

Board Officers

Jackie Millet, Chair
Elise Jones, Vice Chair
Bob Roth, Secretary
Herb Atchison, Treasurer
Sue Horn, Immediate Past Chair
Jennifer Schaufele, Executive Director

AGENDA
REGIONAL TRANSPORTATION COMMITTEE
Tuesday, October 20, 2015
8:30 a.m.
1290 Broadway
Independence Pass Board Room

1. Call to Order
2. Public Comment
3. September 15, 2015 Meeting Summary
(Attachment A)

ACTION ITEM

4. Discussion of proposed 2015 Cycle 2 Amendments to the 2040 Fiscally Constrained Regional Transportation Plan for air quality conformity modeling.
(Attachment B) Jacob Riger
5. Discussion of recommended FY 2016 and 2017 Station Area Master Plans/Urban Center planning studies.
(Attachment C) Derrick Webb
6. Discussion of recommended FY 2016 and 2017 Travel Demand Management (TDM) projects.
(Attachment D) Melina Dempsey

INFORMATIONAL ITEMS

7. Summary of draft 2014 Annual Report on Roadway Traffic Congestion in the Denver Region.
(Attachment E) Steve Cook

ADMINISTRATIVE ITEMS

8. Member Comment/Other Matters
9. Next Meeting – November 17, 2015
10. Adjournment

Disabled attendees are asked to notify DRCOG at least 48 hours in advance of the need for auxiliary aids or services

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ATTACHMENT A

MEETING SUMMARY REGIONAL TRANSPORTATION COMMITTEE Tuesday, September 15, 2015

MEMBERS PRESENT:

Shannon Gifford	Colorado Department of Transportation
Debra Perkins-Smith (Alternate)	Colorado Department of Transportation
Gary Reiff	Colorado Department of Transportation
Ed Peterson	Colorado Department of Transportation
Jackie Millet (Chair)	Denver Regional Council of Governments
Jennifer Schaufele	Denver Regional Council of Governments
Herb Atchison (Alternate)	Denver Regional Council of Governments
Robin Kniech	Denver Regional Council of Governments
Ron Rakowsky	Denver Regional Council of Governments
Ken Lloyd	Regional Air Quality Council
David Genova	Regional Transportation District
Claudia Folska	Regional Transportation District
Tom Tobiassen	Regional Transportation District
Jeff Kullman	Other-Business Interests

ALTERNATES PRESENT:

Bill Sirois (Alternate)	Regional Transportation District
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DRCOG Staff: Doug Rex, Steve Cook, Jacob Riger, Todd Cottrell, Will Soper, Mark Northrop, Matthew Helfant, Casey Collins

Call to Order

Jackie Millet called the meeting to order at 8:30 a.m.

Public Comment

There was no public comment.

Summary of July 14, 2015 Meeting

The summary was accepted as written.

ACTION ITEMS

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

Todd Cottrell presented the 3 requested amendments.

Sponsor	TIP ID	Proposed Amendment	
CDOT Reg. 1	2016-059	C-470 Managed Toll Express Lanes: Kipling to I-25	Update title (Wadsworth to I-25), scope (change one tolled express lane westbound between I-25 and Wadsworth, and eastbound between Platte Canyon and I-25; safety, operational, and ramp improvements), and increase funding (from \$100,000 to \$357,000 total funding).
Univ. of CO-Denver	2016-012	Anschutz Medical Campus Shuttle	De-federalize project; removal of CMAQ funds (\$1,509,000) and replace with local RTD funds.
RTD	TBD	Intercity Bus Purchase	Purchase 4 intercity buses to be used region-wide, using CMAQ funds transferred from TIP ID# 2016-012 (see above row)

No discussion was heard.

Ron Rakowsky 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.

Discussion and direction to staff on the key elements of the Prospectus pertaining to the role and responsibilities of DRCOG's transportation committees.

Doug Rex discussed progress on updating the Prospectus document (*Transportation Planning in the Denver Region*). The document is primarily being updated to comply with MAP-21 regulations.

Claudia Folksa commented on striving for more collaborative effort as a coalition between CDOT, RTD, and DRCOG to proactively advocate with pooled resources on transportation issues in Washington DC. Jennifer Schaufele agreed. It was noted a DRCOG team is going to Washington in late September.

Mr. Rex asked for committee direction on whether the RTC should continue to meet the day before the DRCOG Board meeting, change to a different day before the Board meeting, or change to meeting after the Board meeting. Consensus among RTC members was to change the meeting to the second week of the month; the committee will be notified when the meeting change will be implemented.

Mr. Rex asked for comment on current committee responsibilities. Robin Kneich asked for more clarity on how TAC recommendations are presented to the RTC.

ADMINISTRATIVE ITEMS

Member Comment/Other Matters

The meeting was adjourned at 9:02 a.m. The next scheduled meeting is October 20, 2015.

ATTACHMENT B

To: Chair and Members of the Regional Transportation Committee

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

Meeting Date	Agenda Category	Agenda Item #
October 20, 2015	Action	4

SUBJECT

This item concerns air quality conformity modeling associated with proposed 2015 Cycle 2 amendments to the [2040 Fiscally Constrained Regional Transportation Plan](#) (2040 RTP).

PROPOSED ACTION/RECOMMENDATIONS

Staff recommends including the proposed projects listed below in amended air quality conformity modeling networks for the 2040 RTP.

ACTION BY OTHERS

[September 28, 2015](#) TAC recommended approval.

SUMMARY

DRCOG amends the 2040 RTP up to twice a year as needed. DRCOG staff started the 2015 Cycle 2 amendment process and received several amendment requests from local governments and CDOT (Attachments 1 and 2-map). The amendments are primarily modifications to projects already included in the 2040 RTP.

Staff is recommending Board approval to include the proposed amendments in the transportation networks to be modeled for air quality conformity. The regional modeling results will be presented in conformity determination documents which will be the subject of a public hearing and further Board action in early 2016.

Note: [Per adopted Board policy \(January 2009\)](#), CDOT, as the sponsor of the I-70 East (I-25 to Chambers Rd.) managed lanes project amendment, is required to provide additional toll-related information as part of their application submittal (Attachment 3).

PREVIOUS DISCUSSIONS/ACTIONS

N/A

PROPOSED MOTION

Move to recommend to the Board of Directors inclusion of all proposed projects shown in Attachment 1 in air quality conformity modeling networks for 2015 Cycle 2 amendments to the *2040 Fiscally Constrained Regional Transportation Plan*.

ATTACHMENTS

1. Proposed 2015 Cycle 2 Amendments to *2040 Fiscally Constrained Regional Transportation Plan (2040 RTP)*
2. Map of proposed amendment locations
3. [Additional required tolling information](#) for I-70 amendment

