
  - Disaster Intelligence
  - Communications
  - Budgeting and Acquisition of Resources
  - Plan Development and Maintenance

## **Section IV**

### **Section Document Links:**

- [Public Involvement Plan \(April 2010\)](#)
- [FYs2016-17 Unified Planning Work Program \(UPWP\) \(July 2015\)](#)
- [2035 Metro Vision Regional Transportation Plan \(updated February 2011\)](#)
- [2040 Fiscally Constrained Regional Transportation Plan \(February 2015\)](#)
- [Draft 2040 Transit Coordinated Plan \(Jan 2016\)](#)
- [Mapping Inventory of Potential Historic Parcels in the Denver Region](#)
- [DRCOG Transportation Short Course](#)
- [DRCOG Sustainable Communities Initiative web pages](#)
- [Public Feedback on Transportation Issues \(2013-2014\)](#)
- [Biennial Public Participation Activity Summary \(2012-2013\)](#)
- [Draft Biennial Public Participation Activity Tracking Sheet \(2014-2015\)](#)

Note: Staff has responded as clearly as possible to the questions in Section IV, however there is overlap among the questions in the individual Sub-Sections IV.1 – IV.5, thus further discussion during the site visit will clarify questions and responses.

### **Section IV.1- Public Outreach**

- 1. How does the MPO evaluate the public participation process? What performance metrics are used to determine whether changes are needed? How often does this evaluation process occur? Do the results discovered during the evaluation get shared with stakeholders?*
  - a. DRCOG understands public involvement is essential at all levels of transportation planning. As such, DRCOG has developed a proactive public involvement plan that embraces participation from stakeholders and the public, at large. Staff reviews ongoing and previous MPO public involvement efforts to track participation and effectiveness. Staff also attends and monitors public involvement activities conducted through corridor and project level studies (e.g., PELs, EAS, and EISs). Staff maintains a spreadsheet to monitor public participation activities, number of participants, etc. and reviews the results to gauge level of effectiveness. A biennial 2-year summary document of public involvement efforts is

produced. The 2014-2015 report is currently under preparation. Specific internal metrics are being developed for inclusion in a Balanced Scorecard performance monitoring system for DRCOG. Results will be reported in the update to the Public Involvement Plan.

2. How do different stakeholders actually participate? Not in the sense of how the DRCOG has to present information or setup meetings, but how different groups prefer to provide comments or meaningful participation.
  - a. Stakeholders participate in many different ways, including: in person at DRCOG or local neighborhood meetings, via surveys, via websites, etc. DRCOG, the Area Agency on Aging (AAA), DRMAC, CDOT, RTD, and local governments all participate in or conduct these types of efforts. DRCOG has also sponsored large scale planning events, such as the USDOT/HUD Sustainability Community Initiative activities. Unique interactive methods such as the Listening Tours and "[MindMixer](#)" have also been used.
3. *How does the DRCOG engage in public education efforts designed to make the transportation planning process and decisions more accessible and understandable to the general public? Does that include translating documents into laypersons' terms?*
  - a. DRCOG makes a concerted effort to produce more public friendly documents and educational pieces and presentations. Examples include: (e.g.,
    - i. Transportation Planning Short Course,
    - ii. Metro Vision 2035 and Resources [webpage](#),
    - iii. Interactive visual formats like [DRVR](#) and [regional equity atlas](#),
    - iv. and through less-technical topical congestion and safety reports, such "[Why is the Signal Red](#)"
4. How does the public involvement process demonstrate explicit considerations and responsiveness to public input received during the planning and program development process and how does it alter the decision making of the MPO?
  - a. Input received from stakeholder forums, "listening tours," and cross-sectional ad hoc planning and citizens' advisory committee opportunities for the development of the 2040 Metro Vision Plan was a major influence on draft plan documents presented to the DRCOG Board/committees. Summaries of all public comments received during public hearings (e.g. TIP or for RTP amendments) and associated responses are provided to the DRCOG Board and applicable committees to review prior to taking action on planning and programming documents.

5. How does the public involvement process address the principles of the Title VI of the Civil Rights Act of 1964, (Title VI assurance executed by each state and the traditional underserved) including low income and minority households?
  - a. DRCOG makes a concerted effort to reach out to low income and minority households, representatives, and their advocacy organizations. Significant public input from these groups was received over the past two years in preparation of the 2040 RTP and 2040 Metro Vision through Metro Vision listening tours, SCI corridor initiatives, DRMAC, and AAA public involvement opportunities and survey efforts. The DRCOG LEP plan identifies location of concentrations of these and other populations and defines procedures for assisting LEP persons within the planning process. Minority focused media outlets and organizations are on press and informational/notification contact lists.
  
6. How are the disposition of comments and changes in the final RTP or TIP documented, analyzed, and reported when significant oral and written comments are submitted? (Is additional time provided for public review if the “final” document is significantly different from the draft originally made available for public review)?
  - a. Summaries of public comments received and associated responses are provided to the DRCOG Board and applicable committees for their review prior to taking action on planning and programming documents. On occasion direct responses to public comments occur during public forums and in response to comments submitted via emails, webpages, phone calls, and letters.
  
7. *How does the public involvement process contribute to the identification of the needs of traditionally underserved populations? Does the public involvement plan include a specific and separate strategy for engaging traditionally underserved populations (low-income, minority, elderly, disabled, students, etc)?*
  - *When evaluating the effectiveness of public involvement, how does the DRCOG consider the engagement of traditionally underserved populations?*
  - *How is this process being carried out? What outreach efforts have proven most effective?*
  - a. DRCOG’s Public Involvement Plan (PIP) focuses on providing opportunity for full and fair participation of ALL interested parties and populations. Specific strategies regarding outreach to low-income and minority



populations are called out in the PIP. The PIP is identified in the 2016/17 UPWP to be updated. Specific consideration will be given to blending it with DRCOG's Title VI and LEP plans.

Focused surveys (e.g., AAA and SCI activities) and outreach presentations to groups are the most effective. Piggy-backing with specific project or corridor outreach efforts (e.g., Metro Vision listening tours, SCI corridor public involvement opportunities) are also important, since planning or project studies in people's "backyards" garner much more interest from local populations, than broad regionwide long range plans.

As another example, through the SCI program was a special Affordable Fares Task Force coordinated by DRCOG's partner, Mile High Connects. Several meetings were held to help define methods for communities to enable more affordable transit fares for lower income customers.

8. When was the last public involvement plan and process updated? Was a 45-day comment period observed before the public involvement process was adopted or amended?
  - a. The last plan was adopted in 2010 (with 45-day comment period) and is scheduled for an update in the 2016/17 UPWP.

#### **Section IV.2- Self Certification**

Links:

- [Metropolitan Transportation Planning Process Self-Certification](#)

1. *What process/procedures are used to self-certify the planning process?*
  - *How are the transit authority, CDOT, and others involved?*
  - *Is the Self-Certification process documented for each requirement and how is that information provided?*
  - a. Per the planning regulations, a self-certification statement is prepared in parallel with every new Transportation Improvement Program that describes the actions taken by DRCOG and the MPO, CDOT and RTD to be consistent with all applicable federal requirements. No specific criteria have been established for self-certification. The TAC (including RTD, CDOT, federal agencies, local governments and others) review this statement before it is submitted to the RTC and DRCOG Board for approval. TAC, RTC and the Board meetings provide the opportunity for

public comment. Comments are addressed at the meetings, and if necessary, changes are made to the self-certification document as it processes through for approval by the DRCOG Board. The statement is signed by the executive directors of CDOT and DRCOG and conveyed to federal agencies along with the TIP.

2. *What educational efforts, background information, guidance, or documentation is the policy board and contributing committees provided to help them understand the meaning of self-certification in regard to the various Federal laws and requirements listed in 23 CFR 450.334(a)?*
  - a. With CDOT input, DRCOG staff prepares a draft certification statement that is taken for action by the DRCOG Board through the transportation committee process. At these committee meetings, staff provides a briefing as to the purpose of the self-certification process.

