

AGENDA
REGIONAL TRANSPORTATION COMMITTEE
Tuesday, July 19, 2016
8:30 a.m.
1290 Broadway
Independence Pass Board Room

1. Call to Order
2. Public Comment
3. March 15, 2016 RTC Meeting Summary
(Attachment A)

ACTION ITEMS

4. Discussion on amendments to the 2016-2021 Transportation Improvement Program (TIP).
(Attachment B) Todd Cottrell
5. Discussion on amendments to the FY2016-2017 Unified Planning Work Program (UPWP).
(Attachment C) Douglas Rex
6. Discussion on policies and information requirements related to HOV/Toll/Managed Lanes.
(Attachment D) Jacob Riger

INFORMATIONAL ITEMS

7. Discussion on the Proposed Moderate Area 2008 8-Hour Ozone Standard State Implementation Plan (SIP)
(Attachment E) Douglas Rex

ADMINISTRATIVE ITEMS

8. Member Comment/Other Matters
9. Next Meeting – August 16, 2016
10. Adjournment

Persons in need of auxiliary aids or services, such as interpretation services or assisted listening devices, are asked to contact DRCOG at least 48 hours in advance of the meeting by calling (303) 480-6744.



ATTACHMENT A

MEETING SUMMARY REGIONAL TRANSPORTATION COMMITTEE Tuesday, March 15, 2016

MEMBERS PRESENT:

Shannon Gifford	Colorado Department of Transportation
Ed Peterson	Colorado Department of Transportation
Debra Perkins-Smith (Alternate)	Colorado Department of Transportation
Paul Jesaitis	Colorado Department of Transportation
Elise Jones (Chair)	Denver Regional Council of Governments
Douglas Rex (Alternate)	Denver Regional Council of Governments
Ron Rakowsky	Denver Regional Council of Governments
Bob Roth	Denver Regional Council of Governments
Ashley Stolzmann	Denver Regional Council of Governments
Ken Lloyd	Regional Air Quality Council
Bill Van Meter (Alternate)	Regional Transportation District
Ernest Archuleta (Alternate)	Regional Transportation District
Jeff Kullman	Other-Business Interests

Others: Rebecca White, CDOT; Aaron Bustow, FHWA; Hank Cary, Total Traffic & Weather Network

DRCOG Staff: Steve Cook, Todd Cottrell, Matthew Helfant, Robert Spotts, Casey Collins

Call to Order

Chair Elise Jones called the meeting to order at 8:34 a.m.

New DRCOG members, Bob Roth, City of Aurora; Jeff Walker, RTD; and alternate, Ernest Archuleta, RTD, were introduced.

Public Comment

Hank Cary, Operations Manager for Total Traffic & Weather Network in Denver, spoke on his company's traffic information reporting services (to radio stations, as well as online portals and in-dash navigation). He commented on Total Traffic's recent data-sharing collaboration with CDOT, and noted his company's interest in reaching out to other public agencies to work together on potential data-sharing efforts.

Summary of January 19 and January 26, 2016 Meetings

The summaries were accepted as written.

ACTION ITEMS

Discussion on 2015 Cycle 2 amendments to the 2040 Fiscally Constrained Regional Transportation Plan, along with the 2015 Cycle 2 Amendments to the Denver Southern Subarea 8-hour Ozone Conformity Determination and the 2015 Cycle 2 Amendments to the CO and PM10 Conformity Determination, concurrently.

Jacob Riger presented the proposed 2015 Cycle 2 amendments to the 2040 RTP, which are primarily modifications to projects already in the 2040 RTP. The proposed amendments were modeled and passed all pollutant emission tests. A public hearing was held on January 20, 2016 and one speaker provided oral/written testimony.

Sponsor	Project Location	Current RTP Project Description	Type of Change to the FC-2035-RTP	Model Network Staging Period
CDOT	<u>C-470 (New Managed Toll Express Lanes):</u> • EB: Wadsworth Blvd. to I-25	Advance eastbound segment (1 new lane from Wadsworth Blvd. to Platte Canyon Rd.) to 2015-2024 stage		2015 – 2024
CDOT	<u>I-70 (New Managed Lanes):</u> • I-25 to Chambers Rd. (1 new lane in each direction)	Change scope from 2 managed lanes in each direction (Brighton Blvd. to I-270) to 1 managed lane in each direction (I-25 to Chambers Rd.)		2015 – 2024
Commerce City	Pena Blvd./Tower Rd.	Not in 2040 RTP	Construct missing on-ramp to WB Pena Blvd.	2015 – 2024
Commerce City	Tower Rd.: Pena Blvd. to 104 th Ave.	Widen 2 to 6 lanes (2015-2024 stage)	Change widening to 2 to 4 lanes (2015-2024 stage); add widening to 4 to 6 lanes (2025-2034 stage)	2015 – 2024 2025 – 2034
E-470 Authority	E-470: Parker Rd. to Quincy Ave.	Widen 4 to 6 lanes (2025-2034 stage)	Advance to 2015-2024 stage	2015 – 2024
Jefferson County	<u>McIntyre St.:</u> • 44 th Ave. to 52nd Ave. • 52nd Ave. to 60th Ave.	Not in 2040 RTP	Add project: widen 2 to 4 lanes	2015 – 2024
Jefferson County	Quincy Ave.: C-470 to Simms St.	Widen 2 to 4 lanes (2025-2034 stage)	Advance to 2015-2024 stage	2015 – 2024
Wheat Ridge	Wadsworth Blvd.: 35 th Ave. to 48 th Ave.	Widen 4 to 6 lanes (2025-2034 stage)	Advance to 2015-2024 stage	2015 – 2024

There was no further discussion.

Ron Rakowsky MOVED to recommend to the Board of Directors the 2015 Cycle 2 amendments to the *2040 Fiscally Constrained Regional Transportation Plan*, along with the *2015 Cycle 2 Amendments to the Denver Southern Subarea 8-hour Ozone Conformity Determination* and the *2015 Cycle 2 Amendments to the CO and PM10 Conformity Determination*, concurrently. The motion was seconded and passed unanimously.

Discussion on amendments to the 2016-2021 Transportation Improvement Program (TIP).

Todd Cottrell presented the 3 amendments requested.

Sponsor	TIP ID	Proposed Amendment	
CDOT	2012-043	I-25/Arapahoe Rd Interchange Reconstruction	Move project into the current 2016-2021TIP. Add \$7.2 million RAMP funding. Adjusted prior funding to reflect prior spending. This is a requirement to bring the project to advertisement for construction.
Arapahoe Cty.	2012-087	Arapahoe Rd and Yosemite St Intersection Operational Improvements	Move project into current 2016-2021 TIP. This is a companion project to the above project (2012-043). Due to its proximity, CDOT plans to bring both projects to advertisement for construction at the same time.
CDOT	New Project	RoadX Pool	Create pool to fund 2 technologically innovative pilot projects (I-25 Managed Motorway and I-70 Connected Vehicles) with \$18.8 million in Transportation Commission contingency funding.

Ed Peterson MOVED to recommend to the Board of Directors the amendments to the 2016-2021 Transportation Improvement Program (TIP). The motion was seconded and passed unanimously.

INFORMATIONAL ITEMS

Discussion of 2016-2021 TIP Review White Paper.

Doug Rex presented a summary of the TIP Review White Paper. The white paper was requested by the Board in August 2015 to review the 2016-2021 TIP process. Per the Board's direction, a work group was formed to develop the document. The white paper was presented to the Board on February 17.

Recommendations made in the white paper include: develop a project selection process purpose statement for the TIP; further explore the regional/subregional dual project selection model; create a project selection process that places more emphasis on project benefits, overall value and return on investment; explore opportunities to exchange CDOT state funds with DRCOG federal funds; and evaluate off-the-top programs and projects.

The Board further directed the work group to continue exploration of the dual model and the recommendations made in the white paper, with no specific timeline assigned. The work group is expected to resume in April.

Discussion of draft Transit component of the Metro Vision Regional Transportation Plan (MVRTP).

Matthew Helfant presented the draft Transit document that will be incorporated into the new MVRTP. The Transit document addresses fixed route, rapid transit, and human service needs. It also serves as the federally-required Coordinated Transit Plan for the DRCOG region, and will be used to verify eligibility of projects funded through FTA's 5310 program.

Discussion of the 2016 DRCOG Federal Certification Review.

Aaron Bustow, FHWA, announced the public meeting to solicit public comment on the DRCOG Federal Certification Review, which will be held on March 28, 2016 at DRCOG at 5:00 p.m.

He gave an overview of the certification review by the FHWA Colorado Division and FTA Region 8 that is held every four years to certify the DRCOG transportation planning process. DRCOG staff submitted an in-depth written response to questions asked in the certification review packet. An FHWA desk review of the submission was completed, followed by an FHWA/FTA on-site visit to DRCOG on February 8. He noted the public comment period is currently underway and comments

are accepted until April 4. A final report is expected in summer of 2016 and a Certification Review Determination transmittal letter is expected before Oct. 18, 2016.

Comments:

- Debra Perkins-Smith, CDOT, noted cross-collaboration and joint work groups (CDOT and DRCOG) have been beneficial. She noted, as an example, that joint collaboration on freight planning efforts has helped stakeholder engagement, particularly to avoid overextending stakeholder participation.
- Ed Peterson, CDOT, felt there is a need to expand communications and joint planning efforts with CDOT's Transportation System Management & Operations (TSM&O) to maximize cost-effectiveness of the entire planning process. He commented there could be an expanded role for unifying (MPO and state) plans such as freight movement and multimodal transportation. He noted DRCOG has more robust transportation models that have benefited the statewide freight movement plan.
- Bill Van Meter, RTD, commented there have been beneficial regional discussions and engagement with local governments and planning partners at staff and policy level. He said it is always a challenge to engage more public involvement. He said RTD collaboration efforts with DRCOG staff on technical resources and with the travel demand modeling have been positive.

ADMINISTRATIVE ITEMS

Member Comment/Other Matters

Bill Van Meter announced the April 22 opening of the RTD's FasTracks A line to Denver International Airport. There will be a VIP party the night of April 21.

Doug Rex noted the 2016 DRCOG Annual Awards will be held at the new Westin DIA Hotel on Wednesday, April 27.

The meeting was adjourned at 9:37 a.m. The next scheduled meeting is April 19, 2016.

ATTACHMENT B

To: Chair and Members of the Regional Transportation Committee

From: Todd Cottrell, Senior Transportation Planner
303 480-6737 or tcottrell@drcog.org

Meeting Date	Agenda Category	Agenda Item #
July 19, 2016	Action	4

SUBJECT

DRCOG's transportation planning process allows for Board-approved amendments to the current Transportation Improvement Program (TIP), taking place on an as-needed basis. Typically, these amendments involve adding new projects or adjusting existing projects and do not impact funding for other projects in the TIP.

PROPOSED ACTION/RECOMMENDATIONS

DRCOG staff recommends approval of the proposed amendments because they comply with the Board-adopted [TIP Amendment Policy](#).

ACTION BY OTHERS

[May 23, 2016](#) TAC recommended approval.

SUMMARY

The proposed amendments are organized into two separate sets of amendments.

1. DRCOG "Second Commitment in Principle" to FasTracks Amendments

In July 2008, the DRCOG Board approved a "second commitment in principle" (SCIP) to FasTracks corridors in which specific dollar amounts were identified for eleven corridors (see Attachment 1). TIP funding was made available from FY2012 through FY2019.

To date, seven of the eleven corridors have programmed their full SCIP funding by reaching a corridor consensus on projects and submitting requests to DRCOG to program the funds. Of the remaining four corridors, three corridors have yet to request any allocation, while the Northwest Corridor received a partial SCIP distribution in 2012.

In early May 2016, the Northwest Corridor partners submitted a request for another partial distribution (\$5.058 million) of its remaining \$6.803 million SCIP funding to go to four new projects (Attachment 2) as part of the TIP policy amendments. (Note: Per the adopting resolution, "...*jointly-endorsed consensus requests may be submitted to DRCOG at any time and the Board of Directors, through the MPO process, will act on them as Policy Amendments to the then-adopted Transportation Improvement Program at its next scheduled opportunity.*").

The projects described below and in Attachment 3 are proposed to be amended into the 2016-2021 TIP. Highlighted items in the attachment depict proposed changes. These projects are in conformance with the State Implementation Plan for Air Quality and are described as follows:

- **2012-010: DRCOG Second Commitment to FasTracks Pool**

Funds will be removed from the pool to reflect the Northwest Corridor Partners' partial drawdown of their allocated funds. Fund fiscal years will be changed to reflect actual year of expenditure.

- **New Project: City of Boulder Quiet Zones**
 - The project will construct quiet zones along the BNSF corridor in the City of Boulder using funds from TIPID 2012-010 DRCOG Second Commitment to FasTracks Pool as agreed upon by the Northwest Corridor Partners.

- **New Project: Boulder County Quiet Zones**
 - The project will construct quiet zones along the BNSF corridor in Boulder County using funds from TIPID 2012-010 DRCOG Second Commitment to FasTracks Pool as agreed upon by the Northwest Corridor Partners.

- **New Project: Longmont Rail Road Bridge Replacement**
 - The project will replace a deficient BNSF bridge that is part of the FasTracks system within the City of Longmont using funds from TIPID 2012-010 DRCOG Second Commitment to FasTracks Pool as agreed upon by the Northwest Corridor Partners.

- **New Project: Louisville-Lafayette Quiet Zones**
 - The project will construct quiet zones along the BNSF corridor in the Cities of Louisville and Lafayette using funds from TIPID 2012-010 DRCOG Second Commitment to FasTracks Pool as agreed upon by the Northwest Corridor Partners.

2. CDOT Region 4 Amendments

CDOT currently operates its budget, including the Statewide Transportation Improvement Program (STIP), with a cash management method. The cash management method programs funding based on year of expenditure, versus the TIP which depicts funding in the year it is programmed.

CDOT's budget method change is recent and created some confusion when CDOT transferred some Region 4 pool projects from the 2012-2017 TIP to the new 2016-2021 TIP. The result was a duplication of projects in the 2016-2021 TIP pools and the Rollover List. The Rollover List depicts TIP projects previously shown in the TIP that are still open to funding charges.

The amendments listed below clarify this situation by removing the duplicated projects from the pools. It assures pool project funding listed in the TIP is based on the year it was programmed, not on year of expenditure. Since the pool projects being removed

were originally programmed in FY2015 or earlier, they already reside in their respective pool in the 2012-2017 TIP.

Finally, the TIP project Rollover List was updated to include full descriptions of included projects.

The projects described below and in Attachment 3 are proposed to be amended into the 2016-2021 TIP. Highlighted items in the attachment depict proposed changes. These projects also are in conformance with the State Implementation Plan for Air Quality.

- **2007-095: Region 4 Surface Treatment Pool**
Update Previous Funding column and remove four projects from pool. Removed pool projects will be individually depicted in the Rollover List and do not need to be duplicated in the current TIP.

- **2008-106: Region 4 FASTER Transit Pool**
Remove all projects from pool. Pool projects will be individually depicted in the Rollover List and do not need to be duplicated in the current TIP.

- **2012-109: Region 4 RAMP Project Pool**
Remove all projects from pool. Pool projects will be individually depicted in the Rollover List and do not need to be duplicated in the current TIP.

- **Project Rollover List**
Revised Rollover List to include full project descriptions.

PREVIOUS DISCUSSIONS/ACTIONS

N/A

PROPOSED MOTION

Move to recommend to the Board of Directors the attached amendments to the *2016-2021 Transportation Improvement Program (TIP)*.

ATTACHMENTS

1. DRCOG Board Resolution (July 2008): Second Commitment in Principle
2. Northwest Corridor Partners' Packet
3. Proposed TIP Amendments

Link: [Rollover List \(May 2016\)](#)

ADDITIONAL INFORMATION

If you need additional information, please contact Todd Cottrell, Senior Transportation Planner, Transportation Planning and Operations at (303) 480-6737 or tcottrell@drcog.org.

ATTACHMENT 1

DENVER REGIONAL COUNCIL OF GOVERNMENTS

STATE OF COLORADO

BOARD OF DIRECTORS

RESOLUTION NO. 20, 2008

A RESOLUTION APPROVING ADDITIONAL COMMITMENT IN PRINCIPLE OF TRANSPORTATION IMPROVEMENT PROGRAM FUNDING TO FASTRACKS CORRIDORS

WHEREAS, the Denver Regional Council of Governments, as the Metropolitan Planning Organization, is responsible for the operation and maintenance of the continuing planning process designed to prepare and adopt transportation plans and programs; and

WHEREAS, the transportation planning process within the Denver region is carried out by the Denver Regional Council of Governments (DRCOG) through a cooperative agreement with the Regional Transportation District (RTD) and the Colorado Department of Transportation (CDOT); and

WHEREAS, Senate Bill 90-208 (32-9-107.7 CRS), enacted by the Colorado General Assembly, requires the Metropolitan Planning Organization (MPO) to approve the specific technology and method of financing of regional fixed guideway mass transit projects proposed by the RTD before any action relating to construction may take place, and;

WHEREAS, the RTD submitted the FasTracks Plan to DRCOG for its review and approval pursuant to section 32-9-107.7 CRS; and

WHEREAS, the Board of Directors, on April 21, 2004, approved each component part and corridor of the FasTracks Plan, as well as the system as a whole, including the financing plan, in resolution number 18, 2004, pursuant to section 32-9-107.7 CRS; and

WHEREAS, the financing plan included \$60 million of potential federal funding made available to DRCOG for allocation to FasTracks, and, while resolution number 18, 2004 did not specifically program such funding to FasTracks, the resolution has been considered to establish a commitment in principle to this level of funding; and

WHEREAS, the Board of Directors, on March 19, 2008, adopted the 2008-2013 Transportation Improvement Program in resolution number 5, 2008 that programmed \$28 million of this \$60 million commitment in principle to FasTracks from fiscal year 2008 through fiscal year 2011, and

WHEREAS, the Board of Directors approval of the RTD FasTracks Plan on April 21, 2004 was subject to a number of understandings, which included the conduct of an annual review through the MPO process to identify any substantial changes in various elements of the FasTracks Plan; and

WHEREAS, the RTD described progress thus far on the FasTracks Plan and proposed certain changes in the document *RTD Annual Report to DRCOG on FasTracks* (December 2007, with Addenda and Errata dated May 1, 2008), which it submitted to DRCOG for review; and

ATTACHMENT 1

A RESOLUTION APPROVING ADDITIONAL COMMITMENT IN PRINCIPLE OF
TRANSPORTATION IMPROVEMENT PROGRAM FUNDING TO FASTRACKS
CORRIDORS

Resolution No. 20, 2008

Page 2

WHEREAS, the 2007 Annual Report was used as a means to convey a request for additional funding support by DRCOG to a project in the FasTracks Plan; and

WHEREAS, the Transportation Advisory Committee and the Regional Transportation Committee have recommended that the Board of Directors approve additional funding support in principle as described herein.