ADDITIONAL INFORMATION

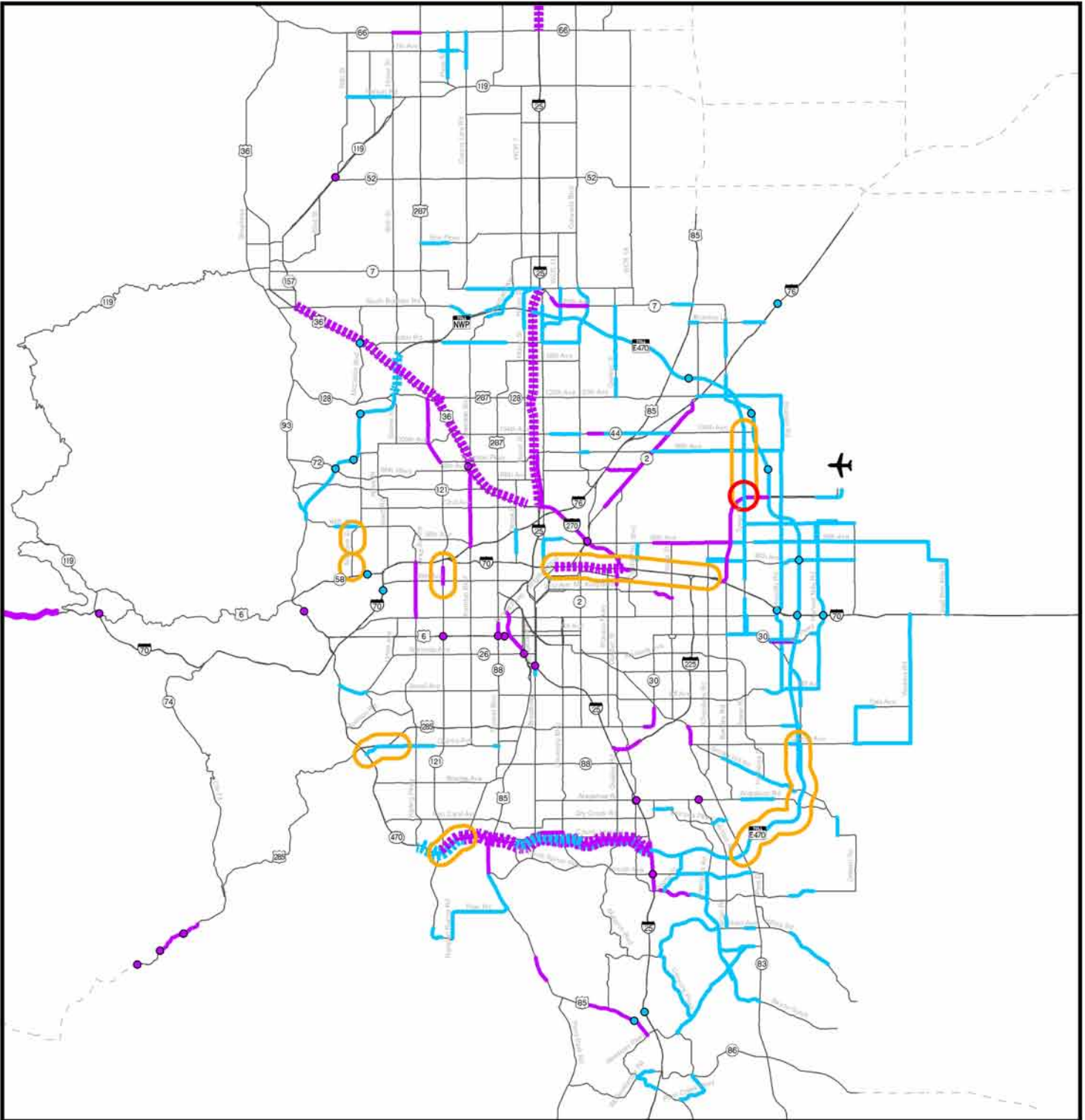
If you need additional information, please contact Jacob Riger, Long Range Transportation Planning Coordinator at (303) 480-6751 or jriger@drcog.org

ATTACHMENT 1

Proposed 2015 Cycle 2 Amendments to 2040 Fiscally Constrained Regional Transportation Plan (2040 RTP)

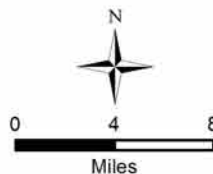
Last Revised: September 3, 2015

Agency	Project/Segment Description	Length (Miles)	Current 2040 RTP Status	Cycle 2 Amendment	Total Proj. Cost Est. (\$mil.)
CDOT	<u>C-470: new managed toll express lanes:</u> • Wadsworth Blvd. to I-25	1.0		Advance eastbound segment (1 lane) from Wadsworth Blvd. to Platte Canyon Rd. to 2015-2024 stage	
CDOT	<u>I-70: new managed lanes (HOV policy TBD)</u> • I-25 to Chambers Rd. (1 new lane in each direction)	9.6		Change scope/limits from 2 managed lanes in each direction (Brighton Blvd. to I-270) to 1 managed lane in each direction (I-25 to Chambers Rd.)	
Commerce City	Pena Blvd./Tower Rd.: construct missing on-ramp to WB Pena	NA	Not in RTP	Add to fiscally constrained network (2015-2024 stage), locally funded	\$3.8
	Tower Rd.: Pena Blvd. to 104th Ave. widening (2 to 4 lanes)	3.5	In 2015-2024 stage (2 to 6 lanes)	Change widening to 2 to 4 lanes, keep in 2015-2024 stage	\$40.5
E-470 Authority	E-470: Parker Rd. to Quincy Ave. widening (4 to 6 lanes)	8.1	In 2025-2034 stage	Advance to 2015-2024 stage	\$80.0
Jefferson County	McIntyre St.: 44th Ave. to 52nd Ave. widening (2 to 4 lanes)	1.0	Not in RTP	Add to fiscally constrained network (2015-2024 stage), locally funded	\$3.5
	McIntyre St.: 52nd Ave. to 60th Ave. widening (2 to 4 lanes)	1.0	Not in RTP	Add to fiscally constrained network (2015-2024 stage), locally funded	\$6.5
	Quincy Ave: C-470 to Simms. St. widening (2 to 4 lanes)	1.9	In 2025-2034 stage	Advance to 2015-2024 stage	\$8.0
Wheat Ridge	Wadsworth Blvd.: 35th Ave. to 48th Ave. widening (4 to 6 lanes)	1.2	In 2025-2034 stage	Advance to 2015-2024 stage	\$31.6



LEGEND

- 2040 RTP Project Locations**
- | | |
|---|---|
| Add New Lanes | Add Managed Lanes |
| <ul style="list-style-type: none"> —●— Regionally Funded —●— 100% Locally Derived | <ul style="list-style-type: none"> Regionally Funded 100% Locally Derived |
| Amendment Locations | |
| ○ Roadway | ○ Interchange |



SOURCE DATA:
Enter all data sources here, included base map information

This data is intended for informational purposes only. DRCOG provides this information on an "as is" basis and makes no guarantee, representation or warranty, either express or implied, that the data will be error free. DRCOG further makes no guarantees, representations or warranties, either express or implied, as to the completeness, accuracy or correctness of the data, or as to merchantability or fitness of the data for a particular use or purpose. DRCOG is not responsible to any user for any costs, expenses, liabilities or damages arising from inconsistencies in its data or from any use of the information.

Projection: State Plane Colorado Central, NAD 83 (feet)

ATTACHMENT C

To: Chair and Members of the Regional Transportation Committee

From: Derrick Webb, Regional Planner
303 480-6728 or dwebb@drcog.org

Meeting Date	Agenda Category	Agenda Item #
October 20, 2015	Action	5

SUBJECT

Approval of projects recommended by the Project Review Panel to be funded in the Station Area Master Plan/Urban Center Studies (STAMP/UC) set-aside for fiscal years 2016 and 2017.

PROPOSED ACTION/RECOMMENDATIONS

Staff recommends approval of the projects recommended by the STAMP/UC Studies Project Review Panel.

ACTION BY OTHERS

[September 28, 2015](#) - TAC recommended approval of project list for FY 2016 and 2017 STAMP/UC set-aside.

[April 15, 2015](#) - DRCOG Board approved the FY 2016 and 2017 STAMP/UC set-aside process.

SUMMARY

Seventeen project applications were submitted for a total request of \$2.66 million in federal CMAQ funds. The approved 2016-2021 TIP Policy provides \$1.2 million in CMAQ over FY 2016 and 2017 (\$600K per year).

The panel recommended funding seven studies using \$1,150,000 in federal funds. The projects recommended are shown in Attachment 1.

The project review panel included RTD and representatives from eligible entities, including local governments that did not submit studies for consideration (City of Commerce City, City of Lone Tree, Town of Castle Rock, Denver South EDP, and City of Golden). DRCOG staff provided administrative support to the panel and served as the point of contact for applicants.

Upon approval by the Board, an administrative modification to the TIP will be conducted to amend the selected projects into the 2016-2021 TIP and to shift the CMAQ funding by fiscal year (current recommendation: \$590,000 in FY16 and \$560,000 in FY17). Sponsors of selected studies will incur an administrative fee imposed by RTD (~\$5,900 per study). This fee will come from the federal award amount (80%) and the local match contribution (20%).

PREVIOUS DISCUSSIONS/ACTIONS

N/A

PROPOSED MOTION

Move to recommend to the Board of Directors the attached list of projects for the Station Area Master Plan/Urban Center set-aside for fiscal years 2016 and 2017.

ATTACHMENTS

1. Station Area Master Plan/Urban Center Project Funding Recommendations w/Summary
2. STAMP/UC Project Review Panel

ADDITIONAL INFORMATION

If you need additional information, please contact Derrick Webb, Regional Planner, Regional Planning and Operations at 303 480-6728 or dwebb@drcog.org.