#### **Section IV.3- Title VI & Nondiscrimination**

##### Links:

- [Limited English Proficiency Plan \(Spanish version\) \(June 2013\)](#)
- [Limited English Proficiency Plan \(English version\) \(June 2013\)](#)
- [Draft Title VI Plan \(as of January 2016\)](#)
- [2040 Fiscally Constrained Regional Transportation Plan \(February 2015\)](#)
- [4-Year Area Plan on Aging \(FY2016-2019\)](#)
- SCI Resources:
  - <https://drcog.org/taxonomy/term/38>
  - <https://drcog.org/planning-great-region/sustainable-communities>
  - <https://drcog.org/sites/drcog/files/resources/FINAL-OAKS%20Full%20Report%20with%20Appendices.pdf>

1. *What goals, policies, approaches, and measurements has the DRCOG adopted to monitor, assess, and document compliance with Title VI and other nondiscrimination requirements? For ADA?*
  - a. See DRCOG's Title VI [webpage](#)

All Board and committee meetings are open to the public. Public comment is always included as an agenda item. Public participation is part of every step of the planning process. Staff reviews all steps in the preparation of planning documents to identify any potential discrimination. Action is

taken to remedy the situation if there is any discrimination identified. Equal opportunity to participate in the planning process is the key Title VI/Non-Discrimination Concerns/Responsibility.

2. Describe the DRCOG's Title VI complaint procedures and where the documentation is housed.
  - a. Located on DRCOG Title VI [webpage](#).

DRCOG's Title VI Complaint Coordinator ("Coordinator") is available to review any concerns about potential violations. In order to file a formal Title VI complaint against a recipient of funds from DRCOG, the following steps need to be followed:

A complainant will contact the Coordinator. If a complaint is received by any other DRCOG staff member, that staff member will refer the complaint to the Coordinator.

The Title VI Coordinator will conduct an initial determination of the sufficiency of the complaint to be a potential violation of Title VI.

If it is determined that the complaint does not meet the basic criteria to be a violation of Title VI, then a determination will be made on whether the issue can be informally resolved or administratively closed. That determination will be communicated to the complainant.

If it is determined that the complaint meets the basic criteria of a potential violation of Title VI, then an investigation will be conducted by a trained investigator. The investigation will be completed within 60 days from the date it is determined the complaint is sufficient. A formal notice will be sent to the complainant.

The level and method of investigation will be determined on a case by case basis and is at the discretion of the investigator. A final report of findings from the investigation will be prepared by the investigator. A final notice of findings will be sent to the complainant by the investigator. If the investigation is conducted by a Regional Civil Rights Specialist, a copy of the report and final notice of findings will be sent to the Coordinator. The final notice will include the process for filing an appeal of the decision.

A complainant may appeal a decision by submitting a request in writing within 30 days of the final notice. The request should include information detailing why the complainant believes the decision was made in error. The complainant will be given information on how to appeal this decision directly with the state or federal funding agency in the final notice.

#### How to File a Complaint

If you believe that you and/or any person(s) under your care have been discriminated against by any organization that receives funds from DRCOG for any of its programs, services, facilities or activities, please complete a discrimination complaint form as found attached. Please provide:

- Your full name, address, and telephone number, and the name of the person who you believe were discriminated against;
- The name of the organization that you believe has discriminated, its address and telephone number, and any other identifying information;
- A description of the actions that you believe were discriminatory (dates of actions, names of those who you believe discriminated, and witnesses);
- Any other information that you believe necessary to support your complaint. Please send copies of relevant documents, and keep originals.

3. *Since the last Certification Review, has the DRCOG received Title VI and/or other nondiscrimination complaints? If so, describe active as well as previously resolved complaints. Identify any trends or patterns in deficiencies relating to Title VI and other nondiscrimination requirements and how those have been or are being resolved.*
  - a. No complaints have been received.
4. Has the planning process identified the locations of vulnerable socioeconomic groups, including low-income, disabled, religious, and minority populations as illustrated by Title VI provisions?
  - a. The locations of low-income and minority population concentrations were most recently identified in the 2040 RTP and are considered when evaluating specific projects for inclusion in the RTP and the TIP. DRCOG is

currently updating its overall EJ Report for the Region, including revised census-based definitions of population concentrations. A final report approved through the MPO and public review process is expected to be completed this spring. Concentrations of limited English proficiency households are mapped and documented in the LEP Plan. DRCOG Plans also addresses the number, needs, and other facets of the region's populations of older adults, persons with disabilities, and other types of households with mobility needs.

**5. *How does the MPO identify the needs of low income and minority populations? What processes are in place to assess the impacts and benefits of the transportation investments on these groups? Is there a data collection process to support the Environmental Justice analysis? If an imbalance is identified, how does the MPO address it through the planning process?***

- a. Needs are identified through numerous outreach and input methods, including those specifically conducted by DRCOG, and just as important those conducted through entities that have closer day to day interaction with these populations: Area Agency on Aging, the SCI activities of the past three years, RTD, Local Coordinating Councils, and other surveys, Board, local government, corridor studies, and advocacy agency representatives and publications.

TIP project scoring and RTP documentation include reference to impacts and benefits for these groups. The primary source of specific demographic data is the US Census which is routinely reviewed. Projects are reviewed for their level of potential benefit to these groups. An updated EJ summary document is under preparation.

Data on specific travel patterns associated with lower income households was also gathered in the 2010 Front Range Travel Counts household travel survey. The final database was recently completed for this project, enabling further detailed analyses.

No “imbalances” have been identified. Transit, bicycle, pedestrian, and roadway improvement projects have been funded in the TIP throughout the region and will help improve access to jobs and services for low-income and minority persons equal to or greater than the region as a whole. For transit service access to jobs specifically, both DRCOG analyses and national organizations, such as the [Brookings Institute](#), denote strong transit accessibility measures for the Denver region.

**6. Describe the process by which low-income, minority and LEP populations and those “traditionally underserved” can comment on the UPWP, the TIP, the Transportation Plan, and other documents prepared through the planning process. How does the DRCOG respond to these comments?**

- a. The standard methods available to all of the public as well as advocacy organizations and groups are used, such as post card, website, email, legal notice, and committee announcements. All persons have the opportunity to comment via several possible methods (in-person, website, letters, via representatives, etc.) Such persons or representatives often serve on specialized committees or events associated with key documents (e.g., SCI, DRMAC, 4-Year Area Plan on Aging, Coordinated Transit Plan). Minority focused media outlets and organizations are on press and informational contact lists.

Summaries of public comments received and associated responses are provided to the DRCOG Board and applicable committees prior to taking action on planning and programming documents.

In addition, several outreach events were conducted to give additional opportunities for vulnerable populations and their advocates to provide input. Examples are included below:

- DRCOG-DRMAC Transit Forum for the Coordinated Transit Plan
- United States on Aging Survey- A Community Discussion
- 2016-2019 DRCOG Area Plan on Aging- Public Input from Community Conversations; and
- CDOT Statewide Transit Plan Open House (DRCOG staff presented information and gathered input for the Coordinated Transit Plan).

7. What strategies and efforts has the MPO developed for ensuring, demonstrating, and substantiating compliance with Title VI?
  - a. See as described in the [Title VI](#), [LEP](#), and [Public Involvement](#) Plans. We can discuss further during site visit.

**Section IV.4- Environmental Justice & Limited English Proficiency (LEP)**

**1. What goals, policies, approaches, and performance measurements has the DRCOG used to address environmental justice? To identify and meet the needs of LEP populations?**

- a. See as described in the Title VI, LEP, and Public Involvement Plans. We can discuss further during site visit.

2. Has the region performed an analysis to determine whether there are any language groups that qualify as LEP?
  - a. Yes, as described in the LEP. Spanish speaking persons are the most significant population group (5.7% of population that speaks English less than “very well” lives in home where Spanish is spoken).