NOW, THEREFORE, BE IT RESOLVED that, the Board of Directors of the Denver Regional Council of Governments hereby approves an additional \$60 million of potential federal funding available to DRCOG for allocation to be directed to FasTracks corridors.

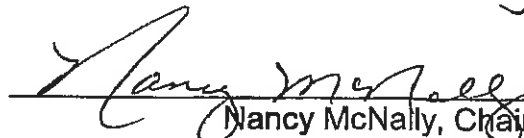
BE IT FURTHER RESOLVED that, DRCOG would endeavor to fulfill this additional commitment in principle over the eight-year period fiscal year 2012 to fiscal year 2019, with RTD up fronting the funding using advance construction processes for subsequent federal reimbursement, with not more than \$8 million per year of the initial commitment in principle plus additional commitment in principle coming from federal Congestion Mitigation/Air Quality funds.

BE IT FURTHER RESOLVED that, the funds are to be allocated to the corridors of the FasTracks Plan in the amount shown in the attached table.

BE IT FURTHER RESOLVED that, funding requests pursuant to this allocation must be submitted jointly by RTD, all local governments through which the corridor runs, and CDOT if the corridor uses CDOT right-of-way, reflecting a corridor consensus; must be eligible for federal funding; and must not exceed the corridor amount allocated.

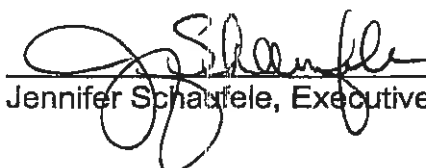
BE IT FURTHER RESOLVED that, jointly-endorsed consensus requests may be submitted to DRCOG at any time and the Board of Directors through the MPO process will act on them as Policy Amendments to the then-adopted Transportation Improvement Program at its next scheduled opportunity.

RESOLVED, PASSED AND ADOPTED this 16th day of July, 2008 at Denver, Colorado.



Nancy McNally, Chair
Board of Directors
Denver Regional Council of Governments

ATTEST:



Jennifer Schauffele, Executive Director

ATTACHMENT 1

Corridor Allocation

Corridor	Corridor Name	Capital Cost - RTD 2007 Financial Plan Table 2		Allocation to Each Corridor in Proportion to Corridor Capital Cost—\$60 million
		\$ (million)	% capital cost	\$ (million)
1	36 BRT Phase 1 + 2	\$235.6	4.6	\$2.755
2	Northwest Rail	\$684.4	13.3	\$8.003
3	North Metro	\$637.2	12.4	\$7.451
4	East	\$1,141.6	22.2	\$13.350
5	I-225	\$620.0	12.1	\$7.250
6	Southeast Extension	\$164.9	3.2	\$1.928
7	Southwest Extension	\$178.6	3.5	\$2.089
8	West	\$634.7	12.4	\$7.422
9	Gold Line	\$552.5	10.8	\$6.461
10	Central Corridor Extension	\$65.9	1.3	\$0.771
11	Denver Union Station	\$215.4	4.2	\$2.519
	Total	\$5,130.8	100.0	\$60.000

12	Maintenance Facilities + Corridor Upgrades + Other	\$952.2
		\$6,083.0

"Corridor" 12 not considered in allocation.

ATTACHMENT 2

May 3, 2016

Board of Directors
Denver Regional Council of Governments
1290 Broadway, Suite 700
Denver, CO 80203-5606

Dear Board Members:

The Northwest Corridor Partners are pleased to inform you that we have reached consensus on the use of the \$5.058 of the remaining \$6.803 million in Transportation Improvement Program (TIP) funding allocated to FasTracks and the Northwest Rail project per Denver Regional Council of Governments Resolution Number 20, of 2008. The Northwest Corridor Partners consist of Adams County, Boulder County, Jefferson County, the City and County of Broomfield, the City and County of Denver, the City of Arvada, the City of Boulder, the City of Lafayette, the City of Longmont, the City of Louisville, the Town of Superior, the City of Westminster, the Colorado Department of Transportation, and the Regional Transportation District

The Northwest Corridor Partners have agreed to utilize these dollars to construct the supplemental safety measures necessary to implement quiet zones, and other improvements that are consistent with final implementation of Northwest Rail. The allocation among communities is an equitable allocation based on the average of number of quiet zones per community.

Boulder	\$1,055,951
Boulder County	\$1,389,410
Lafayette	\$611,340
Longmont	\$1,055,951
Louisville	<u>\$944,799</u>
	\$5,057,539

The communities identified above may seek the programming of funds/timing based on their individual needs. Additionally, communities may work together to combine allocations to best address noise impacts and funding requirements.

The cities of Boulder, Lafayette, Longmont, Louisville and Boulder County will be pursuing funding in years 2017, 2018 and 2019. Those amounts equal the following and are described with more detail on the attached project descriptions for each individual project:

ATTACHMENT 2


2017 Funds:	\$890,000
2018 Funds:	\$3,111,539
<u>2019 Funds:</u>	<u>\$1,056,000</u>
Total Funds Requested 2017-2019	\$5,057,539

The remaining balance of \$1,745,461 (rounded) to be identified by Adams County, Broomfield and Westminster will be allocated by the Northwest Corridor Partners in the future through a similar letter.

Thank you for your consideration of this request and for your support of this FasTracks project.

Sincerely,

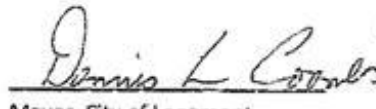

Steve O'Donizio, Chair
Adams County Commissioner



Suzanne Jones,
Mayor, City of Boulder


Eric Jones
Boulder County Commissioner


Randall C. Johnson
Mayor, City and County of Broomfield

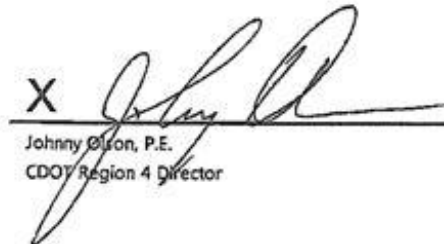

Mayor, City of Lafayette

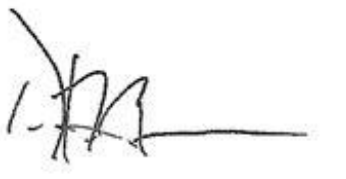

Dennis L. Corral
Mayor, City of Longmont


Mayor, City of Louisville


Mayor, City of Westminster


CDOT Region 1 Director

X 
Johnny Olson, P.E.
CDOT Region 4 Director


RTD General Manager and CEO

ATTACHMENT 2

Project Scope: Quiet Zone Implementation, City of Boulder (map attached)

The project implements railroad crossing Quiet Zone improvements along the Burlington Northern Santa Fe (BNSF) railroad corridor to address train horn noise impacting the Boulder community. There are a total of nine crossings, five within the City of Boulder and four adjacent to the city (see attached map). For the crossings adjacent to the city limits, it is anticipated that these Quiet Zones would be implemented in partnership with Boulder County. Work includes updating the city's Quiet Zone plan as needed to reflect any changes in federal Quiet Zone requirements and cost estimates since 2014, public outreach, design, field diagnostic review, Federal Railroad Administration (FRA) and Colorado Public Utilities Commission (PUC) application and approval processes, as well as construction of the necessary improvements to achieve quiet zone status for selected crossings. The crossings will be evaluated and prioritized based on feasibility, estimated benefit, and cost. Selected crossings will be implemented within the identified budget and a phasing plan developed for any remaining crossings.

Affected Area: Residents, employers/employees, and visitors within the City of Boulder as well as unincorporated Boulder County.

Establishment of quiet zones along this stretch may include the following improvements, as needed:

- Raised medians / Channelization devices
- Flashing lights
- Constant Warning Time (CWT) Circuitry and bungalow
- Gates with 4-Quad gate system
- MUTCD compliant warning signs
- Median flashers
- Detached sidewalk
- Railroad crossing surface replacement
- Wayside horns
- Other Supplemental Safety Measures (SSMs) and Alternative Safety Measures (ASMs) as approved by the FRA Quiet Zone regulations.

Candidate Quiet Zones:

1. 63rd Street crossing, north of Arapahoe (SH7)*
2. 55th Street crossing, north of Arapahoe (SH7)*
3. Pearl Parkway crossing*
4. Valmont Road crossing*
5. 47th Street crossing, east of Foothills Parkway (SH*)
6. Independence Road, east of Diagonal Highway (SH119)**
7. Jay Road crossing, east of Diagonal Highway (SH119)**
8. 55th Street crossing, south of Diagonal Highway (SH119)**
9. 63rd Street crossing, south of Diagonal Highway (SH119)*/** (joint city/county roadway jurisdiction)

“*” denotes City of Boulder roadway

“**” denotes Boulder County roadway

ATTACHMENT 2

Schedule:

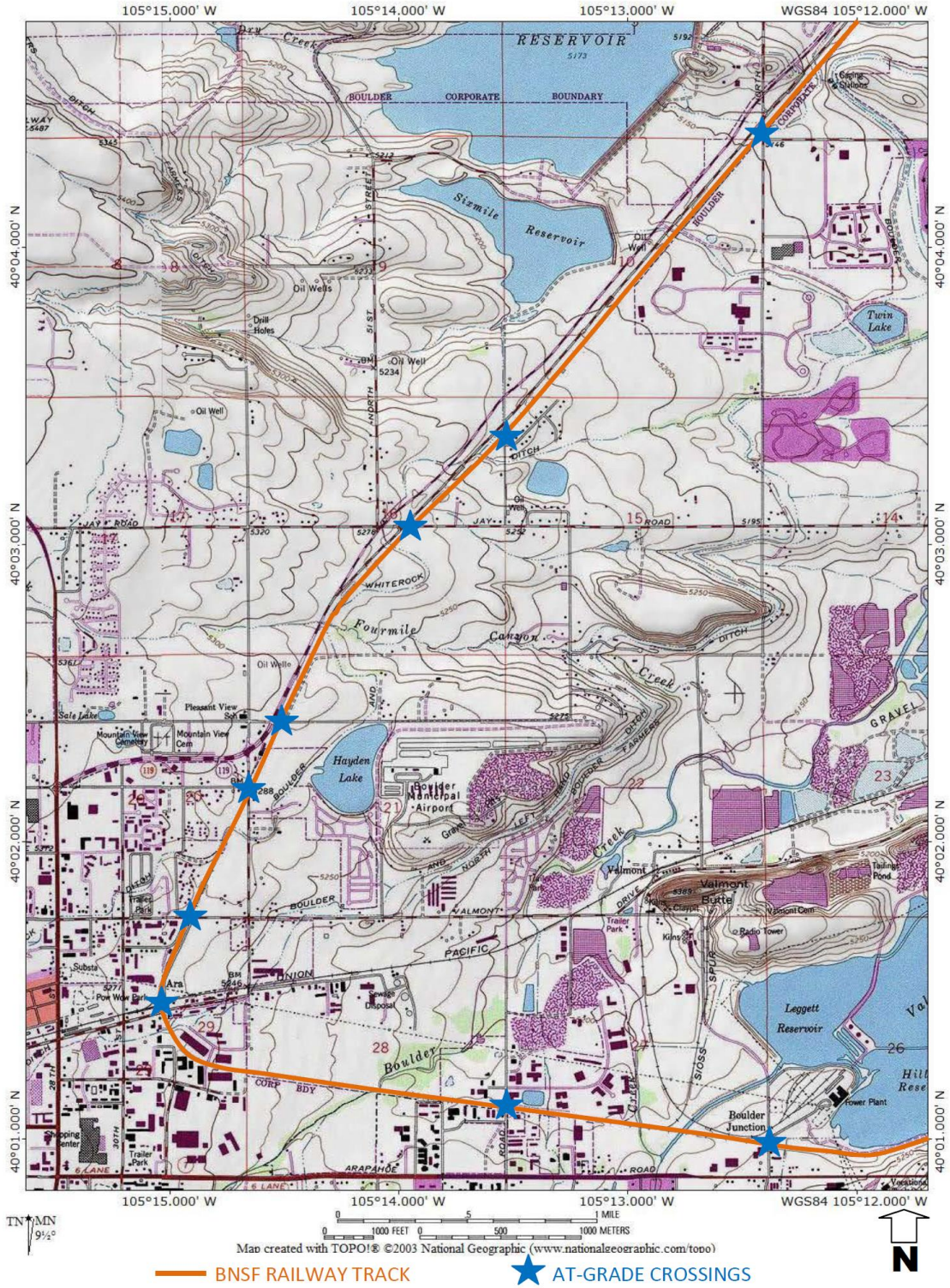
- **2017 (Begins Oct 1, 2016):** Planning, prioritization/selection of crossings, final design, quiet zone applications submitted to FRA/PUC/BNSF
- **2018 (Begins Oct 1, 2017):** Construction of quiet zone crossing improvements (Timing contingent on BNSF/PUC/FRA review, anticipate construction advertised by October 2018, completion by end of 2019)

Funding Request

	FY 2017	FY 2018	TOTAL
FED	\$528,000	\$528,000	\$1,056,000 (80%)
STATE			
LOCAL	\$132,000	\$132,000	\$264,000 (20%)
TOTAL	\$660,000	\$660,000	\$1,320,000 (100%)

ATTACHMENT 2

City of Boulder: Railroad Quiet Zone Locations



ATTACHMENT 2

Project Scope: Quiet Zone Implementation, Unincorporated Boulder County (map attached)

The project implements Quiet Zone improvements identified in the RTD NW Rail EIS on crossings adjacent to SH119 along the BNSF line in unincorporated Boulder County between the city of Boulder and Longmont (see attached map). Boulder County intends to conduct a study using County funds in advance of completing a contract with CDOT for project design and construction. The study will prioritize the projects, identify necessary improvements, develop costs estimates, and conduct field diagnostic reviews. Using RTD FasTracks Quiet Zone funding Boulder County will conduct design and construction. This includes design, PUC approval, construction of quiet zone improvements on selected crossings, as well as submission of a written Notice of Quiet Zone Establishment. The crossings will be selected based on feasibility, estimated benefit, and cost, with high priority crossings implemented within the identified budget.

Affected County: Boulder County. 9,400 households are within 1 mile of the candidate crossings. Depending on the crossings selected, City of Boulder, unincorporated county (including the unincorporated residents in the communities of Niwot and Gunbarrel) may benefit from the quiet zones.

Establishment of quiet zones along this stretch may include the following improvements, as needed:

- Raised medians / Channelization devices
- Flashing lights
- Constant Warning Time (CWT) Circuitry and bungalow
- Gates with 4-Quad gate system
- MUTCD compliant warning signs
- Median flashers
- Detached sidewalk
- Railroad crossing surface replacement

Candidate Crossings.

1. **Niwot Areas Crossings:** North 83rd Street/ 2nd Ave/Niwot Road/Monarch Road
2. **Gunbarrel Area Crossings:** 55th Street/Jay Road (Coord. with City of Boulder re: 63rd)
3. **North Boulder Crossings:** 55th Street/Jay Road/Independence Road (Coord. with City of Boulder re: Valmont/Bike/Ped Crossings)

Schedule:

- **Pre-contract-** Complete a contract with CDOT for the Quiet Zone project. Create RFP for consultant services to study quiet zone projects. Conduct a study of the candidate crossings to prioritize and identify the crossings that will be constructed for this project. The study includes the field diagnostic review to inform the necessary Quiet Zone improvements, project costs for each intersection, and Quiet Zone crossing prioritization. The during the field diagnostic review a team will be assembled with representatives from the Colorado Public Utilities Commission and BNSF to help identify the necessary Quiet Zone enhancements at each intersection.

ATTACHMENT 2

- **Phase I: Design**- This portion of this project will include project design for priority crossings. This will require coordination with the PUC during the design to review designs and approve the Quiet Zone application.
- **Phase II: Construction**- This portion of the project will include construction of the selected crossings. This will require coordination with the railroad for construction, installation, and maintenance of the Quiet Zone improvements. This will lead ultimately to the preparation and submission of a written Notice of Quiet Zone Establishment.

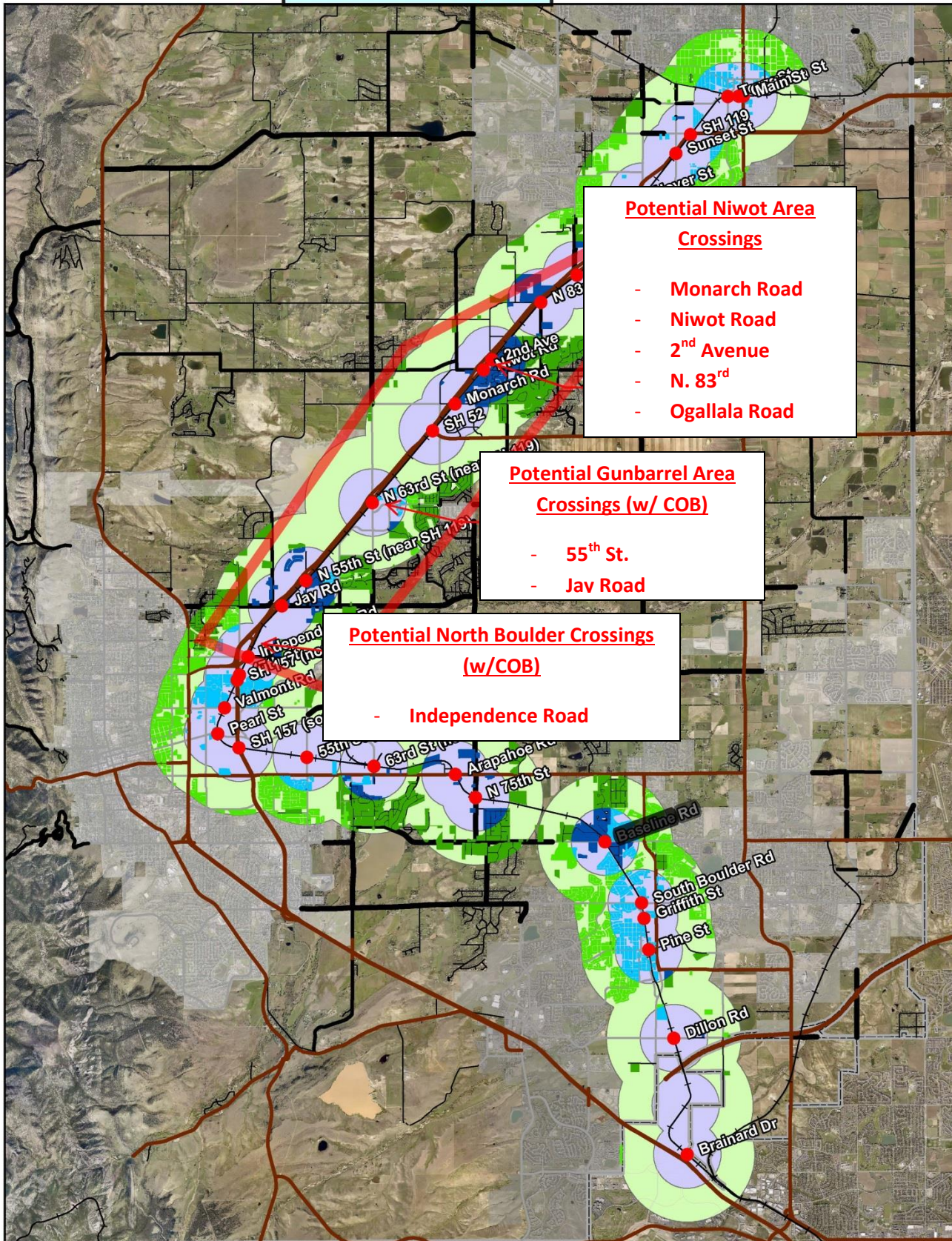
Funding Request

		Year	Federal	State	Local	Subtotal
Boulder County Quiet Zone	Design	FY 2017	\$ 136,000	\$ -	\$ 34,000	\$ 170,000
	Construction	FY 2018	\$ 1,253,401	\$ -	\$ 313,350	\$ 1,566,751
		Total	\$ 1,389,401	\$ -	\$ 347,350	\$ 1,736,751

** Numbers to be finalized with 100% design documents.

ATTACHMENT 2

SH119 Quiet Zone Options



ATTACHMENT 2

Project Scope: FasTracks railroad bridge replacement for future rail and removal of station area from 100-year floodplain--Longmont, CO (map below).