ATTACHMENT 1

FY 2016 and 2017 Station Area Master Plan/Urban Center Project Set-Aside Recommendations

Sponsor	Study	FY 16		FY 17	
		Federal	Local	Federal	Local
36 Commuting Solutions	Northwest Corridor Bicycle and Pedestrian Final Wayfinding Plans Final and Sign Design	\$150,000	\$37,500		
City of Arvada	Gold Line Kipling Ridge Station	\$80,000	\$20,000		
City and County of Denver	National Western Center Parking and Transportation Management Study	\$200,000	\$50,000		
Transportation Solutions	Multi-Station Plan and Mobility Study: Colorado and University Stations	\$160,000	\$40,000		
City of Aurora	Aurora City Center Train/Traffic and Transportation Network Study			\$200,000	\$50,000
City of Longmont	Main Street Corridor Plan			\$200,000	\$50,000
City of Thornton	North Thornton and Highway 7 TOD Master Plan			\$160,000	\$40,000

Not recommended for funding

City and County of Broomfield	SH 7 Arterial BRT Station Design, Multimodal Station Connectivity, and ROW Needs
City of Centennial	Arapahoe Urban Center
City and County of Denver	Urban Mobility Hubs Planning
City and County of Denver	North Cap Hill/Cheesman/Cap Hill/Colfax Urban Center Neighborhood Plan
City of Englewood	Englewood Light Rail Corridor II
City of Englewood	Englewood Light Rail Corridor III
City of Longmont	Southeast Longmont Urban Renewal Area Design and Implementation Plan
City of Louisville	Downtown Louisville Parking Structure Study
Town of Parker	Downtown Parker Urban Center Parking Implementation Strategic Plan
RTD	First and Last Mile Strategic Plan

ATTACHMENT 1

Summaries of Applications Received

Project Sponsor: 36 Commuting Solutions

Federal amount requested: \$150,000

Local match committed: \$37,500

Proposed Study: Northwest Corridor Bicycle and Pedestrian Final Wayfinding Plans & Sign Design

Type: Next Step

Proposal Summary: The study area would include the US36 Bikeway from Westminster to Boulder. There are eight urban centers/activity centers located throughout this study area (S Westminster Activity Center, Westminster Center Activity Center, Westminster Promenade Activity Center, Urban Transit Village, Interlocken Loop Activity Center, Superior Town Center, University Hill, Downtown Boulder, and 28th/30th Streets) – four of which are emerging. The goal of this project will be to implement a unified corridor-wide signage and wayfinding system that can be implemented by each community. This unified approach will strengthen multimodal connections and foster access to an expanded range of transportation options within the Northwest Corridor communities.

Project recommendation committee finding: Recommended for funding in FY16

Amount Recommended: \$150,000

Sponsor: City of Arvada

Federal amount requested: \$80,000

Local match committed: \$20,000

Proposed Study: Gold Line Kipling Ridge Station

Type: Next Steps

Proposal: The proposed study area includes the Olde Town/New Town Urban Center, Ralston Fields Urban Center, and the Northwest Wheat Ridge TOD Urban Center. The Gold Line Ridge Station next Step Study is an effort to transform Arvada's planning level land-use and transportation studies at the Kipling Ridge Station into actionable plans and cost estimates. This study will first conduct an engineering survey of unimproved sites identified within existing plans. It will then identify issues that were too detailed for the planning level documents and establish criteria for transit access routes. The process will include recent walking and biking audits conducted by the Arvada Citizens' Transportation Committee and coordinate with the City of Wheat Ridge and CDOT for routes within a 2-mile radius of the Kipling Ridge Station.

Project recommendation committee finding: Recommended for funding in FY16

Amount Recommended: \$80,000

ATTACHMENT 1

Sponsor: City of Aurora

Federal amount requested: \$200,000

Local match committed: \$50,000

Proposed Study: Aurora City Center Train/Traffic and Transportation Network Study

Type: Next Step

Proposal Summary: The area of interest is bounded by 2nd Ave on the north, Peoria Street on the west, Mississippi Ave on the south and Chambers Road on the east. Major areas of interest within this study area include the Town Center at Aurora, Metro Center, City Place, and the Aurora Municipal Center. This study will also fully assess two stations and 8 signalized intersections on the Aurora Line-I-225 Rail system. Due to the existing activity levels and the new development occurring throughout City Center and the resultant increase in multimodal trips, this proposed study to develop and apply the analysis tools to optimize mobility demonstrates the deployment of an innovative model of transportation planning and engineering in the metro area.

Project recommendation committee finding: Recommended for funding in FY17

Amount Recommended: \$200,000

Sponsor: City and County of Denver (Department of Public Works)

Federal amount requested: \$200,000

Local match committed: \$50,000

Proposed Study: National Western Center Parking and Transportation Management Study

Type: Area planning and implementation activities

Proposal Summary: This proposed study area encompasses the North Metro, East Line and Gold Lines and includes the Globeville, Elyria and Swansea neighborhoods. The vision for this study is for the National Western Center and surrounding neighborhoods to be serviced by a multimodal transportation system that provides a full array of mobility choices. Building on the framework and vision developed in the NWC Master Plan (Spring 2015), the next step is to fully consider how to best utilize a multimodal transportation system to adequately accommodate anticipated daily and special event visitors to the campus and area.

Project recommendation committee finding: Recommended for funding in FY16

Amount Recommended: \$200,000

ATTACHMENT 1

Sponsor: City of Longmont

Federal amount requested: \$200,000

Local match committed: \$50,000

Proposed Study: Main Street Corridor Plan

Type: Corridor-wide

Proposal Summary: The proposed study area connects four of the five designated urban centers located within the City of Longmont. These Urban Centers include State Highway 66 Mixed Use Center, North Main Street Activity Center, Central Business District of Longmont, and the Ken Pratt Extension. The CBD area also includes the 1st and Main Street Transit Revitalization Area, which was the focus of an intensive station area master plan completed in 2012. The current Envision Longmont plan development will begin to identify opportunities associated with redevelopment and transportation system enhancements; however a more detailed corridor study is essential to maximizing the potential of this corridor from both a land use and transportation perspective.

Project recommendation committee finding: Recommended for funding in FY17

Recommended amount: \$200,000

Sponsor: City of Thornton

Federal amount requested: \$160,000

Local match committed: \$40,000

Proposed Study: North Thornton and Highway 7 TOD Master Plan

Type: Creation and adoption of an original station area master plan or urban center study

Proposal Summary: This proposed study consists of the area surrounding the proposed north end line station for RTD North Metro Rail Line and proposes to serve commuters primarily living to the east, west, and north. This station, currently in the planning phase, will be a station and stop for the Highway 7 BRT currently being planned by communities between Boulder and Brighton and is identified in the Highway 7 Planning, Environmental, and Linkage study. This study will help define how this station and the potential development can be better integrated along with reviewing the existing development plan for incorporating the latest knowledge regarding TODs. This plan will also conduct a market and feasibility analysis to verify assumptions and to have a realistic plan.

Project recommendation committee finding: Recommended for funding in FY17

Recommended Amount: \$160,000

ATTACHMENT 1

Sponsor: Transportation Solutions Foundation

Federal amount requested: \$160,000

Local match committed: \$40,000

Proposed Study: Multi-Station Plan and Mobility Study: Colorado and University Stations

Type: Area planning and implementation activities study

Proposal Summary: According to the City/County of Denver's Transit Oriented Development Strategic Plan, both Colorado and University Stations are characterized as stations needing to be "energized." Both stations are gateways to key activity centers in the South Central Denver area. This proposal focuses on the elements needed to energize both stations and advance the connectivity between activity points/centers within the influence areas. The findings for University Station will be incorporated and/or aligned with the DU Campus Transportation Plan, as well as plans being developed by Denver Waldorf School and South High School.

Project recommendation committee finding: Recommended for funding in FY16

Recommended Amount: \$160,000

Sponsor: City and County of Broomfield

Federal amount requested: \$200,000

Local match committed: \$50,000

Proposed Study: State Highway 7 Arterial Bus Rapid Transit Station Design, Multimodal Station Connectivity Recommendations and Right-of-Way Needs

Type: Corridor wide study

Proposal: SH7 is one of the region's few continuous east-west highways and serves communities that are rapidly developing and redeveloping. This proposed study will provide an exciting and distinct arterial BRT station and stop design, guidance for non-motorized access to BRT stations and stops, and an overview of the right-of-way needs for BRT stations and stops. The goal of the proposed study is to ensure that key building blocks for the success of SH7 BRT have been thoroughly investigated. A primary aim of this project is to create guidelines for constructing multi-use paths from transit stations to adjacent developments to ensure areas near transit stations are accessible by active modes of transportation.

Project recommendation committee finding: Not recommended for funding.

ATTACHMENT 1

Sponsor: City of Centennial

Federal amount requested: \$150,000

Local match committed: \$30,000

Proposed Study: Arapahoe Urban Center

Type: Next Steps

Proposal Summary: This proposal includes the Arapahoe Urban Center which consists of approximately 200 acres between Quebec Street and I-25, flanking Arapahoe Road on the north and south. The purpose of this request is for funding a next steps plan to refresh and refine Centennial's 2007 Sub-Area Plan. After nearly eight years of limited action (since the 2007 plan), Centennial hopes to shift from taking a passive role to actively guiding the area in becoming a major urban center in South Metro Denver. The purpose of this request is also to create a detailed implementation plan to aid the city in achieving the goals set forth in the 2007 Sub-Area Plan as well as identifies barriers to private investment and development in the AUC. This application attributes lack of interest in the 2007 plan to economic conditions, limited city resources and the lack of specificity present in the 2007 plan.