3. If so, how has the region reached out to these LEP groups?
  - a. DRCOG’s Sustainable Communities Initiative project included a concerted effort to conduct surveys and interviews to solicit input on needs in Spanish speaking neighborhoods. (see for example: [https://drcog.org/sites/drcog/files/resources/West%20Corr%20Collab\\_%20East%20CWG%20Presentation\\_5%202%2013.pdf](https://drcog.org/sites/drcog/files/resources/West%20Corr%20Collab_%20East%20CWG%20Presentation_5%202%2013.pdf) and <http://www.mwhsolutions.org/> )

Notices have been placed in Spanish language newspapers and Spanish media outlets and organizations also receive announcements for draft documents, public forums, hearings, and media releases. Spanish language materials have been produced on occasion or are linked on the DRCOG webpage (e.g., Metro Vision transportation questionnaire, English to Spanish Glossary of Transportation Terms, links to Hispanic FHWA safety websites, and Way to Go web page). Easy to access language translation (Google) is available on the banner of all DRCOG webpages. The DRCOG Aging Division’s Elder Refugee Program receives input and provides informational services to a wide range of LEP persons. Numerous Spanish language outreach materials are produced and conducted for major corridor studies (e.g., <http://www.i-70east.com/index-es.html> )

4. What steps are taken to address the needs of these individuals?
  - a. Needs are referenced in the Metro Vision Plan, RTP, and Coordinated Transit Plan. The TIP project programming effort considers the needs through the evaluation criteria. DRCOG staff is trained and has available in all meeting rooms Language Identification Flashcards. MPO staff follows efforts of the DRCOG Aging Division’s Elder Refugee Program. <https://drcog.org/programs/area-agency-aging/elder-refugee-program>

5. How have EJ and LEP populations been documented?
  - a. The locations of low-income and minority population concentrations were most recently identified in the 2040 RTP and are considered when evaluating specific projects for inclusion in the RTP and the TIP. DRCOG is currently updating its overall EJ Report for the Region, including revised census-based definitions of population concentrations. A final report approved through the MPO and public review process is expected to be



completed this spring. Concentrations of limited English proficiency households are mapped and documented in the LEP Plan. DRCOG Plans also address the number, needs, and other facets of the region's populations of older adults, persons with disabilities, and other types of households with mobility needs.

6. How does the State DOT verify the DRCOG's policies and related activities?
  - a. The establishment of RTC ensures coordination of the regional planning process. CDOT must also ultimately accept all documents produced as part of the UPWP.

The CDOT Civil Rights Business Resource Center (CRBRC) provides oversight and technical assistance, including reviewing the environmental justice components of NEPA documents. LEP Plans are submitted to the CRBRC for review. The CRBRC reviews and provides comment. The CRBRC also provides guidance on LEP, EJ, and Title VI. CRBRC staff attended several recent Statewide MPO meetings to answer questions and offer assistance. Title VI trainings were also offered by the CRBRC in October 2015. After a new CRBRC Title VI Analyst is hired, the CRBRC will be collecting plans from highway subrecipients and providing technical assistance to ensure their programs are compliant. MPOs will be part of that process.

#### **Section IV.5- Americans with Disabilities Act (ADA)**

1. ***How does the DRCOG and the CDOT comply with the ADA requirements both in transit and highway planning programs?***
  - a. CDOT and RTD, as the contractual stewards of federal funds, are the primary lead agencies on compliance related to all projects using federal funds. DRCOG, along with CDOT and RTD inform all applicable project applicants (e.g., local agencies) of ADA requirements associated with federally funded projects.
2. What type of transportation services and strategies are available for ADA populations?
  - a. RTD provides required ADA transportation services (RTD Access-a-Ride). Many other volunteer and fee-based services are provided across the region.
    - Information dissemination and training programs are administered by numerous agencies in the region.

- Information and referral is offered by DRMAC and DRCOG's Area Agency on Aging.
- Via Mobility offers travel training (directly training individuals on how to use fixed route and "train the trainer"). DRMAC conducts outreach and marketing to publicize this service; and DRMAC offers workshops to educate this population and those that serve them. Topics have included Disability Etiquette, Compassion Fatigue, a symposium on ADA paratransit service, and a grant writing workshop.
- Through FTA's 5310 grant program, DRCOG, CDOT, and RTD have funded projects that go beyond minimum ADA requirements to provide door-to-door and door-through-door service, transit accessibility improvements, and mobility management activities.

3. *How is the DRCOG planning to coordinate with the CDOT (and vice versa) in regards to ADA Transition Plan monitoring for the local agencies?*

- a. DRCOG and CDOT are working closely together on this right now.

CDOT is hosting an ADA training on March 22nd, 2016. MPO representatives, including DRCOG, will be invited to attend this training. CDOT Civil Rights Business Resource Center (CRBRC) has also conducted 14 ADA trainings around the state in the last 2 years, which have included DRCOG staff and many LPAs under DRCOG. CRBRC has also recently collected ADA Transition Plans from local agencies around the state. This was done as part of CDOT's effort to update the CDOT ADA Transition Plan. Currently, the state is at 13% compliance with ADA for state-owned curb ramps. To address this, CDOT will be putting \$15M/yr to this effort, with the goal of being in 100% compliance in 5 years. The CDOT ADA Transition plan will document a strategy for spending those funds and meeting this goal.

Additionally, the CRBRC will continue to attend Statewide MPO meetings to provide updates regarding ADA, provide resources, and ensure coordination.

4. How does the planning process identify the access and mobility needs of ADA populations?

- a. Access and mobility needs are identified in the adopted [2035 Transit Element](#) of the 2035 MVRTP and in the [draft 2040 Coordinated Transit Plan](#). Input is received from numerous stakeholders who participate in transit planning and the AAA's Advisory Committee on Aging outreach efforts.

The draft Coordinated Transit Plan forecasts the growth for major populations groups that may be more likely than the general public to need and use transit services. The population groups identified are: individuals with disabilities, older adults, youth, zero car households, low income, minority, and limited English proficiency. In addition to the forecasts there were several input sources that contributed toward an assessment of needs for these and other vulnerable populations.

5. Please discuss common ADA issues across the metropolitan area. How has the planning process been utilized to implement ADA requirements and address these issues?
  - a. Surveys have identified critical transportation service needs (to access jobs, medical care, and quality of life destinations), as well as physical infrastructure improvements (e.g., sidewalks and curb-cuts), and proper maintenance (e.g., snow removal). Actual service providers and owners/administrators of public rights-of-way (e.g., local governments and CDOT) are the most critical entities and personnel for addressing issues, identifying problems, and responding to them on a day-to-day basis.
  
6. *What measures and methods are used or being developed to analyze and verify the impacts on ADA populations of multimodal access and mobility performance improvements in the plan and the TIP?*
  - a. DRCOG has initiated an ongoing monitoring program to evaluate the effectiveness of recently constructed TIP projects. All modes will be evaluated in this program. For example, DRCOG staff counts and documents all users (including mobility impaired users) at sites of recently completed pedestrian projects. For transit service projects, DRCOG staff monitors ridership, trips provided, service area covered for fixed route and other types of transit projects funded in the TIP.

CDOT will be putting significant resources to ADA compliance over the next several years (see response to question 3 above). The CDOT ADA Transition Plan will document strategies, including how to analyze and verify the impacts on ADA populations of multimodal access and mobility improvements.
  
7. What is the relationship between the CDOT and the DRCOG, as well as the relationship between the DRCOG, transit operators and other direct recipients and sub recipients, in assuring compliance with ADA requirements?
  - a. See response to question IV.5-1. above and discuss further at site review.