The project replaces a deficient BNSF railroad bridge that is part of the FasTracks system at the St. Vrain Creek between Ken Pratt Boulevard and Main Street. The 1st and Main station area along the Northwest Commuter Rail line is to be planned and built in the next 3-5 years, so this bridge replacement is critical to its construction and operation.

The construction will include a new, expanded bridge deck to convey the 100-year storm event as well as 2-3 tracks for rail. The existing/adjacent bicycle/pedestrian bridge is to be incorporated into the overall design of the rail bridge as it will not meet the new channel width recommended to carry the 100-year storm event through this section of the City.

The BNSF will conduct design, field diagnostic review, PUC application /approval, as well as construction of the necessary improvements.

Affected communities:

Longmont, CO

Affected County:

Boulder County

	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>Totals</u>
FED	\$0	\$0	\$1,056,000	\$1,056,000 (35%)
STATE				
<u>LOCAL</u>	<u>\$100,000</u>	<u>\$100,000</u>	<u>\$1,744,000</u>	<u>\$1,944,000 (65%)</u>
TOTAL	\$100,000	\$100,000	\$2,800,000	\$3,000,000 (100%)

* Numbers to be finalized with 100% design documents.

ATTACHMENT 2

Project Scope: Quiet Zone Implementation, Baseline Rd. in Lafayette, CO to Pine Street in Louisville, CO (map below).

The project completes Quiet Zone establishment from Baseline Road in Lafayette, CO to Pine Street along in Louisville, CO on the BNSF line. This includes improvements at 4 highway rail grade crossings including Baseline Rd. in Lafayette, South Boulder Rd., Griffith St. and Pine St. in Louisville. Establishment of quiet zones along this stretch may include the following improvements:

- Raised medians
- Flashing lights
- Constant Warning Time (CWT) Circuitry and bungalow
- 4-Quad gate system
- Gates
- Channelization devices
- MUTCD compliant warning signs
- Median flashers
- Detached sidewalk
- Railroad crossing surface panels

Additionally, work may include design, field diagnostic review, PUC application and approval as well as construction of the necessary improvements to achieve quiet zone status along this stretch of BNSF line.

Affected communities:

Lafayette, CO
Louisville, CO

Affected County:

Boulder County

	FY 2017	FY 2018
FED	\$226,000	\$1,330,138
STATE		
<u>LOCAL</u>	<u>\$56,500</u>	<u>\$332,534</u>
TOTAL	\$282,500	\$1,662,672


** Numbers to be finalized with 100% design documents.

ATTACHMENT 2

Louisville-Lafayette Colorado BNSF Railway Crossings Map



LEGEND

 PUBLIC ROADWAY CROSSING

2012-010: Move funds between fiscal years, transfer funds to new projects, and update scope to reflect funding drawdown by Northwest Corridor Partners.

Existing

Title: **DRCOG Second Commitment to FasTracks Pool**

Project Type: **Transit Operational Improvements**

TIP-ID: **2012-010**

STIP-ID:

Open to Public:

Sponsor: **DRCOG**

Project Scope

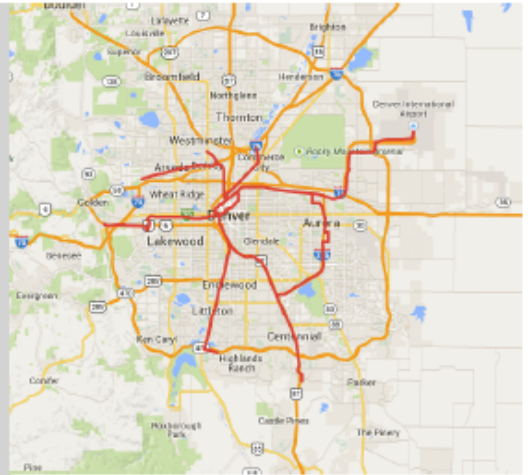
Set aside to fund second commitment in principle to FasTracks corridors not yet allocated. Individual projects will be TIP'd upon approval of Policy Amendments per the process and requirements of DRCOG Resolution 20-2008 (July, 2008).

Corridor projects previously approved using second commitment funds include:

- West Corridor (TIP ID 2007-042)- July 2010, \$7,422,000
- US-36 Corridor (TIP ID 2008-114)- Feb 2011, \$2,755,000
- Denver Union Station (TIP ID 2007-057)- July 2010, \$2,519,000
- East Corridor (TIP ID 2008-111)- Nov 2011, \$13,350,000.
- Gold Corridor (TIP ID 2008-111)- May 2012, \$6,461,000.
- Northwest Corridor (TIP ID 2007-050)- May 2012, \$1,200,000.
- North Metro Corridor (TIP ID 2007-055)- May 2012, \$7,451,000.
- I-225 Corridor (TIP ID 2007-056)- July 2012, \$7,250,000.

Remaining allocations include:

- Northwest Corridor \$6,803,000
- Southeast Extension \$1,928,000
- Southwest Extension \$2,089,000
- Central Corridor \$771,000



Affected County(ies)

Regional

Amounts in \$1,000s	Prior Funding	FY16	FY17	FY18	FY19	FY20-21	Future Funding	Total Funding
Federal (CMAQ)		\$4,073	\$0	\$0	\$0	\$0		
Federal (STP-M)		\$6,518	\$1,000	\$0	\$0	\$0		
State		\$0	\$0	\$0	\$0	\$0		
Local		\$2,648	\$250	\$0	\$0	\$0		
Total	\$0	\$13,239	\$1,250	\$0	\$0	\$0	\$0	\$14,489

Revised

Title: **DRCOG Second Commitment to FasTracks Pool**

Project Type: **Transit Operational Improvements**

TIP-ID: **2012-010**

STIP-ID:

Open to Public:

Sponsor: **DRCOG**

Project Scope

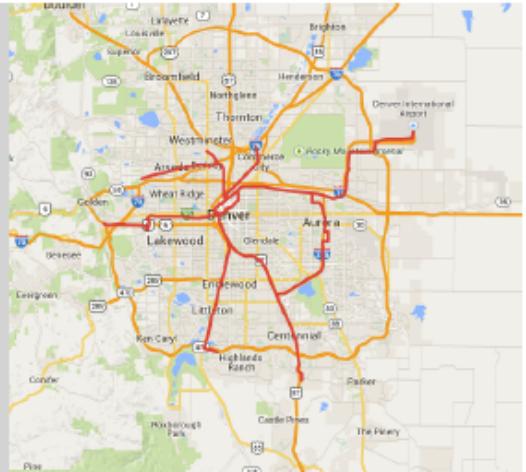
Set aside to fund second commitment in principle to FasTracks corridors not yet allocated. Individual projects will be TIP'd upon approval of Policy Amendments per the process and requirements of DRCOG Resolution 20-2008 (July, 2008).

Corridor projects previously approved using second commitment funds include:

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- Denver Union Station (TIP ID 2007-057)- July 2010, \$2,519,000
- East Corridor (TIP ID 2008-111)- Nov 2011, \$13,350,000.
- Gold Corridor (TIP ID 2008-111)- May 2012, \$6,461,000.
- Northwest Corridor (TIP ID 2007-050)- May 2012, \$1,200,000, **June 2016, \$5,058,000.**
- North Metro Corridor (TIP ID 2007-055)- May 2012, \$7,451,000.
- I-225 Corridor (TIP ID 2007-056)- July 2012, \$7,250,000.

Remaining allocations include:

- Northwest Corridor **\$1,746,000**
- Southeast Extension \$1,928,000
- Southwest Extension \$2,089,000
- Central Corridor \$771,000



Affected County(ies)

Regional

Amounts in \$1,000s	Prior Funding	FY16	FY17	FY18	FY19	FY20-21	Future Funding	Total Funding
Federal (CMAQ)		\$0	\$0	\$72	\$0	\$0		
Federal (STP-M)		\$0	\$0	\$6,462	\$0	\$0		
State		\$0	\$0	\$0	\$0	\$0		
Local		\$0	\$0	\$1,634	\$0	\$0		
Total	\$0	\$0	\$0	\$8,168	\$0	\$0	\$0	\$8,168

Request: Create new project using Second Commitment to FasTracks funding as requested by Northwest Corridor Partners

New Project

Title: **City of Boulder Quiet Zones**

Project Type: **Safety**

TIP-ID: **Request**

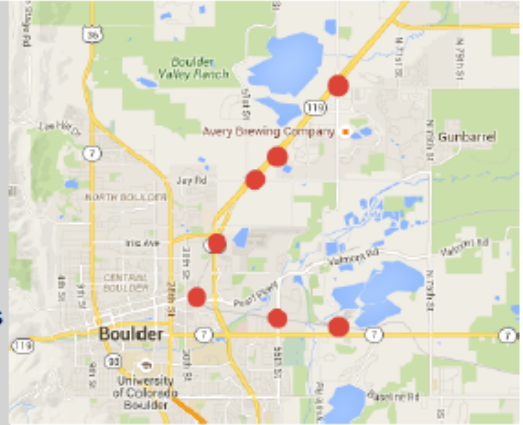
STIP-ID:

Open to Public: **2019**

Sponsor: **Boulder**

Project Scope

The project implements railroad crossing Quiet Zone improvements along the Burlington Northern Santa Fe (BNSF) railroad corridor to address train horn noise. There are a total of nine crossings, five within the City of Boulder and four adjacent to the city. Work includes updating the city's Quiet Zone plan as needed to reflect any changes in federal Quiet Zone requirements and cost estimates since 2014, public outreach, design, field diagnostic review, Federal Railroad Administration (FRA) and Colorado Public Utilities Commission (PUC) application and approval processes, as well as construction of the necessary improvements to achieve quiet zone status for selected crossings. The crossings will be evaluated and prioritized based on feasibility, estimated benefit, and cost. Selected crossings will be implemented within the identified budget and a phasing plan developed for any remaining crossings.



Affected County(ies)	Project Phases	
Boulder	Year	Phase
	2017	Initiate Design
	2018	Initiate Construction

Amounts in \$1,000s	Prior Funding	FY16	FY17	FY18	FY19	FY20-21	Future Funding	Total Funding
Federal (CMAQ)		\$0	\$528	\$528	\$0	\$0		
State		\$0	\$0	\$0	\$0	\$0		
Local		\$0	\$132	\$132	\$0	\$0		
Total	\$0	\$0	\$660	\$660	\$0	\$0	\$0	\$1,320

Request: Create new project using Second Commitment to FasTracks funding as requested by Northwest Corridor Partners

New Project

Title: **Boulder County Quiet Zones**

Project Type: **Safety**

TIP-ID: **Request**

STIP-ID:

Open to Public: **2019**

Sponsor: **Boulder County**

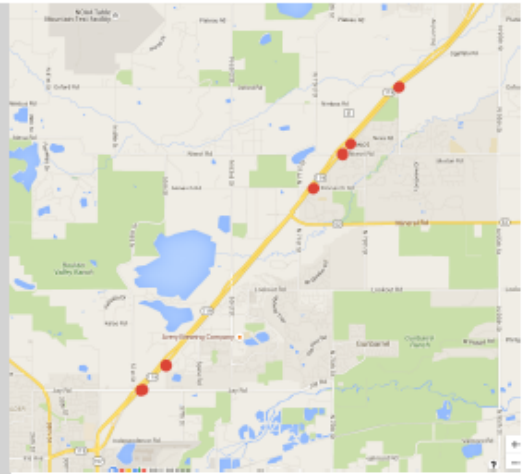
Project Scope

The project constructs Quiet Zone improvements identified in the RTD NW Rail EIS on crossings adjacent to SH119 along the BNSF line in unincorporated Boulder County between the city of Boulder and Longmont. Project elements include design, PUC approval, construction of quiet zone improvements on selected crossings, as well as submission of a written Notice of Quiet Zone Establishment. The crossings will be selected based on feasibility, estimated benefit, and cost, with high priority crossings implemented within the identified budget.

Local funds will study the locations to prioritize locations, identify necessary improvements, develop cost estimates, and conduct field diagnostic reviews in advance of this project.

Establishments of quiet zones along this stretch may include the following improvements:

- Raised medians / Channelization devices
- Flashing lights
- Constant Warning Time (CWT) Circuitry and bungalow
- Gates with 4-Quad gate system
- MUTCD compliant warning signs
- Median flashers
- Detached sidewalk
- Railroad crossing surface replacement



Affected County(ies)	Project Phases	
Boulder	Year	Phase
	2017	Initiate Design
	2018	Initiate Construction

Amounts in \$1,000s	Prior Funding	FY16	FY17	FY18	FY19	FY20-21	Future Funding	Total Funding
Federal (CMAQ)		\$0	\$136	\$1,253	\$0	\$0		
State		\$0	\$0	\$0	\$0	\$0		
Local		\$0	\$34	\$313	\$0	\$0		
Total	\$0	\$0	\$170	\$1,566	\$0	\$0	\$0	\$1,736

Request: Create new project using Second Commitment to FasTracks funding as requested by Northwest Corridor Partners

New Project

Title: **Longmont Rail Road Bridge Replacement**

Project Type: **Safety**

TIP-ID: **Request**

STIP-ID:

Open to Public: **2020**

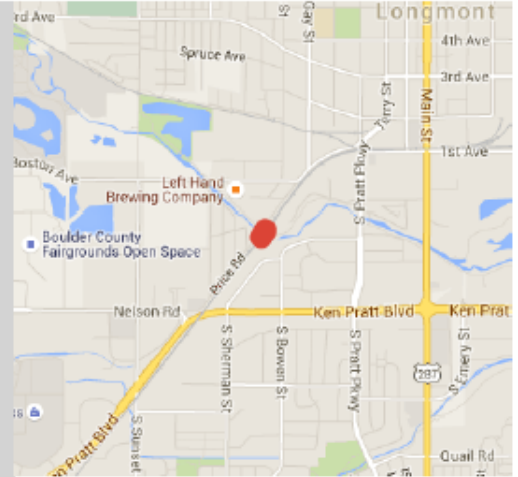
Sponsor: **Longmont**

Project Scope

The project replaces a deficient BNSF railroad bridge that is part of the FasTracks system at the St. Vrain Creek between Ken Pratt Blvd. and Main St. The 1st and Main station area along the Northwest Commuter Rail line is to be planned and built in the next 3-5 years, so this bridge replacement is critical to its construction and operation.

The construction will include a new, expanded bridge deck to convey the 100-year storm event as well as 2-3 tracks for rail. The existing/adjacent bicycle/pedestrian bridge is to be incorporated into the overall design of the rail bridge as it will not meet the new channel width recommended to carry the 100-year storm event through this section of the City.

The BNSF will conduct design, field diagnostic review, PUC application /approval, as well as construction of the necessary improvements.



Affected County(ies)	Project Phases	
Boulder	Year	Phase
	2019	Initiate Construction

Amounts in \$1,000s	Prior Funding	FY16	FY17	FY18	FY19	FY20-21	Future Funding	Total Funding
Federal (STP-M)		\$0	\$0	\$0	\$1,056	\$0		
State		\$0	\$0	\$0	\$0	\$0		
Local		\$0	\$100	\$100	\$1,744	\$0		
Total	\$0	\$0	\$100	\$100	\$2,800	\$0	\$0	\$3,000

Request: Create new project using Second Commitment to FasTracks funding as requested by Northwest Corridor Partners

New Project

Title: **Louisville-Lafayette Quiet Zones**

Project Type: **Safety**

TIP-ID: **Request**

STIP-ID:

Open to Public: **2019**

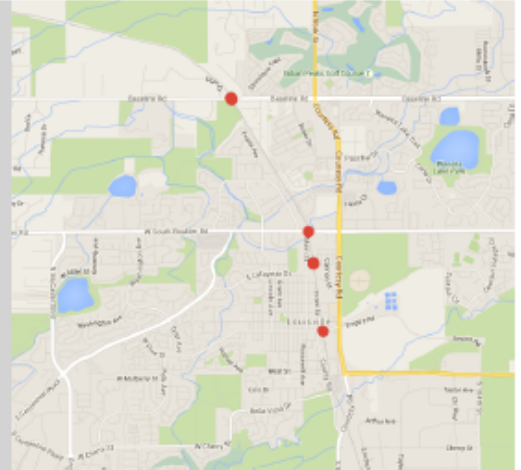
Sponsor: **Louisville**

Project Scope

The project completes Quiet Zone establishment from Baseline Rd. in Lafayette to Pine St. in Louisville on the BNSF line, and includes improvements at 4 highway rail grade crossings including Baseline Rd., South Boulder Rd., Griffith St. and Pine St. Establishment of quiet zones along this stretch may include the following improvements:

- Raised medians
- Flashing lights
- Constant Warning Time (CWT) Circuitry and bungalow
- 4-Quad gate system
- Gates
- Channelization devices
- MUTCD compliant warning signs
- Median flashers
- Detached sidewalk
- Railroad crossing surface panels

Additionally, work will include design, field diagnostic review, PUC application and approval as well as construction of the necessary improvements to achieve quiet zone status along this



Affected County(ies)		Project Phases	
Boulder		Year	Phase
		2017	Initiate Design
		2018	Initiate Construction

Amounts in \$1,000s	Prior Funding	FY16	FY17	FY18	FY19	FY20-21	Future Funding	Total Funding
Federal (CMAQ)		\$0	\$226	\$1,330	\$0	\$0		
State		\$0	\$0	\$0	\$0	\$0		
Local		\$0	\$57	\$333	\$0	\$0		
Total	\$0	\$0	\$283	\$1,663	\$0	\$0	\$0	\$1,946

2007-095: Update Prior Funding column and remove four projects from pool. Removed pool projects will be individually depicted in the Rollover List and do not need to be duplicated in the current TIP

Existing

Title: **Region 4 Surface Treatment Pool**

Project Type: **Roadway Reconstruction**

TIP-ID: **2007-095**

STIP-ID: **SR45218**

Open to Public:

Sponsor: **CDOT Region 4**

Project Scope

Projects in CDOT Region 4 (Boulder and SW Weld Counties) to be approved for pool funding by Region 4 Director.