Project Recommendation committee finding: Not recommended for funding.

Sponsor: City and County of Denver

Federal amount requested: \$160,000

Local match committed: \$40,000

Proposed Study: Urban Mobility Hubs Planning Study

Type: Area Planning

Proposal Summary: The project study area will be comprised of four to five major multimodal transportation activity hub locations where multiple transportation modes intersect along key transit corridors in Denver. The locations evaluated in the study will be selected on a variety of criteria. To develop the mobility hubs, the City and County propose completing this study in order to identify and evaluate potential locations for future hubs. This study is expected to engage multiple city departments and outside agencies as needed.

Project recommendation committee finding: Not recommended for funding.

ATTACHMENT 1

Sponsor: City and County of Denver

Federal amount requested: \$200,000

Local match committed: \$50,000

Proposed Study: North Capitol Hill/Cheesman/Capitol Hill/Colfax Urban Center Neighborhood Plan

Type: Creation and adoption of an original station area master plan or urban center study

Proposal Summary: The proposed study area includes a collection of neighborhoods in Central Denver just east of the Central Business District. This area was identified as a top priority to complete a new/updated neighborhood plan to guide future growth and increase livability. This proposed neighborhood plan along the Colfax Urban Center corridor will identify existing conditions and challenges related to land use, transportation, and amenities in order to identify opportunities to align land use plans with appropriate zoning.

Project Recommendation committee finding: Not recommended for funding.

Sponsor: City of Englewood Community Development

Federal amount requested: \$200,000

Local match committed: \$50,000

Proposed Study: Englewood Light Rail Corridor Study II

Type: Next Step

Proposal Summary: The proposed study is located along the southwest light rail line redevelopment corridor through the City of Englewood and the City of Sheridan. This proposal seeks to take sections of high priority projects identified in the previous Next Steps study from conceptual to 30% and 100% design.

Project recommendation committee finding: Not recommended for funding.

ATTACHMENT 1

Sponsor: City of Englewood Community Development

Federal amount requested: \$100,000

Local match committed: \$25,000

Proposed Study: Englewood Light Rail Corridor III

Type: Next Step

Proposal Summary: The proposed study area includes the SW light rail line redevelopment corridor through the City of Englewood and the City of Sheridan, including the surrounding residential neighborhood service areas. The Englewood light rail corridor is envisioned to mature into a true mixed-use, high density, TOD area located along a portion of the southwest light rail line. The City of Englewood Community Development Department and Planning and Zoning Commission are currently contemplating developing a Transit Station Area Overlay Zone for station areas that would be laid over the existing industrial and PUD zone districts. This Transit Station Area Overlay Zone is envisioned to be form-based in nature, inspired by standards that were first developed by Denver for the Colfax Main Street Zones. The intent of this proposal is to study the feasibility and effectiveness of the proposed overlay zone.

Project recommendation committee finding: Not recommended for funding.

Sponsor: City of Longmont

Federal amount requested: \$80,000

Local match committed: \$20,000

Proposed Study: Southeast Longmont Urban Renewal Area Design and Implementation Plan

Type: Area planning

Proposal Summary: The proposed study area is approximately 583 acres located in the southeast portion of the City of Longmont. The proposed area includes a portion of the Central Business District of Longmont center which also includes the Main Street transit Revitalization Area. Building off the previous 2006 effort, this plan will provide specific design guidelines and implementation strategies as well as financial tools that will provide a framework to guide reinvestment in this area. A specific goal of this plan is to develop specific strategies to assist property and business owners to respond to local economic opportunities that result in local investment and job creation.

Project recommendation committee finding: Not recommended for funding.

ATTACHMENT 1

Sponsor: City of Louisville

Federal amount requested: \$76,000

Local match committed: \$19,000

Proposed Study: Downtown Louisville Parking Structure Study

Type: Next Step

Proposal Summary: The study area is located in Downtown Louisville, roughly bounded by South Street, Highway 42, Elm Street, and Main Street. The proposed project is seeking grant funding to conduct the structure assessment which would determine if and when a structure is needed, where it should be placed, and financing structures to pay for construction and maintenance. This study is projected to assist in resolving Louisville's parking problems that would enhance its attractiveness as a regional destination and change the dynamics of development in the designated urban center and northwest rail station area.

Project recommendation committee finding: Not recommended for funding.

Sponsor: Town of Parker

Federal amount requested: \$90,000

Local match committed: not listed

Proposed Study: Downtown Parker Urban Center Parking Implementation Strategic Plan

Type: Next Step

Proposal Summary: The proposed area of this study is located in the historic core of Parker and is the only location in the Town that was laid out prior to the dominance of the car. Although the Town has a relatively large amount of public parking, one of the chief concerns that residents shared during the Mainstreet Master Plan outreach in 2014 was lack of parking. The goals of this parking implementation strategy plan will be to establish direction on short term parking management, event parking, long term parking, bicycle parking and Transportation Demand management tools. The expectation of the plan is that it will provide professional direction to make important political decisions regarding these stated issues.

Project recommendation committee finding: Not recommended for funding.

Sponsor: Regional Transportation District

Federal amount requested: \$200,000

Local match committed: \$200,000

Proposed Study: RTD First and Final Mile Strategic Plan

Type: Area Planning

Proposal Summary: The proposed study area is within the Regional Transportation District boundary including all existing and future station areas, transit facilities, and urban centers except for the Downtown Castle Rock urban center. The primary purpose of this study is to define strategies and policies to improve multimodal transportation infrastructure investments at RTD transit facilities that will expand the transit catchment area, with the ultimate goal of increasing ridership. In addition, this project will also recommend guidelines and policies that optimize first and final mile connectivity for future transit projects.

Project recommendation committee finding: Not recommended for funding.

ATTACHMENT 2

STAMP/UC Set-aside Project Review Panel Fiscal Years 2016-2017

Panel Member	Organization
Jenny Axmacher	City of Commerce City
Rick Muriby	City of Golden
Steve Hebert	City of Lone Tree
Lauren Masias	Denver South EDP
Patrick McLaughlin	RTD
Heather Lamboy	Town of Castle Rock



STAMP/UC Set-Aside Overview

- STAMP/UC set-aside included in 2016-2021 TIP
- Funding over 2 year period (FY's 16-17)
- Studies create local visions and action strategies that assist in the implementation of Metro Vision.
- Four types of planning studies eligible through this funding mechanism:
 - Urban Center Study/Station Area master Plan (original)
 - Next Steps Study
 - Corridor-wide Plan
 - Area Planning and Implementation Strategies

STAMP/UC Set-Aside Overview

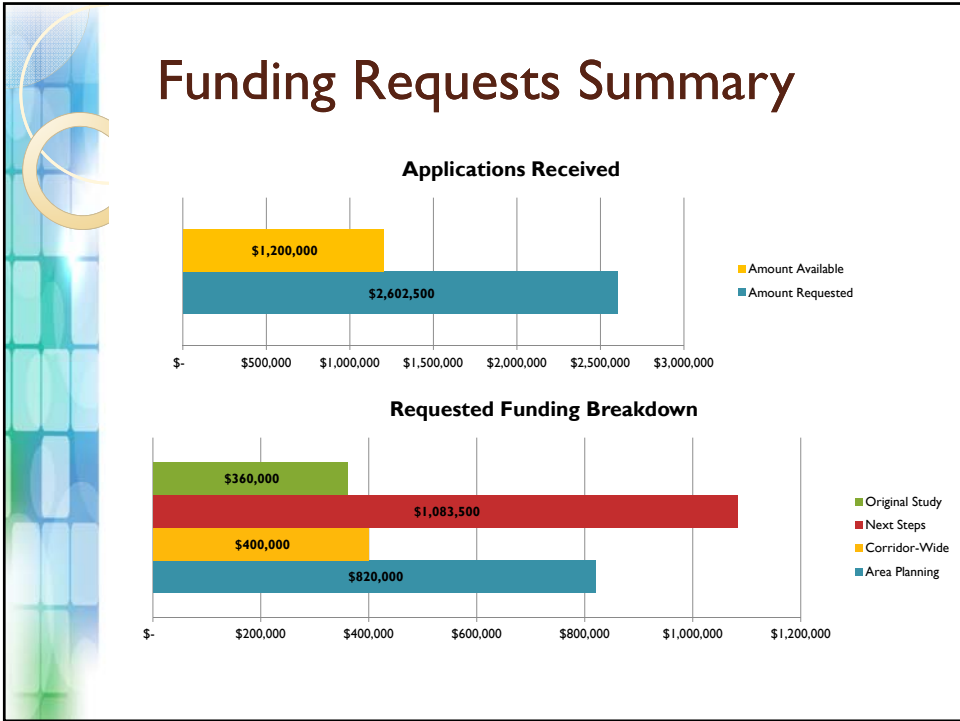
- Eligible sponsors include local member governments, RTD and non-profits (e.g. TMAs/BIDs)
 - Non-profits must provide letters of support from impacted jurisdictions
- DRCOG Board approved the STAMP/UC process April 15,2015
 - Project Selection Committee to recommend projects
- Call for projects beginning of May

Applications Received

- July application deadline
- 17 applications received
- Submitted by jurisdictions, TMAs, & RTD

The screenshot shows a form with two main sections: 'Part I: GENERAL PROJECT INFORMATION' and 'Part II: PROJECT FUNDING REQUEST AND BUDGET'. Part I includes fields for contact person, mailing address, phone number, email address, sponsoring government, title of proposed study, study area location, and station area. Part II includes a table for budget breakdown by funding source.