## **Section V**

### **Section Document Links:**

- [2040 Fiscally Constrained Regional Transportation Plan \(February 2015\)](#)
- [2016-2021 Transportation Improvement Program](#)
- [List of Rollover Projects \(Aug 2015\)](#)
- [Policy on Transportation Improvement Program \(TIP\) Preparation–Procedures for preparing the 2016-2021 TIP \(updated March 2015\)](#)
- [FY2015 Annual Listing of Obligated Projects \(ALOP\)](#)

### **Section V.1- Financial Planning**

- 1. How is the financial information in the RTP and the TIP developed and coordinated with all of the affected agencies (DRCOG, CDOT, transit operators, and local jurisdictions)?*
  - a. CDOT conducts an in depth “program distribution” process to estimate federal and state funds available for TIPs and RTPs based on current law and average economic conditions in the future. DRCOG and RTD develop estimates of local funding, and work together with CDOT in defining the total estimated revenues. FHWA and FTA also worked very closely and offered advice throughout the process and conversations at the MPO and through the statewide planning process.*
2. Do the RTP and the TIP clearly indicate which revenue sources exist, are new, or are reasonably expected? What further analysis is done on funding sources that affect RTP policies and strategies such as the eligibility and timeframe of funds?
  - a. The TIP clearly indicates immediate short term existing funding sources. The RTP notes that all estimated long range revenues are reasonably expected. No new sources are included in the current RTP, and have not been included in recent RTPs. All federal and state funds are estimated on an annual basis. Expenditures for regionally significant projects are also stratified by individual staging periods to indicate when projects will be completed.*
- 3. What is the DRCOG process for determining cost and revenue projections?*
  - a. See #1 above for revenue projections. Costs were estimated based on previous in-depth studies (e.g., NEPA, PELs) for most projects. Costs for*

other projects to be completed in distant staging periods (i.e. after 2025) were estimated by project sponsor technical staff, compared to estimated staff-developed unit costs, and reviewed by DRCOG and CDOT.

4. What part of the financial planning process created the greatest problems for you? What would you do differently the next time? (In other words, what lessons came out of the process?)
  - a. Of course, the lack of sufficient revenues, combined with rising costs, create major competition for allocation of funds to projects.

It would be helpful if CDOT indicated and delineated federal fund sources more clearly, rather than blending into state funding “programs.”

### **Section V.2- Transportation Improvement Program Development and Project Selection**

1. *How is the TIP used to prioritize and implement elements of the RTP? How successfully does the TIP serve as a management tool for implementing the RTP? Describe how the TIP reflects the policies, investment choices, and priorities identified in the RTP?*
  - a. Project evaluation procedures used by CDOT, RTD, and DRCOG strongly consider elements of the 2040 RTP.

Regionally significant projects identified in the RTP (by staging period), categorical transportation needs listed in the RTP, and policies of the overall Metro Vision Plan were all factors in determining project eligibility, evaluation criteria, and selection processes in the TIP.

2. Are specific criteria used to determine which projects will be included in the TIP? If so, what process was used in developing these criteria? How are projects prioritized?
  - a. Evaluation criteria are used to calculate a score for DRCOG-selected TIP projects. The DRCOG Board, with specifically directed technical input from the TAC, spent over a year developing the evaluation criteria and associated policies for the 2016-2021 TIP (see the [TIP Policy document](#)). The scoring results were used directly to allocate 75% of the available funds to the highest scoring projects. The final 25% of funds were allocated based on a “2<sup>nd</sup> Phase” process that considered the evaluation score along with other factors. CDOT and RTD use unique procedures for the identification of projects for funding. The DRCOG committees and Board review each agency’s recommendations before including in the TIP

3. How are funds and projects prioritized and selected?
  - a. See response to previous question.
  
4. *What process is in place to track the progress of projects? How regularly does this occur?*
  - a. DRCOG has established a very detailed process to review project implementation status with sponsors and the contracting agency (CDOT or RTD). An annual [report](#) (pages 58-65) is presented to the DRCOG committees and Board defining delayed projects, and associated plans to get them back on track. Specific policies are in place for cancelling or addressing project phases that do not meet established milestones by a year after the fiscal year of awarded funds.
  
5. Who is part of the TIP development process and what are their roles and responsibilities?
  - a. See response to 2. above.
  
6. What is the process for TIP revisions (administration modifications and policy amendments) including how amendments coordinated with the STIP? How has the TIP/STIP amendment process been working?
  - a. The procedures for administrative modifications (minor changes) and TIP amendments (significant changed or new projects) are defined in the [TIP Policy Document](#) (pgs. 40-41). Every month, CDOT, RTD, and other sponsors have the opportunity to submit administrative modifications (to be processed by staff) or amendments (to be approved through DRCOG committee and Board process). Immediately following such actions, CDOT is notified to reflect the modifications and amendments in the STIP.  
  
DRCOG staff is unaware of any issues with the CDOT process of updating the STIP after TIP amendments have been processed.
  
7. How does the MPO ensure “rollover” projects are included in the TIP?
  - a. DRCOG staff works closely with CDOT to define the rollover list of projects included with the TIP. It is posted on the TIP webpage separately, and also included within the TIP document.

### **Section V.3- Annual List of Obligated Projects**

1. *What is the process for CDOT conveying information on annual obligations to the DRCOG, including both highway and transit funding? What information is provided?*
  - a. At the beginning of the new fiscal year, DRCOG requests information from CDOT, CDOT DTR, RTD, and FTA for all previous fiscal year obligations. Typically 1-2 months later, DRCOG receives raw outputs from SAP containing the CDOT project number, project name, STIP ID, functional funding code, DRCOG TIP ID, project sponsor, and obligation amount by funding code.
2. How is the Annual Listing of Obligated Projects made available to the public?
  - a. The [ALOP](#) is taken through the MPO committee process and to the DRCOG Board. It is also posted on the DRCOG website.
3. What types of public comments have been received on the listing?
  - a. No comments have been received from the general public. On occasion, committee and Board members have asked questions regarding specific projects.



## **Section VI**

### **Section VI Document Links:**

- [Memorandum of Agreement between DRCOG-CDOT-RTD \(updated June 2008\)](#)
- [Transportation Planning in the Denver Region \(Prospectus\) \(September 2011\)](#)
- [Policy on Transportation Improvement Program \(TIP\) Preparation–Procedures for preparing the 2016-2021 TIP \(updated March 2015\)](#)
- [Memorandum of Understanding-DRCOG and CDOT \(November 2004\)](#)
- [2040 Fiscally Constrained Regional Transportation Plan \(February 2015\)](#)
- [Transit Element of the 2035 Metro Vision Regional Transportation Plan \(April 2010\)](#)
- [Draft Coordinated Transit Plan \(as of January 2015\)](#)
- [2014 Annual Report on Traffic Congestion in the Denver Region \(Oct 2015\)](#)
- [Congestion Mitigation Toolkit \(June 2008\)](#)
- [Freeway Bottleneck Locations in the Denver Region \(Aug 2009\)](#)
- [DRCOG Regional Concept of Transportation Operations \(Aug 2012\)](#)
- [Draft 2040 MVRTP Freight & Goods Movement Report \(November 2015\)](#)
- [FY16-17 Unified Planning Work Program \(July 2015\)](#)

### **Section VI.1- Transportation Planning Process**

- 1. How does your planning process consider the eight planning factors from MAP-21?*
  - a. The 2016-17 [UPWP](#) (pages 3-5) and the [2040 RTP](#) (Appendix 6) provide detailed descriptions of how the eight planning factors are considered. They are inherent in everything we do. Board members and committees are reminded of their importance.
- 2. Describe how the DRCOG planning process coordinates its efforts with the CDOT HQ and Regions. Focus on relationships, conflict resolution, and general coordination activities.*
  - a. The CDOT HQ (DTD, OFMB, etc.) and CDOT Regions 1 and 4 are closely involved in all aspects of the DRCOG planning process – serving on committees (ACT, ICG, TAC, RTC), the Board, and through frequent staff interaction. DRCOG participates actively with the CDOT and statewide

planning process efforts. (STAC, TRAC, FAC, Statewide MPO, and Transportation Commission). DRCOG also participates in CDOT Region coordination meetings and CDOT's "4P" process. Pages 15-17 of the [Prospectus](#) describe in detail how DRCOG coordinates the transportation planning process with partners and stakeholders.