Affected County(ies)

Boulder

Weld



All pool project funding depicts federal and/or state funding only.

Facility Name	Start-At and End-At	Cost (1,000s)	Facility Name (Cont)	Start-At and End-At	Cost (1,000s)	Facility Name (Cont)	Start-At and End-At	Cost (1,000s)
SH-119	Monarch Rd to Fordham St	\$8,817	SH-7	28th St to US-287	\$3,286	SH-66	MP 39-42	\$5,200
SH-119	MM 22.8 to 37.4	\$11,000	SH-7: Phase II Non-Flood	Estes Park to SH-72	\$3,832	Baseline Rd Bike/Ped Underpass	TIPID 2012-046	\$300
SH-119	47th St to Monarch Rd	\$11,100	SH-119	MP 59-64	\$12,000	SH-119 Reconstruction 28th/US-36 to East 30th St	TIPID 2012-039	\$400
US 287	Jasper Rd North	\$1,850	US-85	Brighton to Ft Lupton	\$8,160			
Amounts in \$1,000s	Prior Funding	FY16	FY17	FY18	FY19	FY20-21	Future Funding	Total Funding
Federal		\$0	\$0	\$0	\$0	\$0		
State (Surface)		\$14,580	\$14,580	\$14,580	\$0	\$0		
Local		\$0	\$0	\$0	\$0	\$0		
Total	\$26,060	\$14,580	\$14,580	\$14,580	\$0	\$0	\$0	\$69,800

Highlighted projects to be removed.

Revised Scope and Funding Table

Facility Name	Start-At and End-At	Cost (1,000s)	Facility Name (Cont)	Start-At and End-At	Cost (1,000s)	Facility Name (Cont)	Start-At and End-At	Cost (1,000s)
SH-119	MM 22.8 to 37.4	\$11,000	SH-7	28th St to US-287	\$3,286	SH-119 Reconstruction 28th/US-36 to East 30th St	TIPID 2012-039	\$400
SH-119	47th St to Monarch Rd	\$11,100	SH-7: Phase II Non-Flood	Estes Park to SH-72	\$3,832			
US 287	Jasper Rd North	\$1,850	Baseline Rd Bike/Ped Underpass	TIPID 2012-046	\$300			
Amounts in \$1,000s	Prior Funding	FY16	FY17	FY18	FY19	FY20-21	Future Funding	Total Funding
Federal		\$0	\$0	\$0	\$0	\$0		
State (Surface)		\$14,580	\$14,580	\$14,580	\$0	\$0		
Local		\$0	\$0	\$0	\$0	\$0		
Total	\$32,177	\$14,580	\$14,580	\$14,580	\$0	\$0	\$0	\$75,917

2008-106: Remove all projects from pool. Pool projects will be individually depicted in the Rollover List and do not need to be duplicated in the current TIP.

Existing

Title: **Region 4 FASTER Transit Pool**

Project Type: **Transit Operational Improvements**

TIP-ID: **2008-106**

STIP-ID: **SR47005**

Open to Public:

Sponsor: **CDOT Region 4**

Project Scope
Pool contains transit-related projects based on the FASTER Transit program (Colorado Senate Bill 108) in CDOT Region 4 (DRCOG-TIP area only).

Affected County(ies)
Boulder
Weld



All pool project funding depicts federal and/or state funding only.

Facility Name	Start-At and End-At	Cost (1,000s)	Facility Name (Cont)	Start-At and End-At	Cost (1,000s)	Facility Name (Cont)	Start-At and End-At	Cost (1,000s)
Boulder	14th/Walnut Tran. Center Improv. (Prior Funding)	\$370	RTD	Tantra Dr pNR upgrades (Prior Funding)	\$284	City of Boulder	Broadway Euclid Transit Stop Improvements (Prior Funding)	\$350
Boulder	Transit Stop Enhancements (Prior Funding)	\$230	Boulder County	Special Transit Mountain Service (Prior Funding)	\$54	CDOT DTR	Service Development Plan for Front Range Commuter Rail (Prior Funding)	\$352
Boulder County	Bus Stop Improvements (Prior Funding)	\$84	eGO Car Share	"SHIFT" (Shared Hubs Integrated for Transp CMAQ Match (Prior Funding)	\$18	CDOT Region 4	DDI Transit Improvements (Prior Funding)	\$864
RTD	US-287 and Niwot pNR Expansion (Prior Funding)	\$280	36 Commuting Solutions	Prepaid Pass Kiosks for US-36 BRT (Prior Funding)	\$781			
Amounts in \$1,000s	Prior Funding	FY16	FY17	FY18	FY19	FY20-21	Future Funding	Total Funding
Federal		\$0	\$0	\$0	\$0	\$0		
State (Faster-T)		\$0	\$0	\$0	\$0	\$0		
Local		\$0	\$0	\$0	\$0	\$0		
Total	\$5,374	\$0	\$0	\$0	\$0	\$0	\$0	\$5,374

Revised

Title: **Region 4 FASTER Transit Pool**

Project Type: **Transit Operational Improvements**

TIP-ID: **2008-106**

STIP-ID: **SR47005**

Open to Public:

Sponsor: **CDOT Region 4**

Project Scope
Pool contains transit-related projects based on the FASTER Transit program (Colorado Senate Bill 108) in CDOT Region 4 (DRCOG-TIP area only).

Affected County(ies)
Boulder
Weld



Amounts in \$1,000s	Prior Funding	FY16	FY17	FY18	FY19	FY20-21	Future Funding	Total Funding
Federal		\$0	\$0	\$0	\$0	\$0		
State (Faster-T)		\$0	\$0	\$0	\$0	\$0		
Local		\$0	\$0	\$0	\$0	\$0		
Total	\$5,374	\$0	\$0	\$0	\$0	\$0	\$0	\$5,374

2012-109: Update Prior Funding column, remove funds, and both projects from pool. Pool projects will be individually depicted in the Rollover List and do not need to be duplicated in the current TIP

Existing

Title: **Region 4 RAMP Project Pool**

Project Type: **Other**

TIP-ID: **2012-109**

STIP-ID:

Open to Public:

Sponsor: **CDOT Region 4**

Project Scope

Pool contains projects selected under the RAMP program in CDOT Region 4 (DRCOG-TIP area only).

Projects selected under RAMP that are Regionally Significant will be depicted individually.



Affected Municipality(ies)	Affected County(ies)
Boulder	Boulder
Longmont	Weld

All pool project funding depicts federal and/or state funding only.

Facility Name	Start-At and End-At	Cost (1,000s)	Facility Name (Cont)	Start-At and End-At	Cost (1,000s)	Facility Name (Cont)	Start-At and End-At	Cost (1,000s)
SH-119: Boulder Canyon	Trail Extension (MP 39.1-37.8)	\$3,498	US-287 (Main St. Longmont) Adaptive Signals	MP 313.8-318.7	\$1,100			

Amounts in \$1,000s	Prior Funding	FY16	FY17	FY18	FY19	FY20-21	Future Funding	Total Funding
Federal		\$0	\$0	\$0	\$0	\$0		
State (RMP)		\$3,723	\$875	\$0	\$0	\$0		
Local		\$1,316	\$219	\$0	\$0	\$0		
Total	\$8,513	\$5,039	\$1,094	\$0	\$0	\$0	\$0	\$14,646

Revised

Title: **Region 4 RAMP Project Pool**

Project Type: **Other**

TIP-ID: **2012-109**

STIP-ID:

Open to Public:

Sponsor: **CDOT Region 4**

Project Scope

Pool contains projects selected under the RAMP program in CDOT Region 4 (DRCOG-TIP area only).

Projects selected under RAMP that are Regionally Significant will be depicted individually.



Affected Municipality(ies)	Affected County(ies)
Boulder	Boulder
Longmont	Weld

Amounts in \$1,000s	Prior Funding	FY16	FY17	FY18	FY19	FY20-21	Future Funding	Total Funding
Federal		\$0	\$0	\$0	\$0	\$0		
State (RMP)		\$0	\$0	\$0	\$0	\$0		
Local		\$0	\$0	\$0	\$0	\$0		
Total	\$13,986	\$0	\$0	\$0	\$0	\$0	\$0	\$13,986

ATTACHMENT C

To: Chair and Members of the Regional Transportation Committee

From: Douglas Rex, Director, Transportation Planning and Operations
303-480-6745 or drex@drcog.org

Meeting Date	Agenda Category	Agenda Item #
July 19, 2016	Action	5

SUBJECT

This action concerns amending the *FY 2016-2017 Unified Planning Work Program (UPWP)*.

PROPOSED ACTION/RECOMMENDATIONS

DRCOG staff recommends approval of the 2016-2017 UPWP amendments.

ACTION BY OTHERS

[May 23, 2016](#) – TAC recommended approval.

SUMMARY

The *FY 2016-2017 Unified Planning Work Program (UPWP)* describes the proposed multimodal transportation planning activities to be conducted in the Denver region. The document is prepared biennially and serves as the management tool for scheduling, budgeting, and monitoring the planning activities of participating entities. The FY 2016-2017 UPWP was adopted in July 2015.

Periodically, amendments to the UPWP are made to accurately reflect work to be performed or to comply with changes in federal law. Proposed amendments are shown in the attached track-changes version of the FY 2016-2017 UPWP (Attachment 1) and fall into three general categories:

- Procedural: updating MAP-21 references to FAST Act, minor clarifications to work tasks and activities
- Financial: updates and clarifications to the finance tables in Appendix A
- Schedule: minor updates to some deliverable completion dates in activity descriptions and in Appendix B

Staff will further describe the proposed amendments at the RTC meeting.

PREVIOUS DISCUSSIONS/ACTIONS

N/A

PROPOSED MOTION

Move to recommend to the Board of Directors amendments to the *FY2016-2017 Unified Planning Work Program*.

ATTACHMENT

Link: [Amended FY2016-2017 Unified Planning Work Program](#), with track-changes

ADDITIONAL INFORMATION

If you need additional information, please contact Douglas Rex at 303 480-6747 or drex@drcog.org.

ATTACHMENT D

To: Chair and Members of the Regional Transportation Committee

From: Jacob Riger, Transportation Planning Coordinator
303-480-6751 or jriger@drcoq.org.

Meeting Date	Agenda Category	Agenda Item #
July 19 , 2016	Action	6

SUBJECT

This item recommends an approach for DRCOG to address High Occupancy Vehicles (HOV), managed lanes, and toll highway policies in the DRCOG regional transportation planning process.

PROPOSED ACTION/RECOMMENDATIONS

Staff recommends approval of the draft CTE/HPTE and non-HPTE additional information requirements for *Fiscally Constrained Regional Transportation Plan* project submittals with a tolling component.

ACTION BY OTHERS

[May 23, 2016](#) – TAC
[July 6, 2016](#) – Board Work Session

SUMMARY

DRCOG's former Metro Vision Issues Committee (MVIC) had thoughtful discussion in the past on how HOV issues are or should be addressed in the regional transportation planning process. Two recent events/actions provide a platform for further discussion:

1. CDOT's new HOV policy

In October 2015, the State Transportation Commission approved a resolution regarding the assessment of HOVs on the state highway system's tolled managed lanes. The impetus for the new resolution was a February 2013 policy resolution passed by the Transportation Commission requiring, as of January 1, 2017, all tolled HOV lanes on the state highway system to be limited to free access only by HOVs with three or more total occupants (HOV 3+). However, the resolution did not provide guidance as to whether a facility "should" include HOV 3+ lanes. The October 14, 2015 CDOT agenda memo to the Transportation Commission addressing this issue and adopted resolutions are provided in Attachment 1.

CDOT's new HOV policy begins with the assumption that HOV 3+ will be free for all proposed CDOT toll facilities. However, the policy notes three conditions under which this assumption may not be feasible. Specifically, if HOV 3+: 1) causes safety concerns; 2) leads to corridor performance measures not being met; or 3) renders the transportation improvements financially infeasible. CDOT will use the new policy to assess HOV on all new managed corridors/lanes projects.

2. Updates to DRCOG information requirements for tolled projects proposed for inclusion in the *Fiscally Constrained Regional Transportation Plan*.

Per state statutes (linked in attachments), in 2009, DRCOG adopted requirements for additional information to be submitted whenever a project with a tolling component is

proposed for inclusion into the FC-RTP (or changes to a project already in the FC-RTP). Consistent with state statutes, there is one version for CDOT/High Performance Tolling Enterprise (HPTE) projects, and a separate but similar version for private toll company projects. These additional information requirements have not been updated since 2009. Attachments 2 (CDOT/HPTE) and 3 (private toll companies) are updated versions of the 2009 requirements which incorporate TAC's recommendations (discussed below). Attachments 2a and 3a show track changes versions.

Summary of TAC Discussion & Recommendations

TAC discussed the HOV topic over four meetings between January-May 2016 leading to its recommendations incorporated in Attachments 2 and 3. In particular, TAC discussed at length whether DRCOG should establish a specific HOV policy and, if so, how, when, and to whom such a policy would apply.

After much discussion, TAC reached consensus that the best way to address HOV issues is through the RTP additional information requirements. Specifically, TAC recommended:

- the CDOT/HPTE version (Attachment 2) directly incorporate CDOT's new HOV policy language;
- the private toll company version (Attachment 3) incorporate the content addressed by CDOT's HOV policy in the form of asking whether such projects will include an HOV 3+ component, and if not, why; and
- both versions of the RTP additional information requirements specifically ask whether the proposed toll project will also include provisions for transit service, and if not, why.

The TAC recommendations strike a balance between addressing HOV issues in a specific and meaningful way for the Board's consideration through the RTP additional information requirements while not prescribing a one-size-fits-all regional policy. The recommended approach is also consistent with CDOT's HOV policy.

PREVIOUS DISCUSSIONS/ACTIONS

N/A

PROPOSED MOTION

Move to recommend to the Board of Directors the updated additional information requirements for Fiscally Constrained Regional Transportation Plan project submittals with a tolling component.

ATTACHMENTS

1. CDOT memo and resolution to Transportation Commission regarding High Occupancy Vehicle (HOV) Policy Guidance (October 14, 2015)
2. Draft revised CTE/HPTE additional information requirements for FC-RTP project submittals with a tolling component
 - a. [Link](#) to track changes version

3. Draft revised Non-HPTE additional information requirements for FC-RTP project submittals with a tolling component
 - a. [Link](#) to track changes version of Attachment 2
4. Staff Presentation slides

Other links:

- [C.R.S 43-4-805.5 \(HB05-1148\): CDOT/HPTE toll highway construction MPO review requirements](#)
- [C.R.S. 7-45-105/106 \(HB06-1003\): Private Toll Company toll highway construction MPO review requirements](#)

ADDITIONAL INFORMATION

If you need additional information, please contact Jacob Riger, Transportation Planning Manager, at 303-480-6751 or jriger@drcoq.org.

ATTACHMENT 1



COLORADO
Department of Transportation
Division of Transportation Development

DATE: October 14, 2015
TO: Transportation Commission
FROM: Debra Perkins-Smith, Director, Division of Transportation Development (DTD)
SUBJECT: High Occupancy Vehicle (HOV) Policy Guidance

Purpose

To provide guidance on proposed policy for High Occupancy Vehicle (HOV) lanes.

Action

Transportation Commission (TC) approval of revised HOV Policy resolution.

Background

Managed lanes are being considered with increasing frequency as a potential solution on many corridors (see Attachment A). HOV lanes, bus only, bus on shoulder, Bus Rapid Transit (BRT), Tolloed Express Lanes (TEL), and congestion pricing are all examples of managed lanes. Guidance is currently being developed on how to apply the Managed Lanes Policy Directive 1603.0 (Resolution #TC-3039, December 2012), which states:

“Managed Lanes provide the ability for the Department to respond to changing traffic conditions and provide operational flexibility and efficient operation of the multi-modal transportation system infrastructure by maximizing the number of vehicle or the number of people traveling in a given corridor. As congestion increases in a corridor, managed lanes can provide greater reliability of travel and also promote alternative travel choices. The challenge for transportation planners and highway engineers is to maximize the operation of transportation infrastructure by considering flexible, cost-effective strategies for sustaining or enhancing the movement of people and goods.”

There are a number of managed lanes currently in the planning stages, including potential HOV and TEL projects and combinations thereof; therefore guidance is being developed on how to consider these strategies within a corridor. With a number of planned or future projects considering HOV lanes as part of a managed lanes strategy, the timing is appropriate for the TC to consider providing additional guidance on how HOV lanes should be considered on CDOT projects.

Details

As a state DOT, we recognize the benefits of HOV:

- To increase the person throughput of the transportation system (by providing incentives to use buses, vanpools, and carpools)
- To provide mode choice
- To reduce congestion
- To reduce the number of vehicles, and therefore reduce vehicle emissions

HOV lanes in Colorado have most often been implemented as part of a TEL. The goal of a TEL strategy is to optimize throughput of the transportation system, provide travel time reliability, reduce congestion, provide choice, and generate revenue to offset operations, maintenance, or project costs of a transportation investment. When developing a TEL strategy, the consideration of HOV lanes must also be balanced with the goals of the TEL.