Part II: PROJECT FUNDING REQUEST AND BUDGET		Fiscal Year
Total Station Request (maximum of \$1,000,000 and a maximum of 20% of 2015)		2016 Request (\$K)
A. State/Local	Federal request + Local Match in either FY 2016 or FY 2017	0
B. Federal Request	2016, 2017, 2018, 2019, 2020, 2021, 2022	1,000,000
C. Local Match		1,000,000



Review Committee and Selection Process

- Review committee consisted of RTD and representatives from eligible entities that did not request funds
- DRCOG staff provided administrative support to the committee and served as the point of contact for applicants
- Committee evaluated studies individually and met once to deliberate and determine recommendations
- Key considerations in determining recommendations:

- Contribution to the vision, goals and policies within Metro Vision
 - Innovation & feasibility
 - Local commitment and ability to implement
 - Regional prioritization
 - Potential impact
 - Panel input and expertise

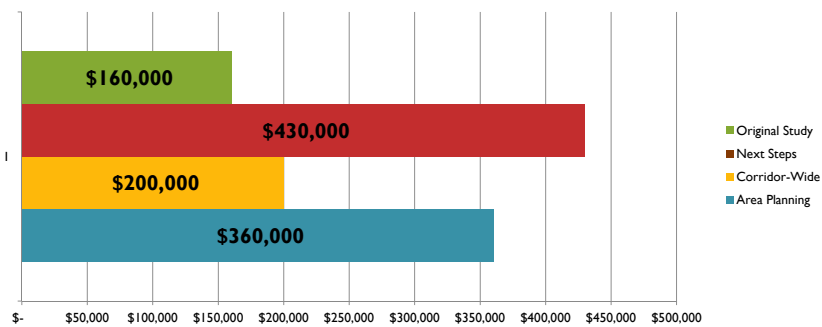
Studies recommended by Review Committee*


Funding Recommendation Summary		
Sponsor	Study Area	Overall
36 Commuting Solutions	Northwest Corridor Bicycle and Pedestrian Final Wayfinding Plans and Sign Design	Recommended
City of Arvada	Gold Line Kipling Ridge Station	Recommended
City of Aurora	Aurora City Center Train/Traffic and Transportation Network Study	Recommended
City and County of Denver (Public Works)	National Western Center Parking and Transportation Management Study	Recommended
City of Longmont	Main Street Corridor Plan	Recommended
City of Thornton	North Thornton and Highway 7 TOD Master Plan	Recommended
Transportation Solutions	Multi-Station Plan and Mobility Study: Colorado and University Stations	Recommended

*Listed studies were also recommended by the Transportation Advisory Committee (9/28/15)

STAMP/UC Set-Aside Funding

Recommended Study Type Breakdown






RTD Administration Fee

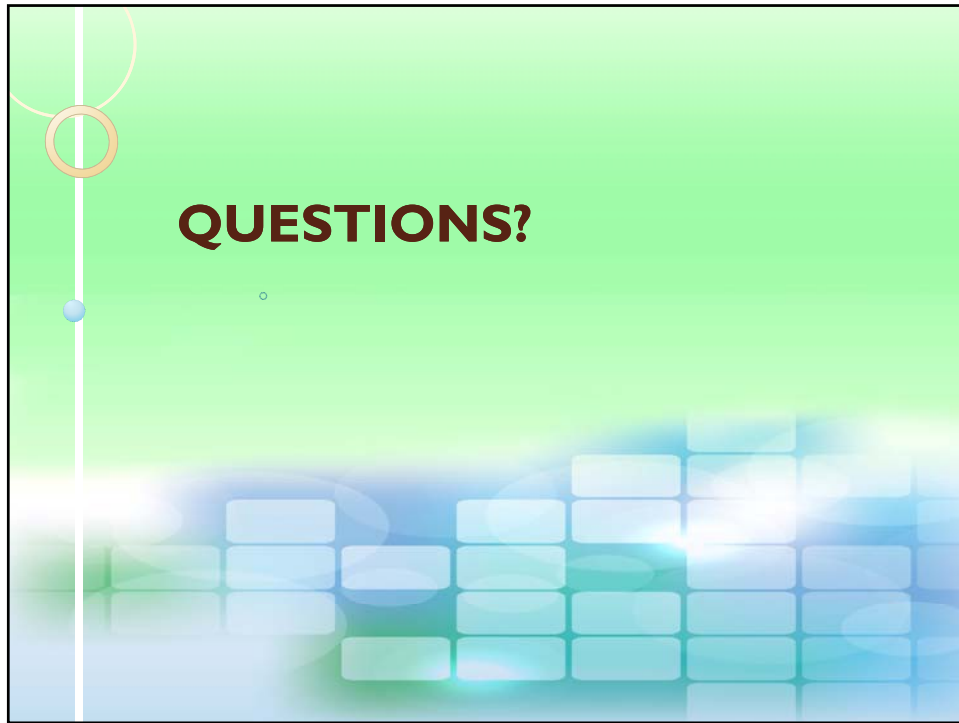
Each project will incur an administration fee from RTD

- A Fee of \$5,868.57 will be charged to each of the 7 recommended projects
- Example: *Based on a total project cost of \$250,000, the RTD fee is roughly 2.36%*
- The RTD Fee is a deduction of the total project cost (80% from the federal award amount and 20% from the local match amount)



Proposed Motion

Move to recommend to the Board of Directors the attached list of projects for the Station Area Master Plan/Urban Center set-aside for fiscal years 2016 and 2017.



ATTACHMENT D

To: Chair and Members of the Regional Transportation Committee

From: Melina Dempsey, Transportation Planner
303 480-5628 or mdempsey@drcoq.org

Meeting Date	Agenda Category	Agenda Item #
October 20, 2015	Action	6

SUBJECT

Approval of projects recommended by the Project Review Panel to be funded in the Regional Travel Demand Management (TDM) set-aside for fiscal years 2016 and 2017.

PROPOSED ACTION/RECOMMENDATIONS

Staff recommends approval of the projects proposed by the TDM Set-aside Project Review Panel.

ACTION BY OTHERS

[September 28, 2015](#) - TAC recommended approval of project list for FY 2016 and 2017 Regional TDM set-aside.

[April 15, 2015](#) DRCOG Board approved the Regional TDM set-aside process for FY 2016 and 2017.

SUMMARY

Eighteen project applications were submitted requesting a total amount of \$3.24 million. A total of \$2.33 million is available. Of the 18 project applications received, 5 were infrastructure requesting \$1.12 million in total; 13 were non-infrastructure, requesting \$2.12 million.

Eleven projects are recommended by the Project Review Panel to receive funding (Table 1). Of the 11 projects recommended, 4 are infrastructure and 7 are non-infrastructure.

The panel, comprised of TDM and other regional partners (Table 2), met twice in person and once via conference call to review, discuss, and rank projects to recommend for funding. The recommendation of the panel was unanimous.

Target amounts were established in the *Transportation Improvement Program* (TIP) and used as a basis for the Panel's recommendations: \$800,000 for multimodal supportive infrastructure and \$1.28 million for TDM marketing/outreach types of projects.

The panel considered the scores of projects as well as other factors (such as panel input and expertise, quality of the applications, clarity of project scopes, level of support from impacted agencies, and duplication of efforts) to develop the recommended project list. The panel also recommended one project be placed on a waitlist at a reduced funding level with associated scope modifications.