Operations staff at Region 1, Region 4, and CDOT ITS unit are also members of DRCOG's Regional Transportation Operations Working Group and are invited to participate in operations planning including specifically program development and ITS architecture maintenance. Additionally, DRCOG coordinates directly with CDOT ITS staff to implement the systems engineering analysis guidelines and related administrative activities.

DRCOG does desire more frequent interaction from CDOT's Traffic and Safety Branch (For example, to be timely informed of safety calls for projects such as State Hazard Elimination Pool and Safety Hot Spot Pool), and from the TSM&O Division. Recently, CDOT HQ planning staffs have convened bi-monthly internal coordination meetings to improve coordination between different planning functions, including TSM&O on safety and operations functions.

More timely interaction from CDOT (e.g., OFMB) staff regarding "checkbooks" for STP-Metro, CMAQ, and TAP projects and balances is needed. Recent staffing changes and organizational changes have created some issues with the timely provision of checkbook information. Staff from Region 1, DTD, TSM&O, and DRCOG have met to identify needs and CDOT staff are working to improve checkbook reporting.

3. ***Describe how the DRCOG planning process coordinates its efforts with the Regional Transit District (RTD). Focus on relationships, conflict resolution, and general coordination activities.***
  - a. RTD is closely involved in all aspects of the DRCOG planning process—serving on committees, the Board, and through frequent staff interaction. DRCOG participates actively with RTD on regional transit planning efforts. DRCOG has maintained FasTracks Review process with RTD since 2004 – with well-defined roles and tasks for each agency.
4. How is the planning process coordinated with other modes and providers of transportation, e.g., Denver International Airport, freight shippers, and railroads?

How do large generators of transportation, including universities, sporting arenas, and large employers, get involved in the regional planning process?

- a. DIA and freight representatives serve on the TAC. DRCOG staff is an active participant on the State Freight Advisory Council. Business representatives serve on the TAC and RTC. Transportation management organizations (TMOs) interact frequently with DRCOG planning efforts. TMOs include business, university, and large employer members. DRCOG frequently sits in on meetings, or gives presentations to economic development groups across the region. Because there are over 50 members of the Board, every part of the region is closely represented in the planning process.
5. What has been the response of the DRCOG to the FY16 Planning Emphasis Areas? These are MAP-21 Implementation, Regional Models of Cooperation, and Ladders of Opportunity/Access to Essential Services.
- a. Planning products, project programming evaluation criteria, and future planning activities identified in the previous and new 2016-17 UPWP address the emphasis areas. DRCOG is well-positioned through its present data and measurement efforts, strong coordination with CDOT, RTD and local governments, and active involvement of the Board of Directors with the new Metro Vision Plan, to respond to final federal planning rules related to performance based planning.

DRCOG has enjoyed a long-standing high-level of coordination between state, regional, local, and business entities. The federal SCI grant process of the past three years provided the basis for receiving more input and interaction with transportation disadvantaged communities, as it is often difficult to create interest on “long range regional planning” when their focus is on the immediate future, or specific projects in their backyard. It also enabled the creation of great informational resources (e.g., “equity atlas”). DRCOG contains the Area Agency on Aging, thus enabling consistent interaction with aging representatives, local coordination committees, and incorporation of their issues and consideration within MPO planning efforts. Analyses of environmental justice measures and job access have been a routine part of DRCOG’s planning process for over 10 years. The new UPWP includes updating the public involvement plan, which will identify further methods for engaging these communities.

6. *How does the DRCOG quantitatively consider the success of its RTP and TIP? Does the development of performance targets actually sway the way projects*

*are chosen and prioritized? Does it have any influence on policies or strategies developed? How have past performance targets impacted future anticipated, modeled, or forecasted assumptions?*

- a. The Board has adopted through the Metro Vision Plans, regionwide goals for reduction of SOV travel, per capita VMT, and per capita GHG reductions. Goals for reduction in fatality and injury crash rates have also been established. The new 2040 Metro Vision Regional Transportation Plan will likely identify new regional targets with consideration of forthcoming MAP-21/FAST Act planning guidance. The existing regionwide goals were definitely a consideration as the Board developed TIP policies, and evaluation/selection criteria. However determining the specific impact of targets on “swaying” project selection is very difficult to ascertain. All interact together, along with external forces. And nearly all types of projects will have some impact on one or more of the regional measures. Regional models have been used to evaluate future scenarios and their impact on performance measures – and vice versa – measures used as guide to see if a scenario could be created in which all the goals are met. However, for official conformity model runs, only reasonable planning assumptions agreed to be planning partners are used.
7. With new advanced vehicle technologies being invented, tested, and reaching the market, how does the DRCOG plan incorporate this concept and reality into their entire planning process?
    - a. DRCOG believes technology holds promise to mitigate traffic congestion, improving safety and opening travel options to certain populations. While we remain optimistic about potential of vehicle technology improvements, there are still a lot of unanswered questions about how it ultimately will be implemented within the transportation environment. As a result, DRCOG has not (with any degree of specificity) incorporated vehicle technology into the 2040 RTP planning process. However the 2040 Metro Vision documents will provide additional detail on the possible effects of technology on personal mobility, as well as freight.

DRCOG, working with the RTO Working Group, will update the RCTO to identify near-term regional transportation operations priorities and the strategies and initiatives to address them. Decisions at this level may require longer-term commitments to accommodate new technologies becoming available. For example, any commitment to implement the infrastructure to support vehicle-to-infrastructure capabilities will likely

take many years to implement and require the support of the bulk of the regional partners.

Immediately following the RCTO update, the RTO Working Group will begin formal development of the new Regional Transportation Operations Improvement Program (formally TSSIP and Regional ITS Deployment Program). This program is expected to efficiently make use of the available and applicable technologies as guided by the needs of the project sponsors, the regional ITS architecture, and the highest priority initiatives in the RCTO.

DRCOG and its planning partners will continue to proactively consider all aspects of new technologies when the programming (funding) and designing transportation projects. DRCOG will continue to monitor new technologies closely and is positioned to act nimbly in response to new verified technologies and legislative actions. DRCOG will also continue to host workshops and Metro Vision Idea Exchanges on technology and other evolving planning topics.

**8. *Will the Prospectus include performance targets based around the planning development process?***

- a. The [Prospectus](#) is a voluntary informational and education document prepared jointly among the co-signers of the MPO Planning MOA. It in essence, serves as an “appendix” to the MOA. It focuses on planning process policies and specific procedures, not planning data, measures, and results. It is not amended frequently. Performance targets aligned with planning rules associated with the Federal FAST Act will be presented in future applicable planning and programming documents (RTP, TIP, etc.).

**Section VI.2- Regional Transportation Plan (RTP)**

1. Provide an outline of the steps taken during the development of the fiscally constrained RTP. How does the fiscally constrained plan measure success?
  - a. The basic steps included:
    - Definition of demographic planning assumptions
    - Analysis of relation to comprehensive Metro Vision Plan policies and goals.

- Identification of key issues and challenges; e.g., through DRCOG public meetings and events (transportation, aging, Metro Vision planning), information from local governments, surveys, committees, etc.
- Definition of base roadway and transit networks (e.g., for modeling)
- Analysis (cost estimates, benefits) and prioritization of future regionally significant projects anticipated to be funded with reasonably expected revenues (by 10-year staging periods).
  - Candidate roadway, interchange, and BRT projects were scored and ranked based on 10 criteria addressing congestion, travel cost, urban centers, safety, Urban Growth Boundary, freight and multimodal benefit, rapid transit, and others.
- Working closely with CDOT and RTD, estimate future transportation revenues and base system needs and expenditures.
- Describe needs and applicable strategies within all categories of transportation facilities, services, and operations.
- Verifying consideration of Federal planning factors, emphasis areas, and EJ and environmental considerations.
- Environmental justice benefits and impacts.
- Conduct associated air quality conformity modeling and documentation.