PD 1603.0 requires that the use of managed lanes be strongly considered during the planning and development of capacity improvements on state highway facilities in Colorado, but does not provide guidance specific to HOV lanes. Resolution #TC-3052 (February 2013) required that as of January 1, 2017 all tolled HOV lanes on the state highway system be limited to vehicles with three or more total occupants (HOV-3+). It did not, however, provide guidance as to how it should be determined whether a facility should include HOV-3+ lanes. Staff is currently developing guidance on the implementation of

PD 1603.0 and requests TC input on how to address the consideration of HOV-3+ lanes. Staff has developed the following general concepts to guide the consideration of managed lane strategies, including HOV:

Establish Performance Measures - For managed corridors/lanes, set performance measures for corridor goals. For example, if the goal of the managed corridor/lane is to provide travel time reliability, a performance measure related to level of service (LOS) or speed should be established. (These performance measures are sometimes expressed as triggers at which an action is taken.)

Consider HOV-3+ Free - For managed corridors/lanes, in recognition of the benefits of HOV, begin with the assumption that HOV-3+ is free; however, there are conditions under which this strategy may not be feasible. For example, if HOV-3+ results in any of the following issues:

- Safety concerns
- Corridor performance measures will not be met
- Renders the transportation improvements financially infeasible

Each managed corridor/lane can be assessed based on its specific characteristics and may be reassessed as conditions change over time. See attached example of an HOV assessment. Attachment B provides example assessments for US 36, I-70 PPSL, and C-470.

At the TC Workshop, staff will review the proposed policy approach, as well as the specifics of its application on the I-70 PPSL and C-470 projects (see Attachments B and C). Given the need for a decision in the near future for C-470, staff requests TC input and consideration of an approval action on an updated resolution to replace Resolution #TC-3052 (see Attachment D). Staff will incorporate the direction provided by the TC in the PD 1603.0 guidance currently being developed.

Next Steps

- Transportation Commission adoption of revised HOV Policy resolution

Attachments

- Attachment A - Colorado Toll/HOV/BRT Facilities
- Attachment B - Example HOV Assessment
- Attachment C - C-470 Express Toll Lanes Exemption Analysis
- Attachment D - Updated Resolution #TC-3052 (HOV 3+ Policy)

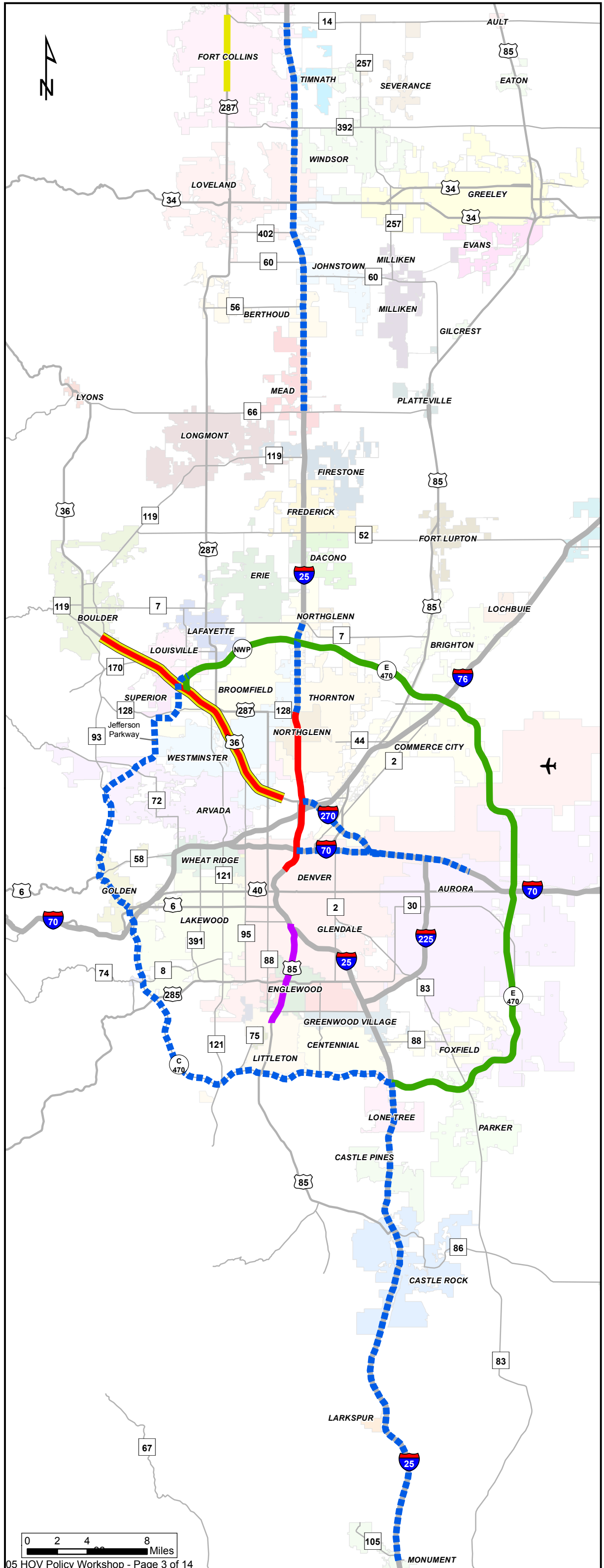
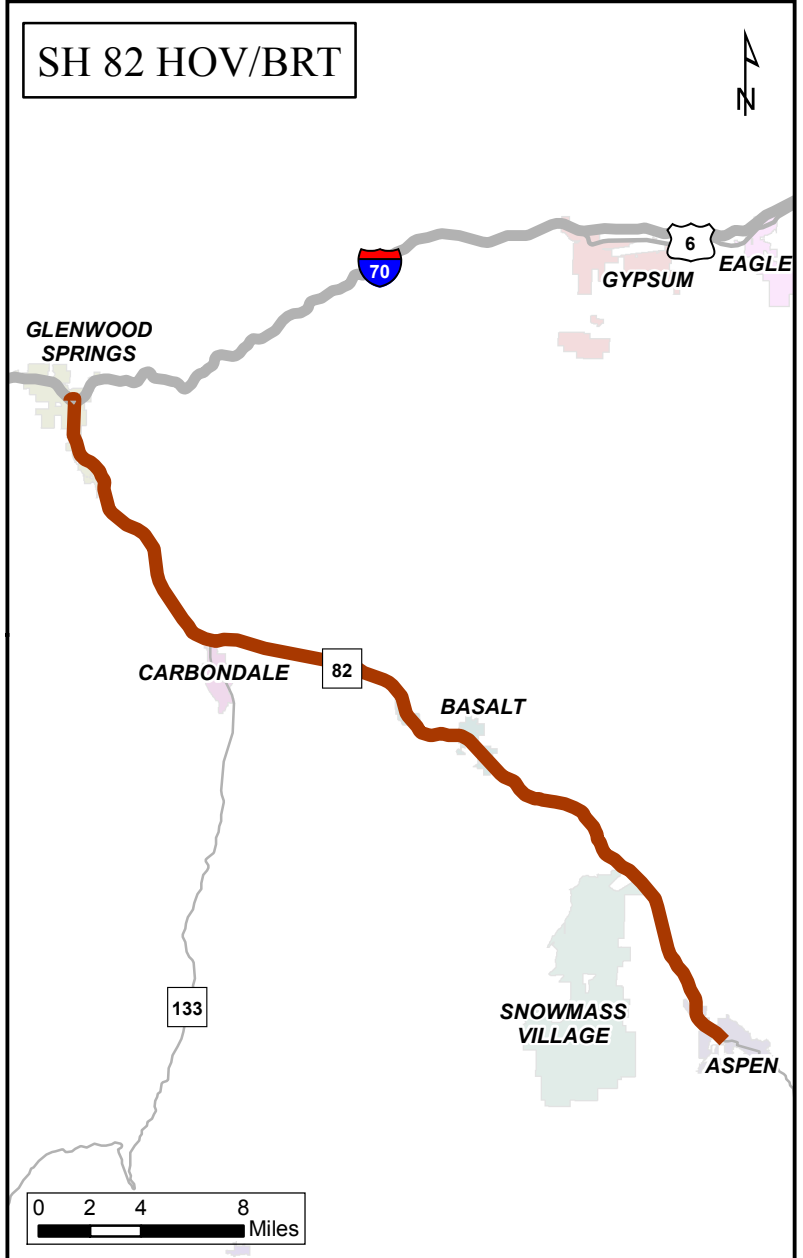
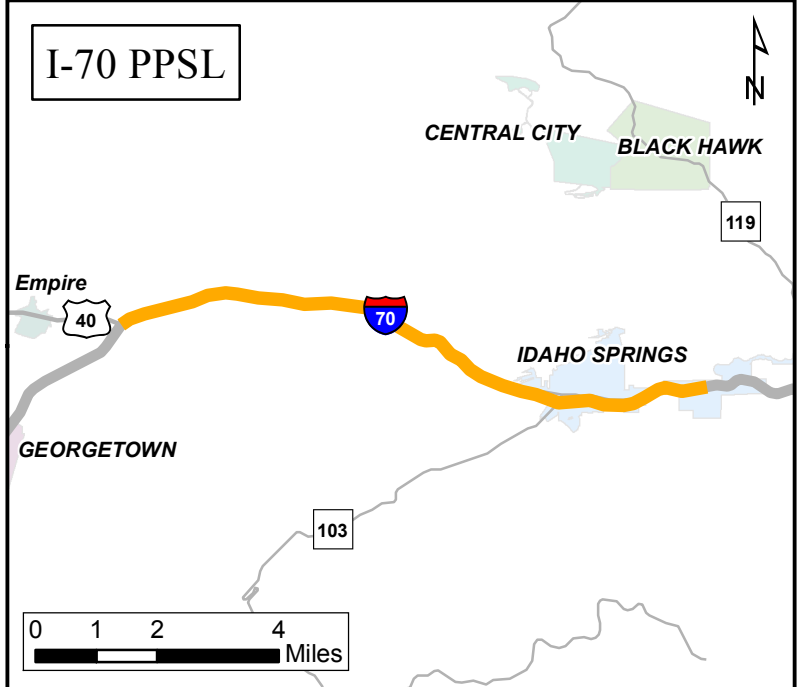
Colorado Managed Lane Facilities October 2015

Managed Lanes - Operational or Under Construction

- █ BRT Only
- █ HOV Only
- █ HOV + BRT
- █ Toll Only - Transportation Authority
- █ Toll Only
- █ Toll + HOV
- █ Toll + HOV + BRT

Managed Lanes - Future

- TBD





Corridor/Project: US 36 Express Lanes

Project Description: Express lane in each direction of US 36 between Pecos and Table Mesa for BRT, HOV, and tolled vehicles.

Purpose: Provide travel time reliability and mode choice

Performance Measures:

1. Ensure motor vehicle speeds of:
 - a) An average of 55 miles per hour for the portion of the US 36 Managed Lanes from Table Mesa to the Broomfield Park-n-Ride
 - b) An average of 50 miles per hour for the portion of the US 36 Managed Lanes from the Broomfield Park-n-Ride to Pecos Street
2. Maintain a travel time of no more than 8.75 minutes for the portion of the Managed Lanes from Pecos Street to Denver Union Station

HOV Criteria:

Safety: No current concerns related to HOV-3+.

Performance Measures: No current concerns related to HOV-3+. Facility is currently HOV-2+. Pursuant to Resolution #TC-3052, facility will change to HOV-3+ on January 1, 2017. Concessionaire agreement also includes triggers including transit delays, average vehicle speed, and hourly volumes that could result in conversion to HOV-3+ at an earlier date.

Financial Feasibility: No current concerns related to HOV 3+.



Corridor/Project: I-70 Peak Period Shoulder Lanes (PPSL)

Project Description: Upgraded shoulder that will function as an optional, tolled express lane during peak driving periods on eastbound I-70 between Exit 232 at US 40/Empire Junction 13 miles east to MP 243.5, just east of the Veteran's Memorial Tunnels. As a temporary strategy the initial implementation will be limited to 72 days per year. During non-peak times, the lane will function as an extra-wide shoulder.

Purpose: Provide travel time reliability

Performance Measures:

1. Shoulder tolled express lane operates at a speed of 45 mph or higher (congestion pricing strategy will be used to maintain travel reliability)

HOV Criteria:

Safety: No current concerns related to HOV 3+.

Performance Measures: HOV-3+ would result in performance measure not being met because of the high level of auto occupancy on the corridor during peak periods. The "I-70 Mountain Corridor PEIS Travel Demand Technical Report" (reissued March 2011) determined that the average auto occupancy on the corridor during peak periods is 2.6. If HOV-3+ were implemented, the majority of vehicles on the corridor during peak periods would be eligible to use the tolled express lanes without incurring a toll, precluding the possibility of achieving the established performance measure of 45 mph or higher speeds.

Financial Feasibility: HOV 3+ would eliminate or reduce the travel time advantage, thereby eliminating or significantly reducing the ability to toll the facility, and finance the project.



Corridor/Project: C-470 Express Lanes

Project Description: Addition of two tolled express lanes westbound from I-25 to approximately Colorado Blvd., one tolled express lane westbound from Colorado Blvd. to Wadsworth Blvd., and one tolled express lane eastbound from Platte Canyon Road to I-25, with future plans to extend the tolled express lanes in each direction to Kipling.

Purpose: Provide travel time reliability

Performance Measures:

1. Tolled express lane operates at 45 mph or better (congestion pricing strategy will be used to maintain travel time reliability)

HOV Criteria:

Safety: No current concerns related to HOV-3+.

Performance Measures: No current concerns related to HOV-3+.

Financial Feasibility: Accommodating HOV-3+ is not currently financially feasible as accommodation is projected to result in an initial funding gap of approximately \$40M in the preferred financing scenario. HOV-3+ accommodation is also projected to reduce excess toll revenues by approximately \$100M over 40 years. The Transportation Commission could choose to allocate additional funds, such as RAMP, to this project, but currently there are no other funding sources identified to close the funding gap that would result from the accommodation of HOV-3+. Additionally, the projected \$100M reduction could delay additional corridor improvements outside the current construction project. Two additional improvement opportunities potentially impacted would be the ultimate buildout between I-25 & Kipling and the C-470 West Connect extending west from Kipling. More details can be found in the C-470 HOV 3+ Exemption Analysis.



1. Summary

To support the ongoing development of the C-470 Express Lanes Project (the Project) and related toll policy discussions, the Colorado Department of Transportation (CDOT)—in partnership with the High Performance Transportation Enterprise (HPTE)—undertook an analysis to determine the potential impacts associated with a carpool exemption policy for high occupancy vehicles with three or more passengers (HOV3+).

Current and prior planning has assumed that all vehicles, regardless of occupancy, would be subject to tolls in the Express Lanes; however, a final policy recommendation regarding HOV exemptions has not yet been formulated. To support that decision, this analysis evaluates the potential traffic, revenue and financing implication associated with an HOV3+ exemption policy.

It is currently estimated that the implementation of an HOV3+ exemption policy in the Express Lanes would generate limited long-term growth in the share of HOV3+ carpools relative to other classes, and negatively impact CDOT/HPTE's project financials. Fully funding the project would necessitate a more leveraged and risky financial structure that would require, for example, additional draws on and/or a longer repayment period for the CDOT O&M loan. Depending on the type of debt and market terms and conditions at the time of financing, a financing sufficient to fund the project as designed may not be executable.

Lower net cash flows—particularly in the early years of operation when revenues are disproportionately impacted by HOV3+ exemptions—would reduce net construction proceeds by as much as \$40 million. Furthermore, excess toll revenues accruing to HPTE would be reduced by approximately \$100 million¹ in net present value, impacting the ability to fund future phases of the C-470 Express Lanes Project.

2. Project Background

C-470 has a history of severe congestion, and for well over a decade has operated at failing levels of service. As a solution to this issue, CDOT and its partners began evaluating alternatives to improve mobility and reduce congestion along the corridor, culminating in the proposed C-470 Express Lanes Project. As analyzed in the Revised Environmental Assessment (EA), the Project will be delivered in two phases. The first phase (Interim Project) will provide managed express lanes as follows:

- Westbound: two express lanes from I-25 to approximately Colorado Boulevard, and one lane from Colorado Boulevard to Wadsworth Boulevard
- Eastbound: one express lane from Platte Canyon Road to I-25

Currently, available funding has limited construction scope the Interim project; however, future construction of the Ultimate configuration would extend and add lanes to achieve two express lanes in each direction between I-25 and Kipling Parkway. Exhibit 1 illustrates the existing and proposed corridor configurations associated with the Interim Project.

¹Net revenues available after debt service, operations and maintenance costs and repayment of any O&M loan balances (as needed) discounted at 5%.

Exhibit 1: C-470 Lane Configurations



3. Cost and Revenue Impact

One of the key considerations in evaluating a toll exemption policy is the potential impact on the Project's cash flows, both in terms of reduced revenue collection resulting from both the exemption itself and toll evasion / occupancy violations, as well as increased operations and maintenance costs (O&M). The following sections describe each of these items and their estimated impact on project cash flows, and ultimately its financial feasibility.

a. Traffic and Revenue

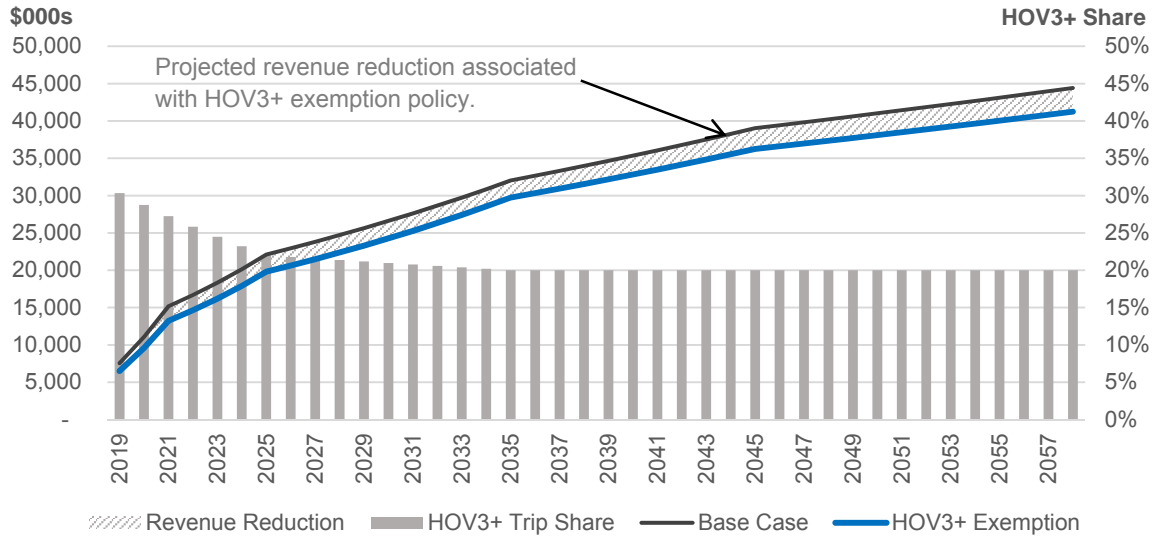
As an initial step toward understanding the impact of an HOV3+ exemption policy, the Project's investment grade T&R consultant, Louis Berger Group (LBG), prepared an estimate of the potential share of HOV3+ vehicles that would use the Express Lanes and the extent to which that usage would impact gross toll revenue. This preliminary effort, which was conducted using a traffic simulation model, indicated that HOV3+ users would account for approximately **32%** of Express Lane trips in 2018 and approximately **20%** by 2035. Gross revenue is anticipated to be 15% and 7% lower in 2018 and 2035, respectively, when compared to revenues forecasted without an HOV3+ exemption policy ("Base Case"). A table detailing the approximate HOV3+ trip shares and revenue impacts by model year is provided below.