Upon approval by the Board, an administrative modification to the TIP will be conducted to amend the selected projects into the 2016-2021 TIP. Per the adopted TIP Policy, staff will also reflect in the administrative modification the continuation of funding through the regional TDM "partnership" at the level of \$80,000 per fiscal year 2016 and 2017 for each of the following Transportation Management Organizations:

- 36 Commuting Solutions
- Boulder Transportation Connections
- Denver South TMA
- Downtown Denver Partnership
- Northeast Transportation Connections
- Transportation Solutions
- Smart Commute Metro North

PREVIOUS DISCUSSIONS/ACTIONS

N/A

PROPOSED MOTION

Move to recommend to the Board of Directors the attached list of projects and associated waitlist for the Regional TDM set-aside for fiscal years 2016 and 2017.

ATTACHMENTS

1. Recommended TDM Set-aside Project List
2. TDM Set-aside Project Review Panel

ADDITIONAL INFORMATION

If you need additional information, please contact Melina Dempsey, Transportation Planner, at 303 480-5628 or mdempsey@drcog.org

Table 1

Project Review Panel Recommendations - FY 2016-17 DRCOG Regional TDM Set-aside

(October 20, 2015)

Project ID #	Sponsor Agency	Project Title	Project Description	Total Score	CMAQ Funding Request	Recommended Funding
INFRASTRUCTURE PROJECTS						
2	Aurora (City of)	Bike-n-Ride Storage Facilities: Aurora and East Line	Install 3 secure bike parking shelters at Iliff, Peoria and Central Park transit stations. Includes marketing and outreach.	66	\$300,000	\$300,000
1	36 Commuting Solutions (TMA)	Bike-n-Ride Shelters: Broomfield/Sheridan Stations	Install 2 Bike-n-Ride secure bike parking shelters at the Sheridan and Broomfield transit stations. Includes marketing and outreach.	65	\$258,623	\$258,623
3	Boulder County	Real-Time Signage Project: Boulder County	Install and market 5 Public Information Display (real time arrival information) signs throughout Boulder County.	62	\$300,000	\$257,935
5	Golden (City of)	Bike Library: City of Golden	Implement Bike Library in Downtown Golden and bike parking cages at CSM and at West Corridor rail station. Fleet of 60 bikes to accommodate various ages/abilities.	55	\$164,144	\$164,144
4	Englewood (City of)	Shared Bicycle/Parking Lanes: Dartmouth Avenue ⁽¹⁾	A shared bicycle/parking lane treatment for Dartmouth Avenue from Inca Street to Clarkson Street.	54	\$100,000	\$0
					Subtotal:	\$980,702
NON - INFRASTRUCTURE						
15	Groundwork Denver	Community-Based Social Marketing Project: West/North-Central Denver and Commerce City ⁽²⁾	Community-based marketing program focusing on populations not typically served by traditional TDM projects, such as lower-income and Spanish-speaking residents.	69	\$238,493	\$238,493
13	eGo Carshare	Multi-modal Access Pass Marketing Campaign and Fleet Expansion	1) Carshare marketing campaign with a multi-modal access pass emphasis and, 2) 3 new carshare vehicles in locations in Denver and Boulder.	68	\$111,767	\$111,767
14	Groundwork Denver	New TMA (Strive to Not Drive)	Establish a new TMA to support and promote transportation choices for residents and businesses in the north and west neighborhoods of Denver.	67	\$80,305	\$0
9	Bike Denver	Ambassador Program	Education and encouragement program to increase bicycling trips in Baker, Five Points, and other parts of Denver.	65	\$248,369	\$248,369
18	Walk Denver	Wayfinder Academy	Conduct two 7-month academies to engage Denver residents to be leaders and agents for change toward "car-lite" lifestyles.	64	\$144,550	\$144,550
17	Transportation Solutions	Access Cherry Creek/Access Colorado Boulevard	Outreach and assistance to retail, hospitality and service employees who drive alone in Cherry Creek and Glendale areas.	63	\$248,370	\$200,000
16	RAQC	Every Trip Counts - Smart Commute Metro North	Incentives and education program during the summer ozone months in the Smart Commute Metro North TMA area.	61	\$286,364	\$286,364
12	Community Cycles	Community Multi-modal Transportation Center	Promotion of non-SOV travel to Boulder Junction residents, workers and visitors. Includes a multi-modal resource center and a bike library program.	61	\$124,235	\$124,235
7	36 Commuting Solutions (TMA)	Casual/Dynamic Pilot Ridesharing (US 36) ⁽³⁾	Casual/dynamic ridesharing (using a Smartphone app) to match riders in both real-time and in advance.	61	\$206,975	Waitlist \$150,000
6	36 Commuting Solutions (TMA)	Instant Ridesharing Pilot Program (US 36)	Project will offer support for instant ridesharing along US-36; drivers can fill their empty seats and use the US 36 Express Lanes.	61	\$128,315	\$0
11	Boulder Transportation	Overcoming Barriers to Ride Matching	Outreach program to encourage commuters to use non-SOV travel options.	59	\$102,630	\$0
10	Boulder County	Real-time Marketing Campaign	Outreach and education about RTD's new real-time system to residents and employees in Boulder County.	59	\$99,840	\$0
8	Arvada (City of)	Gold Line Trips Count (GLTC)	Marketing program to promote bicycling, walking, transit, and carpooling to commuters arriving at the Gold Line (Olde Town) Station.	56	\$100,000	\$0
					Subtotal:	\$1,353,778

Footnotes:

(1) Project type is ineligible. Primary function is a parking lane.

(2) Groundwork Denver's preferred project.

(3) 36 Commuting Solutions indicated they only wanted to pursue one non-infrastructure project (Project 6 OR 7).

Table 2

**TDM Set-aside Project Review Panel
Fiscal Years 2016-2017**

Panel Member	Organization
Ted Heyd	Bicycle Colorado, TAC
Betsy Jacobsen	CDOT
Dave Baskett	City of Lakewood, TAC
Aylene McCallum	Downtown Denver Partnership (TMA), TAC
Melina Dempsey-Steve Cook	DRCOG-Transportation Planning and Operations
Steve Erickson	DRCOG-Way to Go
Genevieve Hutchinson	RTD
Steve Klausung	Southeast Connections (TMA), TAC

*Non-voting: Doug Rex, DRCOG; Aaron Bustow, FHWA

Travel Demand Management (TDM) Set-Aside Project Recommendations

Fiscal Years 2016-2017



DRCOG
DENVER REGIONAL COUNCIL OF GOVERNMENTS
We make life better!

RTC – 10/20/15

TDM Set-Aside Overview

- TDM set-aside included in 2016-2021 TIP
- Funding for FY's 16-17 with Federal CMAQ \$
- TDM projects reduce SOV travel
- Marketing/outreach projects + small infrastructure*
- Member governments, TMAs, and non-profits eligible
- DRCOG Board approved process in April
 - Project Review Panel to recommend projects

Applications Received

- 18 applications received mid-June (Table 1)
- 5 infrastructure, 13 marketing/outreach
 - Bike parking (secure) at transit stations
 - Bike library (share)
 - Bicycling and walking education/encouragement
 - Carshare vehicles and multimodal access pass marketing campaign
 - Real-time transit signage
 - TDM marketing/outreach – Spanish-speaking and low-income
 - Transit passes
- Multimodal focus in most projects
- Submitted by jurisdictions, TMAs, + TDM non-profits

TDM Set-Aside Funding

Category	Value
Total \$ Requested	\$3.24M
Available Amount	\$2.33M
Recommended Projects (Total)	\$2.33M
Infrastructure (4 projects)	\$0.98M
Non-infrastructure (7 projects)	\$1.35M

Targets:

- \$800,000 for small infrastructure
- \$1,280,000 for marketing/outreach



Review Panel and Scoring Process

- Panel directed to evaluate & recommend projects
- 9 panelists – Table 2
 - 5 TAC Members/Alternates, also 2 non-voting panelists
- Projects scored on 14 criteria
- Panel deliberated projects over 3 meetings
- Considerations for recommendations:

- | | |
|----------------------------|------------------------------|
| •Base scores | •Duplication of efforts |
| •Panel input and expertise | •Innovation |
| •Quality of application | •Past experience/performance |
| •Clarity of scope of work | •Coordination with partners |



Project Review Panel Recommendation


- Funding for 11 projects:
 - 4 infrastructure, 7 non-infrastructure
 - \$2.33 million
- Waitlist one project
- Panel recommendation was unanimous

Project Review Panel Recommendations - FY 2016-17 DRCOG Regional TDM Set-aside
(October 20, 2015)

Project ID #	Sponsor Agency	Project Title	Project Description	Total Score	EMAG Funding Request	Recommended Funding
INFRASTRUCTURE/INELIGIBLES						
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5	Golden (City of)	Bike Library: City of Golden	Implement Bike Library in Downtown Golden and bike parking cages at CTA and at West Corridor rail station. Fleet of 60 bikes to accommodate various ages/abilities.	55	\$166,114	\$166,114
4	Englewood (City of)	Shared Bicycle/Parking Lanes: Dartmouth Avenue ⁽¹⁾	A shared bicycle/parking lane treatment for Dartmouth Avenue from 1st Street to Clarkson Street.	54	\$300,000	\$0
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NON-INFRASTRUCTURE						
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Footnotes:
 (1) Project type is ineligible. Primary function is a parking lane.
 (2) Groundwork Denver's preferred project.
 (3) 36 Commuting Solutions indicated they only wanted to pursue one non infrastructure project (Project 6 OR 7).