Performance measures are presented in a chapter titled, “Transportation Benefits and Impacts of the 2040 Fiscally Constrained RTP.”

***2. Where does the data come from for the determination of your planning estimates used in the plan development process? Does it cover all areas of region equally? Are the data sources using compatible data metrics that allows for easy comparison?***

- a. Data across the entire region comes from MANY sources: local governments, CDOT, RTD, State Demographer’s Office, US Census, etc. For example, DRCOG’s land use forecast model, UrbanSim, uses parcel-based land use data from local governments, federal employment data, private data, and state demographic data to forecast residential and employment change for the DRCOG region from a real estate, market-based perspective. Discuss comparability further during site visit.

3. How do you ensure that the public can clearly understand the investments, services, and policies proposed for the regions?
  - a. Information is provided in a wide variety of methods, text and technical styles, maps, graphics, and visualization methods.
4. *Does the DRCOG explore alternative and scenario planning exercises? Describe how alternatives are chosen, what strategies are used for scenarios, and how they are examined to find the best.* What has been the experience of the DRCOG with their HUD grant?
  - a. DRCOG last conducted an analysis of future growth and transportation scenarios in 2013. [Scenario results](#) (pages 51-53) were presented to the DRCOG Board in December 2013. (Scenario analyses were also conducted in 2007 and 1995) Committees and stakeholders helped to define the alternative future scenarios. In 2013, the analysis was not conducted to define a “best” scenario, rather as a sketch planning exercise to gauge the level of changes to several transportation performance measures associated with the different scenarios.
5. Does the RTP break down strategies into short and long term? Does the DRCOG apply a cost/benefit mechanism when considering policies or strategies either at program or project levels?
  - a. Five to ten-year implementation “staging” periods (“short” and “long” term) are defined, with specific projects slated for completion within each period. Strategies are so broad, with new technologies emerging every year, and thus not specifically defined as short or long term. For example, as emerging technologies in the safety and operational fields become “real” the RTP can be amended, but the TIP is the primary mechanism for short term, and nimble, implementation. Benefits and costs are considered for regionally significant projects identified in the plan to be funded with “competitive” state and federal revenues. Detailed costs and benefits are not defined for specific policies and general categories of “strategies” defined in the RTP. That is done when projects associated with such strategies apply for actual funding through the TIP.
6. *Describe how the RTP corresponds to the goals, objectives, and targets of the Statewide Plan 2040.*
  - a. The content of the RTP (projects, strategies, policies, etc.) are consistent with, or do not conflict with, the Statewide Transportation Plan for 2040. DRCOG staff worked closely with CDOT’s Division of Transportation



Development staff to review CDOT's Statewide Plan 2040 as it was being developed for consistency with the 2040 RTP.

7. Is there a public transit-human services Transportation Plan (49 U.S.C. 5310, 5316, and 5317)? If so, how is the development of the public transit-human services Transportation Plan (49 U.S.C. 5310, 5316, and 5317) coordinated and consistent with the metropolitan transportation planning process?
  - a. The currently adopted "[Transit Element of the 2035 MVRTP](#)" has been approved to serve as the Coordinated Public Transit Human Services Transportation Plan for the DRCOG region. It is now in the process of being updated as part of the [transit component of the new 2040 MVRTP](#). It should be adopted in 2016. The development of the transit plans followed the metropolitan planning process, plus involved significant additional outreach and input across the region to transit providers, customers – including older adults and persons with disabilities, and other advocacy and service groups, such as DRMAC and the regional Advisory Committee on Aging.
  
8. Describe how the validity of the original assumptions, and performance, of the RTP are reviewed during updates to the RTP. How do the performance targets provide evidence that progress towards system betterment has been achieved?
  - a. Previous plan predictions of measures (e.g., population growth, VMT, transit ridership) are reviewed and modeling assumptions and factors are adjusted for new plans to reflect changes or trends. Some measures improve (transit and bicycle use, bridge condition), some stay about the same (pavement, and rolling stock condition). Congestion measures all indicate worsening (due primarily to population growth), however the level of worsening for the future is not as bad as previously predicted.

As another example, the 2030 MVRTP goal for a decreased fatal crash rate in the region was achieved a few years ago, thus a more rigorous goal was established in association with the 2035 MVRTP. Goals and targets for the 2040 MVRTP have not yet been set. They will also need to be revisited following the completion of federal MAP-21/FAST Act planning rules and setting of state targets by CDOT.

### **Section VI.3- Congestion Management Process (CMP)**

1. ***Describe the area, network, and modes covered by the CMP.***
  - a. Entire DRCOG region is covered. Congestion is specifically measured for the designated regional roadway system (DRCOG principal arterials and above, ~ 2,400 mile system). Transit ridership and measures for other travel modes (walking, bicycling, carpooling) are analyzed.
2. How have Transportation Partners been involved in the development of the CMP and its updates? What efforts have been made to identify and include CMP stakeholders such as other transportation modes, agencies and system operators in the region, including airports, freight, railroad, and technology innovators, who stand to gain from addressing congestion problems? Describe the interaction that has taken place with local transit, freight and traffic control operators, and other stakeholders in the CMP.
  - a. CDOT and local governments are the primary contributors of base data to the CMP database and process. The TAC reviewed and endorsed the original analytical techniques used for the routine annual analysis. CDOT reviewed and used the CMP Freeway Bottleneck analysis report as a reference for some of their projects. [CMP reports](#) are annually produced and presented to all DRCOG committees (including freight and business representatives) and the DRCOG Board. The new state Freight Advisory Council now provides an excellent venue for sharing CMP information and receiving additional feedback. Traffic management and operation representatives are active on the Regional Transportation Operations Working Group which helps to implement many of the key strategies identified in the CMP Congestion Mitigation Toolkit.
3. ***When considering potential congestion reducing strategies, does the DRCOG require, or at a minimum analyze, projects have a proven track record of providing positive benefits be implemented before unproven strategies?***
  - a. In general, yes. But at any given time, because of rapidly changing technologies, highly innovative strategies may be funded, based on anticipated outcomes. Discuss more at site visit.
4. Describe how the MPO uses congestion management process principles in evaluations and strategies for the metropolitan planning process (e.g., UPWP,

corridor studies, conformity, and RTP/TIP project development/prioritization)? Do the goals and targets in the RTP/TIP support the CMP, and vice versa?

- a. Site specific congestion measures, and identified congested roadways and bottleneck points from the CMP are used in the evaluation criteria for RTP and TIP roadway projects, as well as TDM projects (where they are likely to have the greatest impact). Regionwide measures (delay, VMT, etc.) are considered during RTP and Metro Vision policy discussions.

All of the strategies identified in the [Congestion Mitigation Toolkit](#), as well as brand new or emerging strategies, are referenced in the RTP. They are also eligible to receive funding through the TIP, or one of the set-aside pool categories (e.g., TDM and Transportation Operations/ITS)

DRCOG ensures that roadway capacity projects (using federal funds) must be shown to address locations of significant congestion identified through the CMP.

It is difficult to say which has greater influence on “supporting” the other (CMP or RTP). CMP produces numerous measures and predictive results that may be used as basis for when congestion targets are established. Identified projects in the RTP are reflected in the future estimates of traffic congestion, personal delay, and multimodal travel.

**5. *What performance measures are in place to evaluate the CMP? How do the performance findings get used to improve the CMP?***

- a. Every year, DRCOG staff reviews all procedures, data formulas/factors, and data sources (e.g., traffic counts and associated techniques) to ensure the most accurate analytic methods are used and results are obtained. New real-world data is also reviewed, and adjustments are made to calibrate/validate the CMP database and the regional FOCUS travel model. The FOCUS model then provides the basis for forecasting traffic volume growth.

Numerous performance measures of congestion are calculated and presented every year. DRCOG is considering such measures now, (and will further develop these measures after FAST Act planning rules are

established) as it develops policies and targets for the Metro Vision Plan and new MVRTP.