Exhibit 2: Estimated HOV3+ Trip Shares and Gross Revenue (2015 \$000s)

Model Year	HOV3+ Trip Share (%)	Gross Revenue (HOV3+ Exempt)	Gross Revenue (Base Case)	Gross Revenue Delta (%)
2018	32%	\$9,789	\$11,460	-15%
2025	22%	\$19,806	\$22,114	-10%
2035	20%	\$29,736	\$32,021	-7%

Note: Values shown in the above exhibit are expressed in 2015 dollars; gross revenues do not include ramp-up, toll collection costs, leakage, or other adjustments associated with an investment grade financing analysis.

Exhibit 3: Comparison of Gross Base Case and HOV3+ Exemption Revenue (2015 \$)



Note: Values shown in the above exhibit are expressed in 2015 dollars. However, the impacts cited in the following discussion are expressed in nominal terms.

While the overall share of Express Lane toll-exempt trips is anticipated to decline over the forecast horizon, LBG also indicated that HOV3+ trips (by volume) are projected to grow by approximately 1% per year between 2018 and 2035 – well below the rate of growth in toll trips, which is anticipated to be 5% per year over the same period.

2035 Nominal Cash Flow Impact:	-\$3.2mm	-7%
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b. Revenue Leakage

Based on a survey of all-electronic toll facilities across the U.S., a baseline revenue leakage assumption of 10% per year was established for the Base Case (i.e., where HOVs do not receive a toll exemption in the Express Lanes) cash flows. This amount reflects a variety of factors that may result in revenue leakage, including toll equipment errors, non-payment by customers, weather-related events, etc.

As noted in the prior section, the introduction of HOV3+ exemptions would create additional opportunity for leakage resulting from occupancy violations. Data for existing CDOT HOV facilities suggests that occupancy violation rates can reach as high as 25% without routine enforcement (this is reduced to 15% with enforcement).

For the purpose of this analysis, it is assumed that an HOV3+ exemption policy would increase the 10% Base Case leakage rate to 15% per year.

2035 Nominal Cash Flow Impact:	-\$2.2mm	-5%
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c. Toll Collection O&M

Transaction Processing

The process of collecting tolls requires a complex system of in-lane toll equipment and back office software to record and collect the applicable toll from customers using the corridor. As an all-electronic system, customers will be encouraged to establish a prepaid transponder account, whereby readers placed throughout the corridor will automatically detect the customer's transponder and deduct the appropriate toll from that account. In cases where a transponder is not present, cameras at each toll location will automatically record the customer's license plate number and either match that license plate to a pre-registered account, or generate an invoice for non-account customers.

To handle these transactions, a third-party vendor will be procured to operate and maintain the toll collection system, interface with customers, and provide back office support. For the purpose of this analysis, it is assumed that the cost of such services will be transaction-based, whereby the selected vendor will charge CDOT each time a transaction in the C-470 Express Lanes is processed (similar to existing contracts for the US-36 and I-25 Express Lanes with the E-470 Public Highway Authority). Depending on the type of transaction that is incurred (i.e., transponder or license plate), a different price will be charged to CDOT.

Toll rates on C-470 will be designed, at a minimum, to offset transaction processing costs to remain "net revenue neutral," even during periods of low usage. This pricing methodology is only possible when all vehicles in the Express Lanes are required to pay a toll. In an HOV3+ exemption scenario, transaction processing would still be required, but a toll would not be collected to offset the cost. In effect, these transactions are net revenue negative, since they only generate a cost but not an offsetting revenue.

Exhibit 4: Hypothetical Revenue of Base Case and HOV3+ Exemption Policy

Scenario	Transponder Toll (Hypothetical)	Transponder Processing Cost ²	Net Revenue
Base Case (HOV3+ Tolled)	\$1.00	(\$0.18)	\$0.82
HOV3+ (Toll Free)	\$0.00	(\$0.001)	(\$0.001)

As illustrated in the above table, each HOV3+ toll transaction generates a net loss of \$0.001 on a simple comparison of average revenue to average cost, before any losses (leakage) associated with intentional or unintentional occupancy violations.

2035 Nominal Cash Flow Impact:	+\$0.1mm	<1%
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Enforcement

Similar to the US-36 and I-25 Express Lanes, customers who are eligible to receive an HOV3+ toll exemption would be required to install a multi-switch transponder in order to declare their HOV3+ status each time they use the corridor. By default, non-switchable transponders and license plate transactions would be treated as full toll customers, since the system would have no way to determine the occupancy of those vehicles.

However, by allowing customers to self-declare their HOV3+ status (and thus toll exemption), this introduces the risk that customers will intentionally or unintentionally select the incorrect transponder occupancy setting.

² 2010 dollars (Parsons Brinckerhoff, 2015)

In the case of unintentional user error, a vehicle may travel as an HOV3+ in one direction, then re-enter the corridor as a single occupant vehicle (SOV) without changing the transponder setting. As a result, the toll is waved and revenue is not collected for that transaction.

To counteract these situations, visual enforcement at select locations throughout the corridor would be provided by Colorado State Patrol (CSP), the cost which would be paid out of toll revenues. While the annual cost of CSP enforcement will vary according to violation trends, it is assumed that C-470 would allocate approximately \$250,000 (2015 dollars) for targeted and routine enforcement activities within the corridor.

Although violators will be ticketed and fined for occupancy violations, it is not assumed that any violation revenue will flow back to the Project. Enforcement would be provided with the sole purpose of reducing losses (revenue leakage) attributed to occupancy violations.

2035 Nominal Cash Flow Impact:	-\$0.2mm	<1%
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d. Capital Costs

Beyond increased operating costs and financing adjustments, HOV3+ exemptions would also necessitate additional upfront capital to cover:

- Additional engineering/design/construction to accommodate “toll enforcement zones”
- Additional in-lane toll equipment to support visual enforcement efforts

The total combined cost of these items is estimated to be approximately \$1 million (about 0.4% of the Project’s base capital costs), requiring additional upfront financing and associated debt service.

2035 Nominal Cash Flow Impact:	-\$0.1mm	<1%
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4. Financing & Credit Impact

a. Credit Rating Implications

Toll exemption policies are generally viewed as a credit negative due to the direct impact those vehicles have on lane performance, travel reliability, and available capacity for toll paying vehicles. In a November 2013 report titled *U.S. Managed Lanes: Empirical Data Steers Credit Analysis*, Fitch Ratings notes that the “nature of the HOV and transit policies can significantly impact revenues” and that “a key rating driver going forward will be the HOV policy and other policies governing access to [managed lanes].” The report further explains that exemption policies for HOV2+ vehicles are inherently more risky than facilities with HOV3+ policies; however, despite lower upfront revenue risk, it should be noted that as demand for the corridor increases with population and employment, an increasing number of toll-free HOV3+ vehicles will absorb Express Lane capacity, thus decreasing capacity available for toll-paying vehicles.

A similar outlook report by Moody’s Investor Service in May 2013 suggests that “a small diversion of traffic onto tolled lanes frees up capacity on non-tolled alternative, hence decreasing the incentive for additional users to move to the tolled lane.” In the context of C-470, providing toll exemptions may cause a portion of those vehicles to shift to the Express Lanes, which would reduce capacity for toll paying vehicles and open capacity in the general purpose (GP) lanes. The increased capacity in the GP lanes could induce vehicles that would have otherwise paid to enter the Express Lanes.

To compensate for the increased revenue variability associated with the implementation of a toll exemption policy (e.g. the risk of additional HOV 3+ traffic above projected levels using the lanes, potential unforeseen impacts on overall corridor congestion and mobility), rating agencies and investors would be expected to take a slightly more conservative view on the credit (manifested through increased coverage ratios, additional liquidity measures, and/or an additional haircut to revenues). The total impact of these considerations has been assumed to be equivalent to a 5% additional reduction in toll revenues. This would result in a cash flow reduction of \$2.2 million in 2035 for debt sizing purposes.

2035 Nominal Cash Flow Impact:	-\$2.2mm	-5%
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5. Summary of Impacts

a. Project Cash Flows

The table below summarizes all impacts to project cash flows in 2035.

Exhibit 4: Revenue Impact Summary

2035 Nominal Impacts	Amount (\$mm)
Gross Revenue	-\$3.2
Rev. Adjustments: Leakage	-\$2.2
O&M: Transaction Processing	+\$0.1
O&M: Enforcement	-\$0.2
Additional Debt Service: Increase Capital Cost	-\$0.1
Credit: T&R Risk Adjustment	-\$2.2
Total of Individual Impacts	-\$7.8
Total Combined Impacts*	-\$7.3

*Nominal impacts noted above are not additive, given the interrelated nature of gross revenues, leakage, and the T&R risk adjustment factor. As such, the "total combined impacts" row provides a bottom line summary of all impacts in the HOV3+ exemption scenario.

b. Funding Impact

Design and construction funding for the C-470 Express Lanes Project will be provided in the form of public monies (RAMP, FASTER, HSIP, and other public contributions) as well debt backed by toll revenues. The extent to which debt can be raised for the project is primarily a function of the near- and mid-term cash flow available for interest and principal payments on project debt. Based on the anticipated Project cash flow under an HOV3+ exemption policy, it is estimated that debt capacity could be reduced by as much as **\$40 million**, requiring a substantial amount of additional funding to be identified to fully fund the Project (which is also based on an estimated capital cost of \$269 million).

In addition, the HOV3+ financial structures would place added risks on CDOT in case of revenue shortfalls or cost overruns as the CDOT O&M loan amount increases and/or is repaid over a longer period of time.

Finally, In addition to the reduction of net proceeds available to fund project construction, the present value of excess toll revenues accruing to HPTTE would diminish significantly – by as much as \$100 million (assuming a 5% discount rate) – under an HOV3+ toll exemption policy. Excess cash flow, or surplus revenue after debt service and operating costs, is a key indicator of potential funding that could be contributed to future projects, including the second phase of the C-470 Express Lanes or other corridor improvements.

Resolution #TC-15-10-5

Adopting a requirement that as of January 1, 2017, toll-free travel offered to High Occupancy Vehicles on all tolled managed lanes that are part of the state highway system shall be limited to vehicles with three or more occupants; and

Adopting an approach for the consideration of toll-free travel for High Occupancy Vehicles with three or more occupants on all tolled managed lanes that are part of the state highway system.

Approved by the Transportation Commission on: October 15, 2015

WHEREAS, the Transportation Commission is responsible, pursuant to C.R.S. 43-1-106(8), for formulating the general policy of the Colorado Department of Transportation (CDOT); and

WHEREAS, the Transportation Commission recognizes the importance of consistency among tolled managed lane corridors with regard to High Occupancy Vehicle exceptions; and

WHEREAS, the Transportation Commission recognizes the benefits of toll-free travel for vehicles carrying three or more occupants (HOV-3+) to increasing person throughput and encouraging carpooling and transit use, with resulting reductions in vehicle emissions, to reduce congestion, and improve the safety, capacity, and accessibility of the surface transportation system; and

WHEREAS, the General Assembly created the Colorado High Performance Transportation Enterprise (HPTE) as a government-owned business within CDOT, pursuant to Section 43-4-806 C.R.S., to aggressively pursue innovative means of more efficiently financing important surface transportation projects that will improve the safety, capacity, and accessibility of the surface transportation system; and

WHEREAS, to facilitate the financing of important transportation projects, the HPTE Board of Directors has recommended that the Transportation Commission require toll-free travel offered to High Occupancy Vehicles on tolled managed lanes that are part of the state highway system to be limited to HOV-3+; and

WHEREAS, the Transportation Commission recognizes the benefits of toll-free HOV-3+ and the importance of considering toll-free HOV-3+ on all planned or future tolled managed lanes that are part of the state highway system; and

WHEREAS, the Transportation Commission recognizes that the feasibility of toll-free HOV-3+ must be considered with respect to its impacts on safety, the ability to achieve established performance measures on tolled managed lanes, financial feasibility, and other factors that may be applicable.

NOW THEREFORE BE IT RESOVLED, the Transportation Commission hereby requires that as of January 1, 2017 toll-free travel offered to High Occupancy Vehicles on tolled managed lanes that are part of the state highway system shall be limited to HOV 3+; and

BE IT FURTHER RESOLVED, the Transportation Commission hereby directs that, for all planned or future tolled managed lanes that are part of the state highway system, consideration be given as to the feasibility of offering toll-free HOV-3+, including an evaluation of factors including, but not necessarily limited to, its impact on safety, the ability to achieve established performance measures on the tolled managed lanes, and financial feasibility of the tolled managed lane proposal.

Herman J. Stockinger III
Herman Stockinger, Secretary
Transportation Commission of Colorado

10-20-15
Date

Resolution #TC-15-10-6

Determining Not to Include Toll-Free HOV3+ Travel for the C-470 Tolled Express Lanes Project

Approved by the Transportation Commission on October 15, 2015

WHEREAS, pursuant to § 43-1-106(8), C.R.S., the Transportation Commission is responsible for formulating the general policy of the Colorado Department of Transportation (CDOT) with respect to the management of public highways in the state; and

WHEREAS, the Transportation Commission is authorized, pursuant to § 42-4-1012(1)(a), C.R.S., to designate exclusive or preferential lanes that carry a specified number of persons; and

WHEREAS, the Transportation Commission recognizes the benefits of HOV accessibility in encouraging carpooling and transit use, with resulting reductions in vehicle emissions, congestions mitigation, and improvements in the safety, capacity, and accessibility of the surface transportation system; and

WHEREAS, by Resolution #TC-3052, approved February 21, 2013, the Transportation Commission recognized the importance of consistency among tolled managed lane corridors with regard to encouraging high occupancy vehicle (HOV) use; and

WHEREAS, by Resolution #TC-XXXX, approved October 15, 2015, the Transportation Commission updated Resolution #TC-3052 to provide that the feasibility of toll-free travel for vehicles carrying three or more occupants (HOV-3+) be considered with respect to its impact on safety, the ability to achieve established performance measures on tolled managed lanes, financial feasibility, and other factors which may be applicable, for all planned or future tolled managed lanes that are part of the state highway system; and

WHEREAS, pursuant to § 43-4-806, *et seq.*, C.R.S., the General Assembly created the High Performance Transportation Enterprise (HPTE) as a government-owned business within CDOT to pursue innovative means of more efficiently financing important surface transportation projects that will improve the safety, capacity, and accessibility of the surface transportation system; and

WHEREAS, HPTE and CDOT are currently undertaking the procurement of the C-470 Express Lanes Segment 1 Project, which is planned to add two tolled express lanes westbound from I-25 to Colorado Blvd., one tolled express lane westbound from Colorado Blvd. to Wadsworth Blvd.; and one tolled express lane eastbound from Platte Canyon Road to I-25, with a desire to extend the tolled express lanes in each direction to Kipling Blvd. as funding allows; and

WHEREAS, in accordance with the general policy in favor of HOV-3+, HPTE and CDOT staff undertook a HOV-3+ Analysis with respect to the C-470 Tolloed Express Lanes Project; and

WHEREAS, the HOV-3+ Analysis determined that accommodating HOV-3+ is not currently financially feasible for the C-470 Express Lanes Segment 1 Project, as it would result in a funding gap of approximately \$40 million in the preferred financing scenario for the project and there are currently no other funding sources available to close the gap; and

WHEREAS, the analysis further determined that accommodation of HOV-3+ is projected to reduce excess toll revenues by approximately \$100 million over 40 years, potentially delaying future additional corridor improvements; and

WHEREAS, in order to facilitate the financing of the C-470 Express Lanes Segment 1 Project, the Board of Directors of the HPTE has recommended that the Transportation Commission not include toll-free HOV-3+ travel for the C-470 Tolloed Express Lanes; and

WHEREAS, the Transportation Commission's determination in the resolution with respect to toll-free HOV-3+ travel is not intended to affect or prejudice in any way the ongoing NEPA process, and the determination not to include toll-free HOV-3+ travel for the C-470 Tolloed Express Lanes is contingent upon a final determination from FHWA on a Proposed Action based on the C-470 Corridor Revised Environmental Assessment.

NOW THEREFORE BE IT RESOLVED, the Transportation Commission hereby determines that offering toll-free HOV-3 travel in the C-470 Tolloed Express Lanes is not feasible at this time, and declares that the C-470 Tolloed Express Lanes will be exempted from the general policy that tolloed managed lane corridors permit HOV-3 vehicles toll-free.

BE IT FURTHER RESOLVED, if financing conditions permit reconsideration of this determination at a future date, HPTE and CDOT staff should evaluate a re-designation of the C-470 Tolloed Express Lanes as an HOV-3+ corridor in accordance with Transportation Commission HOV policy guidance and, if conditions warrant such re-designation, present such findings to the Transportation Commission for its consideration.


Herman Stockinger, Secretary
Bridge Enterprise Board of Directors

10-20-15
Date

ATTACHMENT 2

DRAFT Additional Information Requirements for Roadway Tolling Projects Proposed by CDOT or the Colorado High Performance Transportation Enterprise (HPTE) for Inclusion in the DRCOG Fiscally Constrained Regional Transportation Plan

Amended by DRCOG Board TBD, 2016

Projects proposed by CDOT or HPTE with a tolling component for inclusion in the DRCOG Fiscally Constrained Regional Transportation Plan (FC-RTP) will include base information required of sponsors to support all types of project requests.