Funding
Recommended for
TDM Set-Aside
projects Fiscal Years
2016-2017



Proposed Motion

Move to recommend to the Board of Directors the attached list of projects and associated waitlist for the Regional TDM set-aside for fiscal years 2016 and 2017



ATTACHMENT E

To: Chair and Members of the Regional Transportation Committee

From: Steve Cook, MPO Planning Program Manager
303 480-6749 or scook@drcoq.org

Meeting Date	Agenda Category	Agenda Item #
October 20, 2015	Information	7

SUBJECT

Summary of DRCOG's draft *2014 Annual Report on Roadway Traffic Congestion in the Denver Region*.

PROPOSED ACTION/RECOMMENDATIONS

N/A

ACTION BY OTHERS

N/A

SUMMARY

As a component of DRCOG's federally required congestion management process, annual reports on traffic congestion have been prepared since 2006. Like previous reports, the *2014 Annual Report on Roadway Traffic Congestion in the Denver Region* presents information on vehicle miles traveled, performance measures, locations of congestion, multimodal strategies in the congestion toolkit, and recent projects. In addition, this year's report highlights a comparison of the Denver region with other metro areas.

Staff will summarize the draft report and solicit feedback at the RTC meeting.

PREVIOUS DISCUSSIONS/ACTIONS

N/A

PROPOSED MOTION

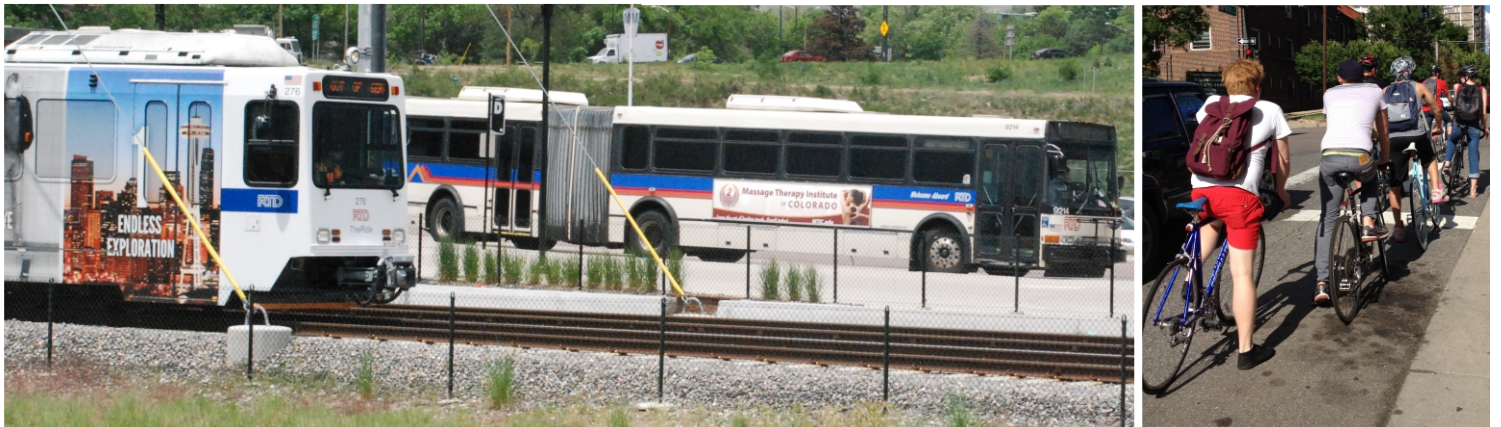
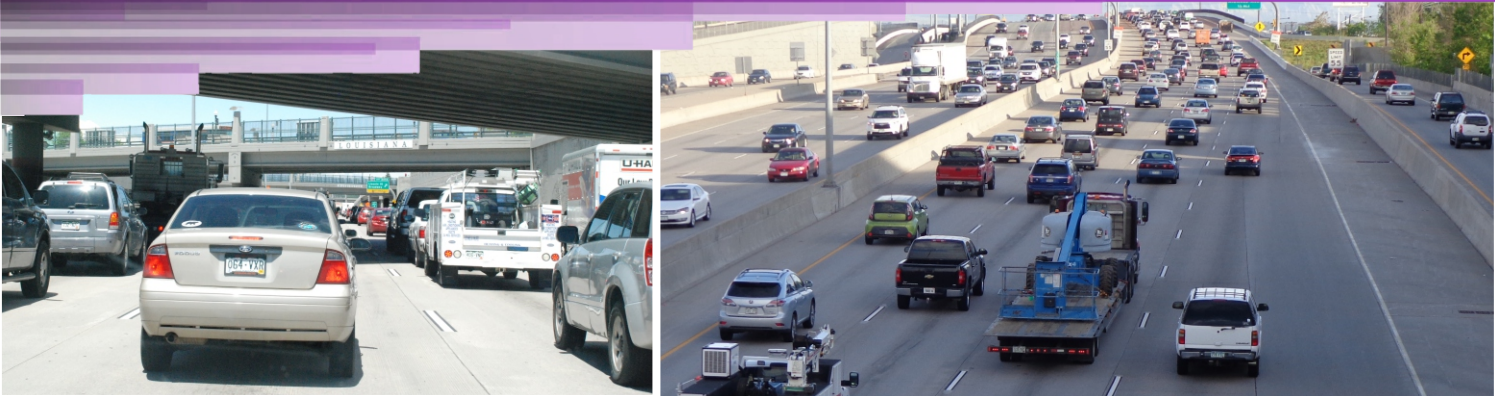
N/A

ATTACHMENT

Draft 2014 Annual Report on Roadway Traffic Congestion in the Denver Region

ADDITIONAL INFORMATION

If you need additional information, please contact Robert Spotts, Senior Transportation/ Air Quality Planner, at (303) 480-5626 or rspotts@drcoq.org.



2014 Annual Report on Roadway Traffic Congestion in the Denver Region

October 2015

Visit our partner agency websites for more information:

Colorado Department of Transportation
www.coloradodot.info

Regional Transportation District
www.rtd-denver.com

Traveler Information
www.cotrip.org

Interesting Videos on Traffic Congestion

The Phantom Traffic Jam – an explanation
<https://www.youtube.com/watch?v=qoVjVVaLe10>

Traffic Waves
<https://www.youtube.com/watch?v=19S3OdK6710>

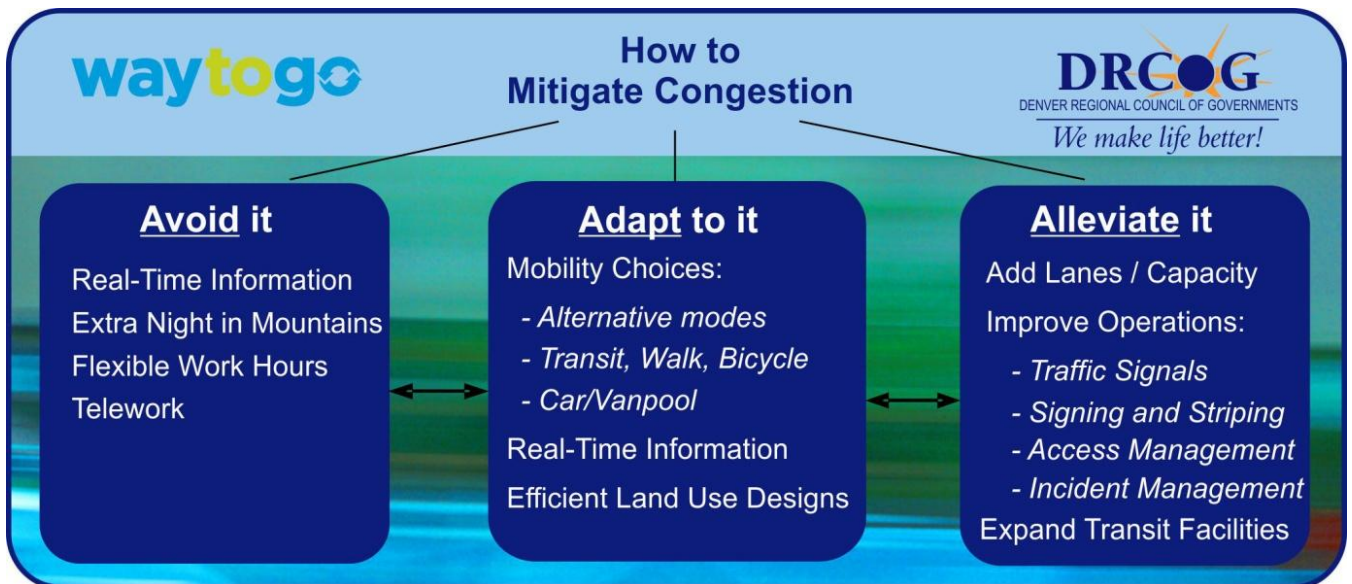
For ways to avoid or adapt to congestion via mobility options please visit:

Way to Go
<http://waytogo.org>

Preparation of this report has been financed in part through grants from the U.S. Department of Transportation, Federal Highway Administration and Federal Transit Administration. This report and others are available at the DRCOG Congestion Mitigation webpage at: <http://drcog.org/node/178>.