6. How are the findings of the CMP evaluations and monitoring strategies used to influence the policy or direction of the RTP and TIP processes?
  - a. The DRCOG committees, Board, and planning partners are fully informed of CMP results and strategies for their consideration as they discuss policy and technical aspects of RTP and TIP processes. As necessary, or requested, unique calculations are made and presented to assist with the policy making.
  
7. *Does the CMP consider all modes of transportation when developing congestion management strategies? How have these transportation industries been reached out to for specific engagement on this topic? This would include autonomous vehicles and connected vehicle technologies, freight providers, airports, and railroads.*
  - a. The Congestion Mitigation Toolkit identifies strategies for all transportation modes and technologies. The entire CMP has always focused on the 3-As of congestion mitigation: Avoid, Adapt, and Alleviate. This brings all travel modes into consideration. The DRCOG CMP also integrates closely with ITS, Regional Operations and State TSMO. DRCOG has freight and aviation representatives on the TAC. DRCOG is actively participating on the state Freight Advisory Council. See response to VI.1 question 7 regarding new technologies.

#### **Section VI.4- Freight Considerations**

1. *How has the DRCOG identified the transportation planning link between freight and economic development opportunities for the area?*
  - a. This is described in detail in the 2035 MVRTP and the [draft Freight Report](#) for the new 2040 MVRTP. A specialized analysis was also published in the CMP's 2012 Annual Report on Congestion. DRCOG also had several meetings and presentations with economic development agencies across the region when developing the draft 2040 Metro Vision plan.

2. Has the DRCOG developed a "freight contact" list for purposes of encouraging freight shippers and providers of freight transportation services a reasonable opportunity to participate as part of the metropolitan planning process?
  - a. DRCOG is now utilizing CDOT's Freight Advisory Council list to update our old list which was used for previous freight forums, etc. The contact list for the ongoing DRCOG Commercial Vehicle Survey (shippers, carriers, etc.) is also being incorporated into the master list. Planning, congestion, and other documents and process notifications will be sent to this list as applicable.
  
3. *When considering the freight element, what combination of freight-related components gets considered? Does it extend beyond the transportation network and look at freight origins and destinations?*
  - a. DRCOG's [draft freight element](#) addresses all aspects of freight within and beyond the DRCOG region. The draft document analyzes:
    - i. Federal freight requirements and guidance
    - ii. Current freight planning efforts and stakeholder input
    - iii. Freight network and facilities (including PFN and MFN)
      1. Trucks and roadways
      2. Commercial vehicle volumes
      3. Deliveries
      4. Safety
      5. Railroads
      6. Multimodal terminals, air cargo, pipelines
      7. At-grade arterial roadway crossings
      8. Warehousing, hazardous materials
    - iv. Commodity flows (using CDOT's database for consistency)
    - v. Relationship to the MVRTP
    - vi. Operations and technology
    - vii. Other topics
  
4. Has the freight section of the regional plan been vetted through any freight organizations or groups? What has been the outcome from the participation of the freight community in the planning process?
  - a. Yes, it is being provided to the state FAC for their review and input. Further revised drafts will also be shared with FAC and the updated regional freight

contact list. Good input has been received from the freight community over the years. Issues and topics of concern have been presented in all RTP renditions. It is of course, difficult to get significant involvement from the freight community since they are very busy. However, we have heard clearly their major concerns, (e.g., roadway signage, roadway design elements, and traffic chokepoints at key locations across the region.

5. How does the DRCOG consider and evaluate land use and freight-oriented industries within their metropolitan planning area? How is coordination between land use plans and future freight-related development needs addressed (i.e., accounting for increased freight-related movement)?
  - a. The DRCOG land use model (UrbanSim) combined with the travel demand model (FOCUS) factor in, and give specific consideration to employment and trips related to the movement of freight and goods. A commercial vehicle survey (including travel diaries and GPS based origin and destination information) is presently being conducted by DRCOG. More than 2,000 data samples from business establishments and commercial vehicles will be obtained. The information will be used to better validate and calibrate the models.
  
6. What process does the DRCOG have in place to collect traffic data and monitor the system performance and reliability of the regional transportation system with regard to major freight movements (e.g., travel time, speed, delay time, etc.)?
  - a. Data collection is compiled, monitored, and conducted through the congestion management process. The primary source of data is truck classification traffic counts conducted by CDOT, local governments, and others. This enables calculations of delay for commercial vehicles to be estimated. Travel times and speeds are monitored for the entire make-up of vehicles traveling on roadways (e.g., CDOT surveys, INRIX, etc.). Trucks are not called out in these sources. Past RTPs also noted specific delay concerns to freight railroad operations, including delay-inducing maneuvers required at the Utah Junction rail complex just north of downtown Denver. Significant improvements were made at that location by the freight railroads a few years ago. Operational times and delays were greatly reduced.

7. *Discuss the DRCOG's participation in the CDOT freight initiatives. These include, but are not limited to, the Freight Advisory Committee (FAC) and the State Freight Plan (Highway portion and Intermodal portion).*
  - a. DRCOG is an active participant with CDOT on the FAC and State Freight Plan. Additionally, DRCOG and CDOT have partnered on a number of freight related activities, including the Front Range Travel Counts Study.
  
8. What type of training has the DRCOG staff received pertaining to freight planning?
  - a. DRCOG has participated on webinars, state freight planning efforts, and corridor studies with significant freight emphasis, review of state and federal freight plans and documents. Staff with extensive regional freight planning experience and college courses on transportation economics and logistics. Staff also participated on a USDOT sponsored study session of freight delivery issues associated with new urban mixed use developments (Belmar in Lakewood).



## **Section VII**

### **Section Document Links:**

- [Regulation 10 \(SIP\) Criteria for Analysis of Transportation Conformity \(December 2011\)](#)
- [Memorandum of Agreement-DRCOG and North Front Range MPO \(March 2008\)](#)
- [Memorandum of Understanding Extension \(December 2011\)](#)
- [Memorandum of Agreement – CDOT Concurrence on TIP to STIP Amendments \(February 2009\)](#)
- [Memorandum of Agreement - CDOT-CDPHE \(AQCC\) - Air Quality and Transportation Integration \(May 2002\)](#)
- [Memorandum of Agreement – RAQC-DRCOG - Coordinating Air Quality and Transportation Planning \(Feb 2011\)](#)

### **Section VII.1- Air Quality Planning**

- 1. Describe the roles and responsibilities of all the organizations responsible for air quality monitoring, modeling, and analysis. Include discussion on how the relationships with the major air quality agencies are working.*
  - a. The MOAs clearly describe in detail the procedures, agency roles, and steps associated with the Ozone Non-attainment conformity and the CO/PM-10 conformity determinations. DRCOG works with CDOT, RAQC, and CDPHE, as well as the NFRMPO and UFRTPR on ozone. Much review work is conducted through the Interagency Consultation Group (ICG) which also includes EPA, FHWA, and FTA. The review process works well. DRCOG and NFRMPO are responsible for travel model data and preparing determination documents. The RAQC and CDPHE lead air quality modeling and emission calculation efforts.*
- 2. What challenges does the DRCOG face on using its data in air quality modeling and planning?*
  - a. None of note.*
- 3. Have conversations begun to consider how the DRCOG, the CDOT, and air quality agencies will address the new ozone standards recently released?*
  - a. Yes, through the RAQC and presentations to DRCOG, but only a very broad sense. The region is still focused on completing the 75ppb SIP. All regional partners will closely monitor guidance issued by EPA in the coming months and years related to the new 70ppb standard.*

4. How does the DRCOG coordinate the development of the RTP with State Implementation Plan (SIP) development? How does this coordination get reflected in the planning documents?
  - a. The RTP and conformity determination documents closely reference the applicable SIPs (e.g., Transportation Control Measures). DRCOG follows closely, the RAQC and CDPHE's work on SIPs via their meetings, and through topical discussions at the ICG.
5. Does the TIP include a list of all projects found to conform in a previous TIP that are now part of the air quality planning base case?
  - a. We are not sure we understand the context of the question. The majority of the base case roadway and transit network is made up of previous TIP projects. Discuss more during the site visit.
6. How does the DRCOG ensure priority programming and expeditious implementation of Transportation Control Measures (TCM) from the SIP, regardless when those TCMs were enacted? Does the TIP describe progress in implementing required TCMs? How are the public, local transit operators, and air-quality agencies involved in the prioritization and selection of possible CMAQ program-funded projects?
  - a. All TCMs were fully implemented as of 2006. Nothing in the TIP interferes with the ongoing operation of previously completed TCMs. Local transit operators and the RAQC serve on committees that review policies and criteria, and select projects to be funded with CMAQ funds. The general public participates and provides input via procedures described in the previous public outreach section of this questionnaire, and in the DRCOG public involvement plan.