The DRCOG Board also requires the information described below be submitted for any project with a tolling component (tolling, High Occupancy Vehicle (HOV), and/or related aspects). In particular, C.R.S. 43-4-805.5 (pursuant to HB05-1148) requires that five categories be addressed in HPTE tolling submittals to DRCOG for inclusion in the FC-RTP: operations, technology, project feasibility, project financing, and other federally required information. CDOT/HPTE will submit the following information to DRCOG:

1. Operations – Description of the tolling component of the project, including the following:
 - Pricing Structure: Variable, dynamic, or fixed toll rates
 - Toll Lane Separation: Barrier protected or buffered lanes
 - Access/Egress: Locations of slip ramps to general purpose lanes and “direct connect” ramps to interchanges and/or other toll facilities
 - Relationship to overall regional toll highway system
 - Other unique operational features
2. Technology: Confirmation that the toll facility will not require stopping to pay cash and will use transponders and/or tag readers that are interoperable with the region’s other toll facilities. If this is not the case, please explain.
3. Project Feasibility:
 - Summarize the tolling component’s technical feasibility, including implementation opportunities and constraints at a planning level of detail
 - Provide estimated daily, directional traffic volumes for (as applicable):
 - Base Year General Purpose Lanes
 - Forecast Year General Purpose Lanes
 - Forecast Year Toll Facility
 - Forecast Year Total

ATTACHMENT 2

DRAFT Additional Information Requirements for Roadway Tolling Projects Proposed by CDOT or the Colorado High Performance Transportation Enterprise (HPTE) for Inclusion in the DRCOG Fiscally Constrained Regional Transportation Plan

Amended by DRCOG Board TBD, 2016

4. Project Financing:
 - Capital costs for the project with major components and key assumptions, including inflation and contingencies
 - Operation and maintenance add-ons for the toll facility – costs that are in addition to normal non-toll CDOT roadway O&M – and inflation assumptions
 - Financial assumptions, including non-traditional financing sources and innovative financing
 - Identification of public sector financial responsibility if revenue is not sufficient to meet annual costs after toll facility is built and operating
 - Description of how and where excess revenues will be allocated, should toll revenues exceed those needed to build, maintain, and operate the facility
5. Any other federally required information, if applicable
6. Other Information and assistance:
 - CDOT HOV Policy (October 2015) – How does the proposed tolling component address CDOT’s HOV Policy and Transportation Commission Resolution (TC-15-10-5) regarding the feasibility of toll-free HOV3+?
 - If the proposed project does not include toll-free HOV, explain why it does not?
 - Does the proposed tolling component include provisions for transit service? If not, why?
 - A summary of the environmental examinations and other studies completed to date and those anticipated in the future with key milestones and timeline.
 - A commitment to follow CDOT environmental stewardship guide during project development, including the identification of impacts and mitigation measures.
 - A summary of consultation with local governments and other MPOs/TPRs completed to date, with issues and resolution; a plan for future additional consultation with local governments and other MPOs/TPRs during project development; and the relationship of the project to local transportation plans.
 - Assistance to DRCOG staff with response to public comment as needed.

ATTACHMENT 3

DRAFT Additional Information Requirements for Non-CDOT/HPTE Roadway Tolling Projects Proposed for Inclusion in the DRCOG Fiscally Constrained Regional Transportation Plan

Amended by DRCOG Board TBD, 2016

Projects proposed by non-CDOT/HPTE entities, such as private toll companies or toll highway authorities, for inclusion in the DRCOG Fiscally Constrained Regional Transportation Plan (FC-RTP) will include base information required of sponsors to support all types of project requests.

In addition, C.R.S. 7-45-105 and 106 (pursuant to HB06-1003) require that five categories be addressed in private toll company submittals to DRCOG for inclusion in the FC-RTP: operating plan, technology, project feasibility, long-term project viability (project financing), and environmental documentation. The project sponsor will submit the following information to DRCOG:

1. Operating plan – Description of the tolling component, including the following:
 - Pricing Structure: Variable, dynamic, or fixed toll rates
 - Toll Lane Separation: Barrier protected or buffered lanes
 - Access/Egress: Locations of slip ramps to general purpose lanes and “direct connect” ramps to interchanges and/or other toll facilities
 - Relationship to overall regional toll highway system
 - Other unique operational features
2. Technology: Confirmation that the toll facility will not require stopping to pay cash and will use transponders and/or tag readers that are interoperable with the region’s other toll facilities. If this is not the case, please explain.
3. Project feasibility:
 - Summarize the tolling component’s technical feasibility, including implementation opportunities and constraints at a planning level of detail
 - Provide estimated daily, directional traffic volumes for (as applicable):
 - Base Year General Purpose Lanes
 - Forecast Year General Purpose Lanes
 - Forecast Year Toll Facility
 - Forecast Year Total
 - Identify any proposed non-compete clauses (probable restrictions on improvements to other roadways or transit facilities)

ATTACHMENT 3

DRAFT Additional Information Requirements for Non-CDOT/HPTE Roadway Tolling Projects Proposed for Inclusion in the DRCOG Fiscally Constrained Regional Transportation Plan

Amended by DRCOG Board TBD, 2016

4. Long-term project viability (project financing):
 - Capital costs for the project with major components and key assumptions, including inflation and contingencies
 - Operation and maintenance costs and inflation assumptions for the toll facility
 - Financial assumptions, including non-traditional financing sources and innovative financing.
 - Identify public funding sources or public financing instruments, if applicable
 - Identification of public sector financial responsibility if revenue is not sufficient to meet annual costs after toll facility is built and operating
5. Environmental documentation, including:
 - Description of environmental, social, and economic effects of the proposed toll facility
 - Identification of feasible measures, and cost, to avoid or otherwise mitigate adverse impacts
 - Defined commitment of acceptable environmental mitigation activities and cost
6. Other information and assistance:
 - Does the proposed tolling component include toll-free HOV3+? If not, explain why?
 - Does the proposed tolling component include provisions for transit service? If not, why?
 - A summary of studies completed to date and those anticipated in the future with key milestones and timeline
 - A summary of consultation with local governments and other MPOs/TPRs completed to date, with issues and resolution; a plan for future additional consultation with local governments and other MPOs/TPRs during project development; and the relationship of the project to local transportation plans
 - Identify land use assumptions within 5 miles of the toll highway corridor
 - Discuss consideration given to available mitigation of demonstrable negative impacts on the local governments or its citizens

ATTACHMENT 3

DRAFT Additional Information Requirements for Non-CDOT/HPTE Roadway Tolling Projects Proposed for Inclusion in the DRCOG Fiscally Constrained Regional Transportation Plan

Amended by DRCOG Board TBD, 2016

- Identify commitments to offset incremental costs of public services that will be necessary as a result of development of the project
- Assist DRCOG staff with response to public comment as needed

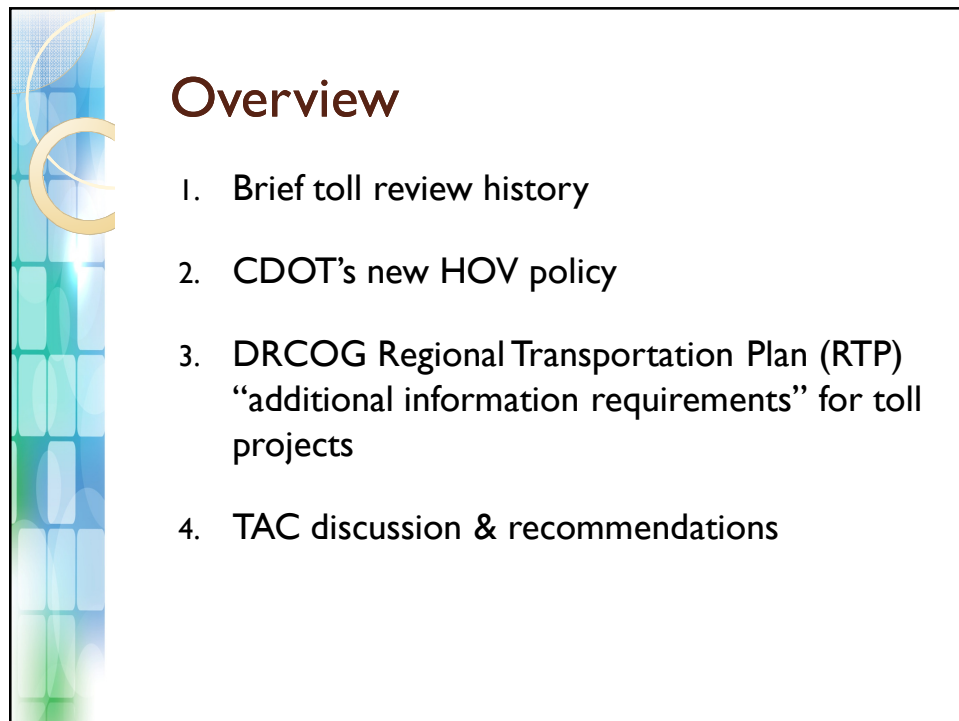


The slide features a green header with the title "HOV Policy & Regional Transportation Planning Process" in blue text. Below the title, it says "Regional Transportation Committee – July 19, 2016". The background is a grid of blue and green squares with a glowing effect. In the bottom right corner, there is a logo for "Transportation Planning and Operations drcog" with the text "DENVER REGIONAL COUNCIL OF GOVERNMENTS" below it. On the left side, there are two overlapping orange circles.

HOV Policy & Regional Transportation Planning Process

Regional Transportation Committee – July 19, 2016

Transportation Planning and Operations
drcog
DENVER REGIONAL COUNCIL OF GOVERNMENTS



The slide has a vertical decorative bar on the left side with a blue and green grid pattern and a large orange 'C' shape. The main content is a list of four items under the heading "Overview".

Overview

1. Brief toll review history
2. CDOT's new HOV policy
3. DRCOG Regional Transportation Plan (RTP) "additional information requirements" for toll projects
4. TAC discussion & recommendations

What are HOV Lanes?

Credit: 36 Commuting Solutions

Managed Lane/Toll Facilities

- N. I-25 & US-36
 - ✓ HOV 3+ free
- I-70 Mountain
 - ✓ Peak period toll
 - ✓ No HOV 3+ free
- S. Santa Fe Dr.
 - ✓ HOV lane
 - ✓ No toll/free aspect
- C-470 (funded)
 - ✓ Managed toll lane
 - ✓ No HOV 3+
- Future HOV 3+ projects
 - ✓ I-70, I-25 north
- Toll roads (E-470, NWP)
 - ✓ Future: Jefferson Pkwy.
- Bus Rapid Transit/Bus
 - ✓ I-25, US-36, SH-119, Colfax
 - ✓ Broadway/Lincoln bus lanes

I. Brief Toll Review History

- 2002: HB-1310 created Colorado Tolling Enterprise (CTE)
- 2005: HB-1148 – MPO review of CTE projects
 - “...no action...until after...reviewed by MPO”
- 2006: DRCOG adopted “procedures” for responding to HB-1148
- 2006: HB-1003 applied HB-1148 language to “private toll companies”
- 2009: DRCOG adopted procedures for RTP toll amendments – one for CTE, one for private toll companies
 - replaced 2006 HB-1148 procedures
 - Attachments 2&3 in packet
- 2009: FASTER bill passed – abolished CTE, established HPTE

2. CDOT HOV Policy (Oct. 2015)

For managed corridors/lanes, in recognition of the benefits of HOV, begin with the assumption that HOV-3+ is free; however, there are conditions under which this strategy may not be feasible. For example, if HOV-3+ results in any of the following issues:

- *Safety concerns*
- *Corridor performance measures will not be met*
- *Renders the transportation improvements financially infeasible*

Each managed corridor/lane can be assessed based on its specific characteristics and may be reassessed as conditions change over time.



3. RTP Information Requirements

- New RTP projects with tolling component, and/or:
 - Scope change (e.g., widen 4-6 lanes to widen 4-8 lanes)
 - Operational change (e.g., HOV 2+ to HOV 3+)
 - Does not include air quality staging period change
- Separate versions for CDOT/HPTE projects and non-CDOT/HPTE projects (based on state statute)
- Both address operations, technology, feasibility, financing, environmental, & coordination



4a. TAC Discussion

- Discussion spanned 4 meetings (January-May)
- Updates to RTP requirements
- Regional policy or narrower approach?
- How does CDOT policy address exceptions and transit service?

Outcome: HOV topic is important – best addressed through existing RTP requirements for toll project reviews



4b. TAC Recommendations

- Directly incorporate CDOT HOV policy in CDOT/HPTE RTP requirements (Attachment 2)
- Ask about HOV 3+ provision in private toll company RTP requirements (Attachment 3)
- Ask about transit service provision in both versions of RTP requirements



HOV Policy & Regional Transportation Planning Process

Regional Transportation Committee – July 19, 2016

ATTACHMENT E

To: Chair and Members of the Regional Transportation Committee

From: Douglas Rex, Director, Transportation Planning and Operations
303-480-6745 or drex@drcog.org

Meeting Date	Agenda Category	Agenda Item #
July 19, 2016	Information	7

SUBJECT

Status update on the development of an 8-hour ozone moderate area State Implementation Plan (SIP) for the Denver Metro/North Front Range Area

PROPOSED ACTION/RECOMMENDATIONS

N/A

ACTION BY OTHERS

N/A

SUMMARY

In 2012, the Denver Metro/North Front Range Area was designated as Marginal nonattainment for the 2008 National Ambient Air Quality Standard (NAAQS) for ozone. On April 11, 2016, due to the region's inability to demonstrate attainment by the end of 2014 ozone season, the U.S. Environmental Protection Agency (EPA) reclassified the Denver Metro/North Front Range to a Moderate nonattainment area, which has an attainment deadline of July 20, 2018 and requires the development and submittal of a new SIP.

The Regional Air Quality Council (RAQC) has worked for over a year with state agencies, local governments, industry, environmental groups, and citizens to develop a new SIP to ensure compliance with federal air quality standards. RAQC staff will present information about the current status and implications of the new SIP.

PREVIOUS DISCUSSIONS/ACTIONS

N/A

PROPOSED MOTION

N/A

ATTACHMENT

RAQC Presentation on the current status of the SIP

ADDITIONAL INFORMATION

If you need additional information, please contact Douglas Rex at 303 480-6747 or drex@drcog.org.

Regional Air Quality Council

SIP Overview

DRCOG Regional
Transportation Committee
July 19, 2016



Ken Lloyd
Executive Director



REGIONAL AIR QUALITY COUNCIL

REGIONAL AIR QUALITY COUNCIL

Federal Standards

✓ Carbon Monoxide – *attained in 1995*

✓ PM-10 – *attained in 1993*

✓ PM-2.5 – *never violated*

✓ 1997 Standard

✓ 2006 Standard

✓ 2012 Standard

✓ Ozone

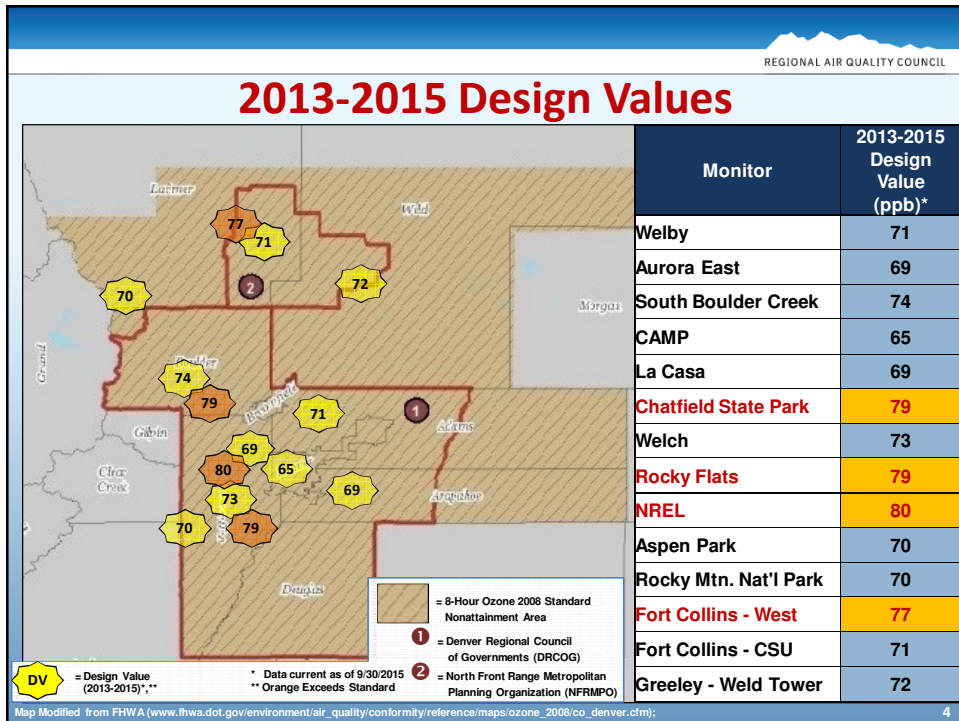
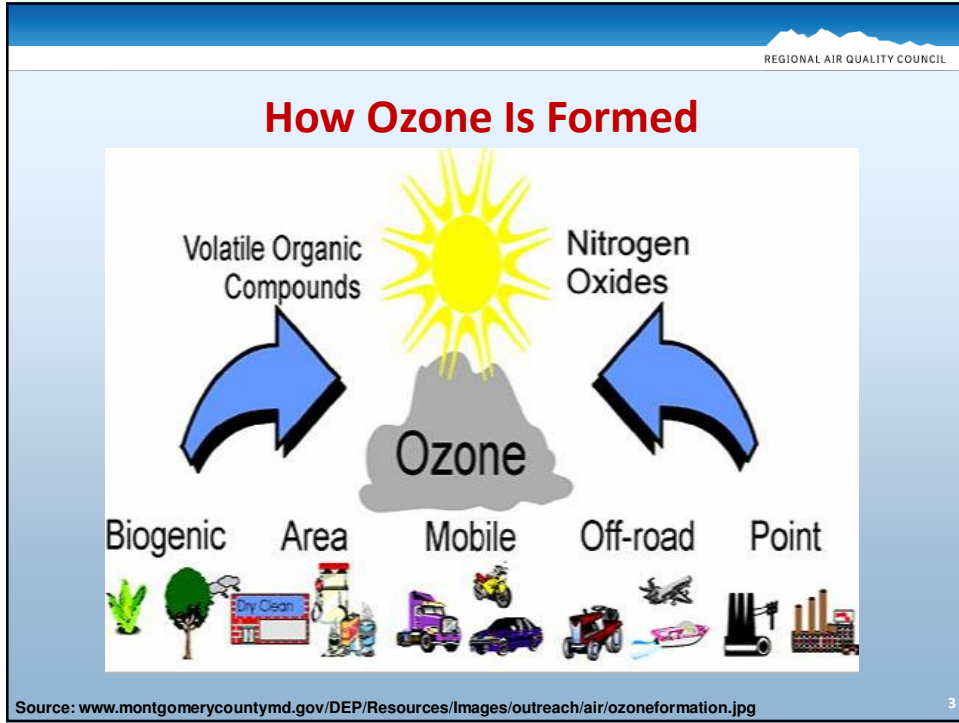
✓ 1-hour standard (125 ppb) – *attained in 1987*