### **Section VII.2- Transportation Demand Modeling**

1. Who is responsible for travel forecasting at the MPO? (If another governmental agency provides required modeling expertise please detail whether or not there is a formal memorandum of agreement between the agencies to delineate technical responsibilities, lines of communication and nature of review).
  - a. DRCOG is the lead. RTD is a partner on the development of transit networks and transit model parameters.
2. Describe the travel demand forecast model used by the MPO in the transportation planning process.
  - How was the travel demand model developed?

- a. The Focus activity-based model was developed by DRCOG in conjunction with Cambridge Systematics. Focus was first used for the RTP update in fall 2010. It continues to undergo incremental refinement and recalibration in response to identified issues and evolving policy needs. In late 2013, DRCOG contracted with AECOM to conduct a Price Sensitivity Study that concluded in spring 2015 with recommendations for a program of model improvement projects. In January 2015, DRCOG is in the process of completely re-writing the Focus code to take full advantage of object-oriented programming capabilities such that the resulting software is able to run considerably faster than the current version.
- What is the base year of the data used to develop the model?
  - a. 2010 is used as the current calibration year, though DRCOG is moving to a base year of 2015 as various observed data from that year becomes available. Socioeconomic data is based on control totals developed in conjunction with the state demographer as recently as 2015
- How many Travel Analysis Zones (TAZs) does the model have?
  - a. There are 2,804 internal TAZs and 28 external stations, for a total of 2,832 zones in most trip matrices produced by the model. The internal TAZs cover the entirety of Adams, Arapahoe, Boulder, Broomfield, Clear Creek, Denver, Douglas, Gilpin and Jefferson counties, plus a western portion of Elbert County and a southern portion of Weld County.
- How many links are in the model?
  - a. The number of links varies by horizon year, as well as by modeling “cycle” as proposed projects are added to networks. The following table gives the number of links by horizon year from the latest “Cycle 2, 2015” set of forecasts. The links represent physical roadways, centroid connectors, transit-only links, walk- (and bike-) only links, or combined transit and walk links.

Horizon Year	Number of Links
2010	21,540
2015	22,052
2025	22,629
2035	22,832
2040	22,849

- Has the use of the model provided the expected benefits to the planning process?
  - a. Yes. It has been used to provide data for such examples as air quality conformity (VMT and speeds), regional performance measures reported in

the RTP, measures used for future scenario analysis, and project specific data (traffic volumes and future growth). Further work will be conducted to decrease the operational time of the model so it can be more efficiently used for multiple analyses of individual transportation projects. Further information on the model is available in Appendix B of the air quality conformity determination: [https://drcog.org/sites/drcog/files/event-materials/DRAFT-2015 Cycle 2 Denver Southern Subarea 8-Hour Ozone Conformity Determination.pdf](https://drcog.org/sites/drcog/files/event-materials/DRAFT-2015%20Cycle%20Denver%20Southern%20Subarea%208-Hour%20Ozone%20Conformity%20Determination.pdf)

3. Has the DROCG been contemplating changing or updating their model utilization? Does the activity-based model, by itself, provide efficiency and cost-effectiveness?
  - a. DRCOG is currently incorporating efficiency techniques to improve the efficiency of running the model and producing results. DRCOG is also investigating the benefits of developing a new dynamic traffic assignment model to use in tandem with the FOCUS regional modal, primarily for analysis of specific corridors or project locations.
  
4. Describe the relationship between the DRCOG and prime users of the model and model outputs (RTD and CDOT).
  - a. The relationships between DRCOG and prime users of the model are characterized by collegiality and open communication. To the extent possible, issues are resolved between analogous levels of technical staff, and involving senior management as appropriate. Technical staff members are comfortable discussing challenges together and brainstorming alternative solutions.
  
5. How often are models calibrated? What is the cycle of updating the information represented in the model? What issues has the MPO had with calibration, validation, or other elements of the model development? Do the outputs of previous models get compared to actual year behavior?
  - a. RTP update cycles (once or twice per year) typically provide opportunities to re-calibrate a limited number of model components deemed priorities for proper model function. The following table describes some calibration efforts performed during recent RTP cycles.

RTP Cycle	Calibration Activities
2-2012	<ul style="list-style-type: none"> <li>• Mode choice</li> </ul>
1-2013	<ul style="list-style-type: none"> <li>• No change (other than future year networks)</li> </ul>
2-2013	<ul style="list-style-type: none"> <li>• Mode choice</li> </ul>

	<ul style="list-style-type: none"> <li>• Special generators</li> </ul>
2-2014	<ul style="list-style-type: none"> <li>• New socioeconomic model (UrbanSim)</li> <li>• Long-term decisions</li> <li>• Location choices</li> <li>• Travel quantity choices</li> <li>• Mode choice</li> </ul>
2-2015	<ul style="list-style-type: none"> <li>• Long-term decisions</li> <li>• Travel quantity choices</li> <li>• Mode choice</li> </ul>

The following table summarizes the frequency with which information represented by the model is updated.

Data Item	Update Frequency
Socioeconomic forecasts	Annually
Highway and transit networks	Biannually
Toll structures; transit fare structures	As information becomes available
Airport enplanements	Annually or biennially
Traffic counts, external station volumes	As often as annually
Transit boardings	Typically every five years corresponding to new base years
Travel behavior imputed from household and commercial vehicle surveys	Decennially*

\*Future household survey efforts will consider the trade-offs between more modest and more frequent efforts coordinated with Census and American Community Survey.

Some issues DRCOG has experienced with calibration and validation include (1) understanding the definitions, nuances, and limitations of input and calibration target data, (2) striking a balance between estimating and calibrating the model to replicate household survey data (which proved more difficult to expand than initially anticipated) versus regional travel behavior embedded in aggregate measures such as VMT, due to issues such as sampling error and non-response bias, (3) developing methods to merge the data obtained by the external video survey and the external travel postcard survey, and (4) turnover of senior modeling staff (lost or less-available institutional memory).

Senior DRCOG TPO staff track RTP forecasts over time to ensure that forecast changes logically reflect changes to inputs and assumptions (for example, revised socioeconomic forecasts incorporating the effects of the Great Recession) and ultimately whether such forecasts are realized.

6. Has DRCOG been a defendant in, or threatened with, legal action in which the adequacy of the travel forecasting methods was challenged? If so, what was outcome of this action?
  - a. No
7. Explain how the data on highway VMT and congestion summary measures is utilized and/or evaluated for consistency with traffic monitoring data used in the DRCOG Congestion management system.
  - a. Every year, through the CMP process, staff compares traffic count data to base year model estimates. Model VMT estimates are compared to previous years and evaluated alongside real world VMT results (traffic counts, FHWA HPMS, etc.).
8. Is there a technical committee to review planning assumptions and forecasting methods?
  - a. The Agency Coordination Team and ICG review planning assumptions and modeling methodologies (e.g., associated with RTP demographics, networks, and air quality conformity runs). DRCOG works particularly closely with RTD, who partners on transit network modeling.
9. Has the DRCOG been a partner in the development of the CDOT Statewide Travel Demand Model?
  - a. Yes



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