✓ 1997 Standard (84 ppb) – *attained in 2009*

✗ 2008 Standard (75 ppb) – *out of compliance*

✗ 2015 Standard (70 ppb) – *out of compliance*

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REGIONAL AIR QUALITY COUNCIL

2008 Ozone Standard – 75 ppb

- ◆ Established by EPA in March 2008
- ◆ Denver/NFR area designated Marginal nonattainment area in 2012
- ◆ Region failed to attain standard as required by July 2015
- ◆ Region has been “bumped up” to Moderate Area by EPA
- ◆ New air quality plan (SIP) due in 2017
- ◆ RAQC, CDPHE, and AQCC are in process of developing the plan

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REGIONAL AIR QUALITY COUNCIL

Status of Initial 2008 Nonattainment Areas

46 Areas Nationwide

Marginal: Bump-Up (Not Attaining based on 2012-14 data)			11 areas
Atlanta, GA	El Centro, CA		New York-New Jersey, NY-NJ
Bakersfield, CA	Grass Valley, CA		Phoenix, AZ
Chicago, IL	Hartford, CT		San Diego, CA
<i>Denver/North Front Range, CO</i>	Mariposa County, CA		
Marginal: 1-yr. Extension (based on 2014 data)			8 areas
Cleveland, OH	Pittsburgh, PA		Sheboygan, WI
Houston, TX	St. Louis, MO		Washington-Arlington, DC-VA
Philadelphia, PA	San Luis Obispo, CA		
Marginal: Attained by July 20, 2015 (based on 2012-14 data)			17 areas
Allentown-Bethlehem, PA-NJ	Columbus, OH		Reading, PA
Baton Rouge, LA	Dukes County, MA		Red Bluff, CA
Calaveras County, CA	Jamestown, NY		Rock Springs, WY
Charlotte-Concord, NC-SC	Knoxville, TN		San Francisco-Oakland, CA
Chico, CA	Lancaster, PA		Seaford, DE
Cincinnati, OH	Memphis, TN		
Moderate and Above (2018+ Attainment Date)			10 areas
Baltimore, MD	Morongo Band of Mission Indians, CA		Oxnard, CA
Dallas-Fort Worth, TX			Riverside-San Bernardino, CA
Los Angeles-San Bernardino, CA	Pechanga Band of Luiseno		Sacramento, CA
Los Angeles-South Coast Basin, CA	Mission Indians, CA		San Joaquin, CA

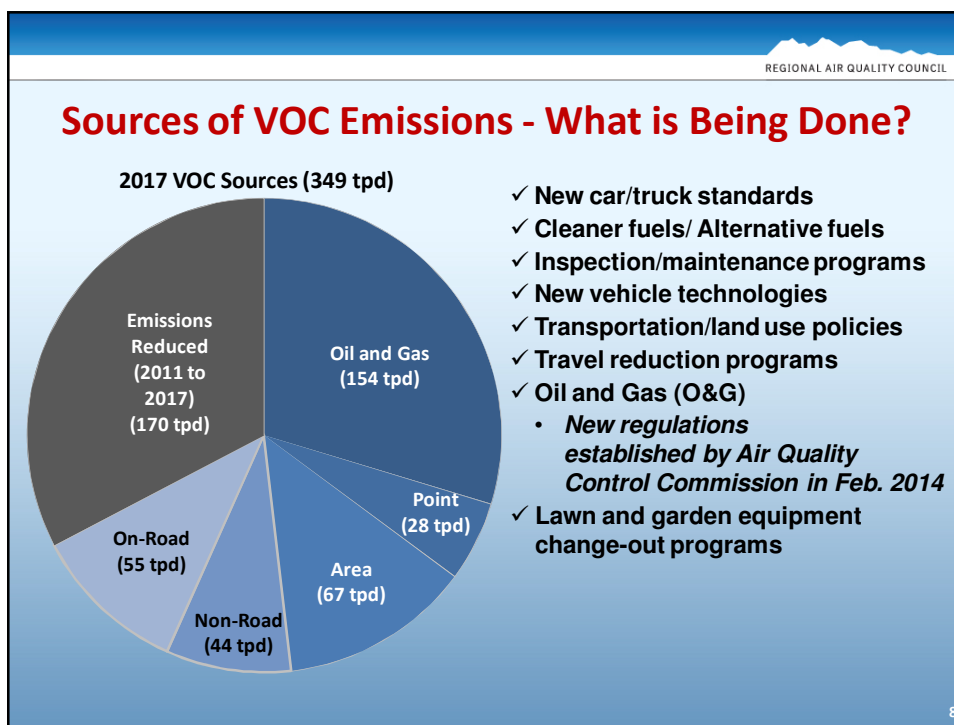
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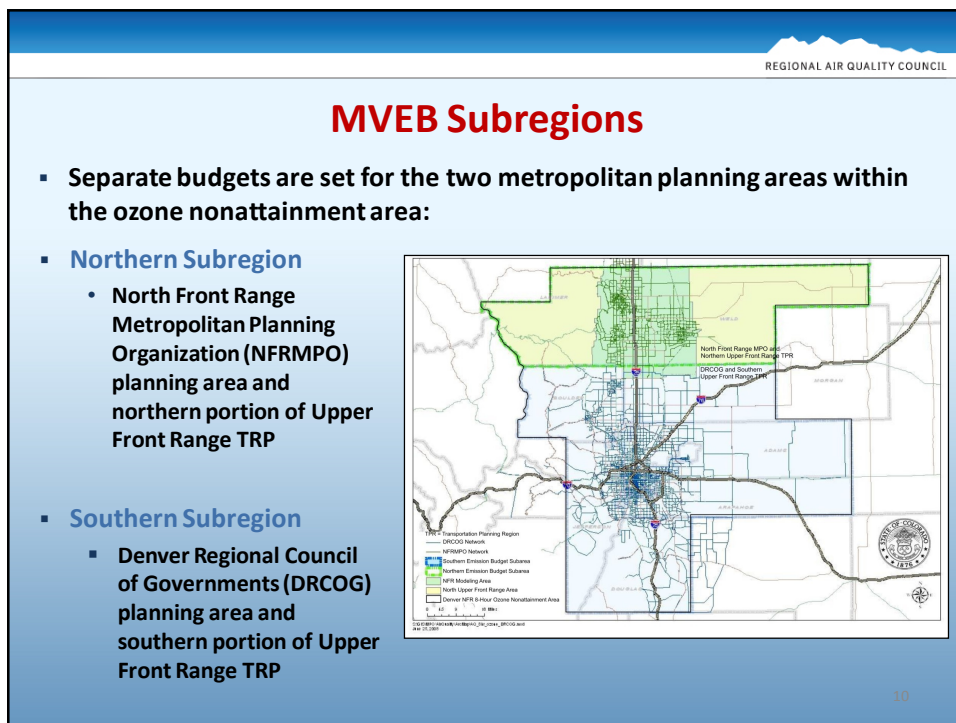
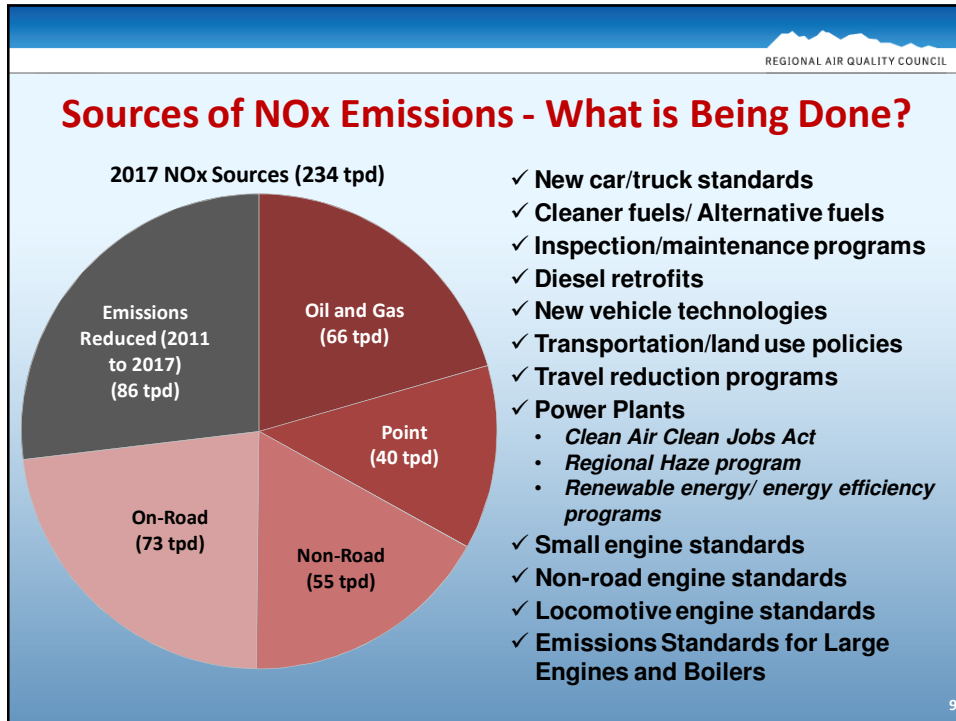
REGIONAL AIR QUALITY COUNCIL

Required SIP Elements

- 2011 Base Year Emissions Inventory
- Reasonable Further Progress (RFP) Demonstration
 - 15% reduction in VOC emissions by 2017
- Attainment Demonstration And Weight of Evidence Analysis
- Reasonably Available Control Measures (RACM) Analysis
 - Technologically and economically feasible measures
- Stationary Source Control Programs
 - Reasonably Available Control Technology (RACT) for existing sources
 - Nonattainment New Source Review (NSR) for new sources
- Motor Vehicle Inspection and Maintenance (IM) Program
- Contingency Measures Plan
- Motor Vehicle Emissions Budgets (MVEB)

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REGIONAL AIR QUALITY COUNCIL

Setting New Budgets

- New budgets are being set for the 2008 Ozone NAAQS as part of this SIP revision
- Based on 2017 mobile source emissions inventory
- Will again be set separately for each subregion
- Will be effective upon EPA's finding of adequacy or approval
 - **Estimated mid to late 2017**

Motor Vehicle Emissions Budgets	2017	
	VOC (tpd)	NOx (tpd)
Northern Subarea Budget <i>(NFRMPO & UFR TPR Subarea)</i>	8	12
Southern Subarea Budget <i>(DRCOG & UFR TPR Subarea)</i>	47	61
Total Nonattainment Area Budget <i>(Entire Nonattainment Area)</i>	55	73

tpd = tons per day

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REGIONAL AIR QUALITY COUNCIL

SIP Approval Schedule

Action	Date
RAQC Board Review of SIP Chapters	March – June 2016
RAQC Board Approval and Endorsement of Proposed SIP	June 30, 2016
AQCC Pre-Hearing Process	July – October 2016
Request for Hearing Before AQCC	July 21, 2016
Notice of AQCC Hearing Published in Colorado Register	August 10, 2016
Deadline for Requesting Party Status	Mid to late August 2016
Party Status Meeting	Late Aug./ Early Sept. 2016
Pre-hearing Statements Due	Mid Sept. 2016
Pre-hearing Conference	Late Sept. 2016
AQCC Rulemaking Hearing and SIP Approval	October 20-21, 2016

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REGIONAL AIR QUALITY COUNCIL

New 2015 Ozone Standard - 70 ppb

- ◆ CAA section 109(d) requires EPA to review the scientific information and National Ambient Air Quality Standards every five years.
- ◆ In setting NAAQS, EPA may not consider cost. (*Whitman v. American Trucking Associations*, 531 U.S. 457, 473 (2001))
- ◆ EPA was under court order to review standard by December 1, 2014 and finalize decision by October 1, 2015.
- ◆ EPA proposed a standard range between 65-70 ppb in Dec. 2014
- ◆ EPA Administrator issued the final standard of **70 ppb** on Oct. 1, 2015

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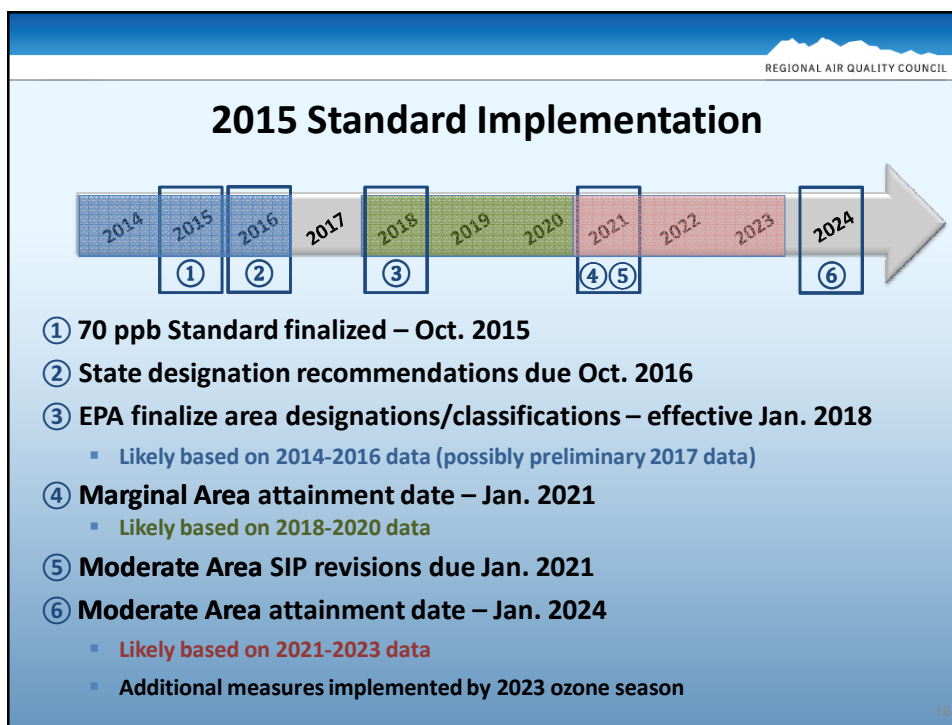
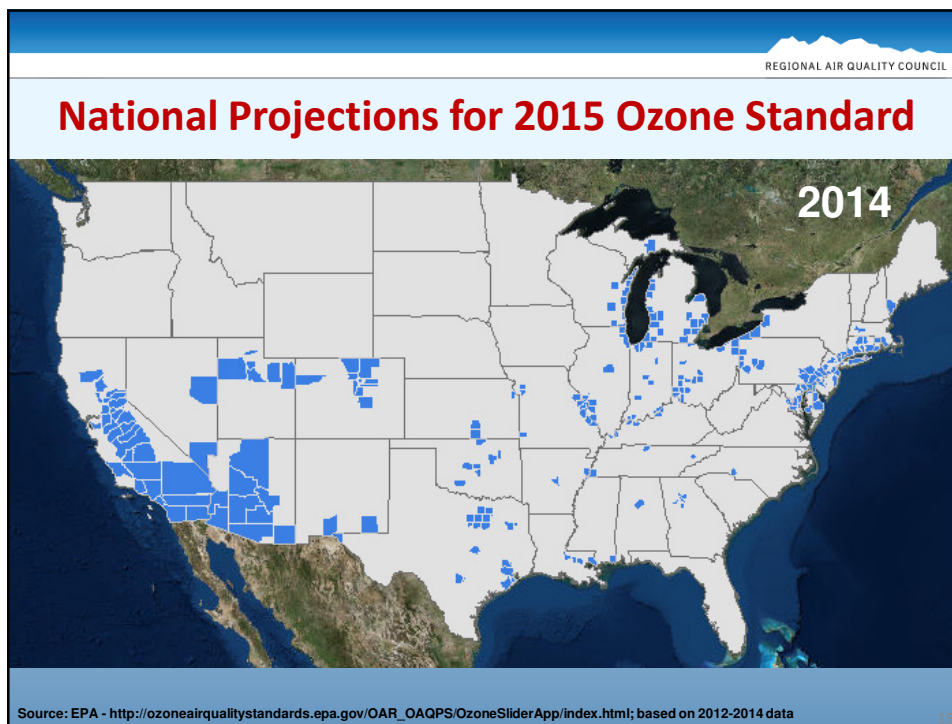
Statewide Ozone Status

Colorado Ozone Sites
Comparison to
70 ppb
Federal Ozone Standard
2013 - 2015 (thru 9/30)

Ozone Standard:
3-year avg. of 4th max. 8-hr. values

- Above level of standard (3+ years of data available)
 (Based on 3-yr. avg. of 4th max. for 2013 - 2015)
- Above level of standard (<3 years of data available)
 (Based on avg. of 4th max. for years available)
- Below level of standard (3+ years of data available)
 (Based on 3-yr. avg. of 4th max. for 2013 - 2015)
- Below level of standard (<3 years of data available)
 (Based on avg. of 4th max. for years available)

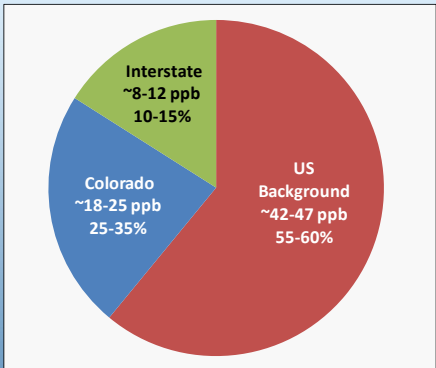
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Background Ozone

- ◆ Background ozone is a significant issue, especially in the West
- ◆ “Background ozone” is ozone arising from natural events and non-U.S. anthropogenic sources
- ◆ Past and recent studies have shown >55-60% of high ozone in NFR and Colorado due to background ozone
- ◆ EPA developed a white paper on background ozone and held a workshop last month in Phoenix
- ◆ EPA is revising its Exceptional Events Rule to provide guidance for exceptional events demonstrations
- ◆ EPA offers provisions of CAA section 179B to address impact of non-U.S. sources on local areas



Source	Ozone Concentration (ppb)	Percentage of High Ozone
US Background	~42-47	55-60%
Colorado	~18-25	25-35%
Interstate	~8-12	10-15%

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REGIONAL AIR QUALITY COUNCIL

Legal Challenges to 2015 Standard

- ◆ Some states and business groups have challenged the standard in court as being too stringent
- ◆ Other states and environmental/public health groups have challenged the standard as not being stringent enough
- ◆ U.S. House of Representatives recently passed a bill delaying implementation of the standard for 8 years and increasing the periodic review to 10 years
- ◆ In the meantime, EPA and the states are moving forward with the process to implement the standard

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