Contact Robert Spotts, Senior Transportation/Air Quality Planner, at rspotts@drcog.org for additional information regarding DRCOG's *Congestion Mitigation Program*.

The 3-A's of Congestion Mitigation



2014 Annual Report on Roadway Traffic Congestion in the Denver Region

October 9, 2015

1. Introduction

The Denver Regional Council of Governments has prepared annual reports on traffic congestion since 2006. Since that time, several trends have emerged:

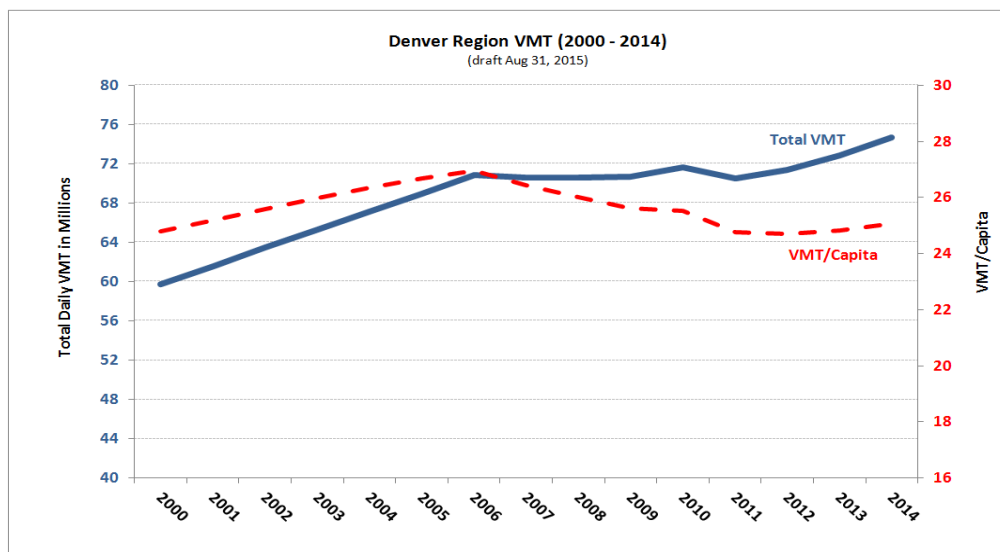
- Overall traffic has grown slightly; but at a rate less than population and employment growth.
- Miles driven per person has decreased slightly.
- Traffic congestion is a little worse across the region, though some specific locations are experiencing either much greater or even less congestion.
- More transit options are available to help people avoid driving in severe congestion and there is greater popularity and opportunities to walk, bicycle, or carpool to places.
- There is much greater access to real-time information on traffic conditions, major incidents, and travel options to avoid driving alone.

On one hand, traffic congestion can have a negative impact on attracting or retaining many types of businesses and economic activity. On the other hand, congestion can also be a sign of a strong economy. Large urban areas like the Denver region are vibrant places offering a variety of employment and recreation opportunities. Therefore some traffic congestion at some points in time is inevitable.

2. How much do we travel on a typical day? (Trends in VMT – Vehicle Miles of Travel)

People travel nearly 110 million person-miles in the Denver region every weekday. Travel occurs behind the wheel, on foot, in wheelchairs, as a passenger, on a bicycle, and in other ways. Motor vehicle drivers (cars, trucks, buses, ambulances, delivery vans, etc.) make up 75% of the miles traveled, or about 75 million VMT per day. In addition to transporting people, goods, raw materials and services, those vehicles also burn almost 4 million gallons of petroleum fuel, and cause over 170 traffic crashes per day. **Figure 1** depicts average weekday VMT for the entire Denver region over the past 14 years. The solid blue line shows that total daily VMT rose steadily through 2006, flattened out through 2011, but has increased in the past three years. Economic and population growth combined with lower fuel costs likely played a role in the recent increase. Factoring in population growth however, shows VMT per capita has actually decreased slightly since its peak in 2006.

Figure 1



3. How severe is traffic congestion?

DRCOG maintains a database to monitor traffic congestion and performance measures for the 2,400 mile “regional roadway system”.

The congestion database identifies key attributes for each segment of the system. The attributes are associated with the two factors of traffic congestion: roadway capacity and traffic volume.

What factors influence traffic congestion?

A. Roadway Capacity – Or, how many motor vehicles can efficiently travel on the roadway? The vehicles of course, carry drivers, passengers, services, and goods.

The **Regional Roadway System** represents the DRCOG-designated freeways, tollways, major regional arterials, and principal arterials. These are the most heavily traveled and important connecting corridors of the region. This system handles almost 80% of the total traffic in the region.

Vehicles traveling along a road are similar to water in a pipe. Traffic signals and on-ramps are similar to valves controlling the amount of water entering a mainline pipe. If too much water tries to enter a pipe, turbulence occurs and the water backs up. A clog in the pipe is like a traffic crash that shuts down all or part of a road. The one thing a pipe doesn't have is millions of individual driver decisions that can disrupt the flow and cause a “shock-wave” of delays. For example, there is no physical reason for “rubber-necking” slowdowns—human psychology is the cause.

The following roadway attributes affecting capacity are identified in the congestion database and used in DRCOG's analysis:

- Lanes
- Traffic signals
- Driveways and curb-cuts
- Parking at the curb
- Truck activity and deliveries
- Hills (grade, slope)
- Very high pedestrian activity sites
- Sun glare at sunrise or sunset
- Frequency of crashes or incidents

Other random or seasonal conditions can also affect capacity, but are not inventoried for individual roadway segments. On a typical day, many non-typical events occur:

- Poor signage or worn out striping
- Tree branches blocking views
- Rainstorms, or snowfall, or power outages
- Vehicles slow down for no apparent reason
- Planned or unplanned construction
- Special events

B. Number of Vehicles (volume) – Or, how many vehicles want to use the roadway, at different times of the day? Like a water pipe, a roadway essentially has the same base capacity at all hours of the day. However, the volume of traffic (or water) at certain times of the day can overload the system. This means vehicles (plus passengers and goods) cannot reach destinations down the road in the same amount of time as when there is much less traffic.

The following traffic volume information is maintained in the database:

- Average daily traffic (ADT) – number of vehicles on a segment per day
- Distribution of traffic by hour during the day
- Daily truck and commercial vehicle traffic
- Level of bus service / ridership

Types of Congestion Measures

Traffic congestion is reflected in different ways. DRCOG calculates measures of the Regional Roadway System (see **Figure 2** and **Table 1**) for several situations:

- Duration** “THE ROAD IN FRONT OF MY BUSINESS WAS CONGESTED FOR **MORE THAN 5 HOURS** YESTERDAY!”
- 2014 DATA: 21% of regional roadways were severely congested for 3 or more hours per day
 - 2040 ESTIMATE: 31%
- Severity** “I WAS STOPPED IN TRAFFIC FOR AT LEAST **HALF** OF MY DRIVE HOME LAST NIGHT!”
- 2014 DATA: 16% of vehicular travel occurred in congested conditions (14% of all person trips)
 - 2040 ESTIMATE: 28%
- Magnitude** “THERE WERE THOUSANDS OF CARS STUCK IN TRAFFIC. **WE ALL** WASTED SO MUCH TIME!”
- 2014 Data: People were delayed a total of over 280,000 total hours per day.
 - 2040 ESTIMATE: 720,000
- Variation** “I HAVE TO DRIVE MY SON TO A SOCCER GAME RIGHT DURING RUSH HOUR TODAY. IT’S GOING TO TAKE A LOT **LONGER** THAN ON SATURDAY!”
- 2014 DATA: The average rush hour trip took 22% longer than in the off-peak.
 - 2040 ESTIMATE: 36%
- Reliability** “ANOTHER CRASH **SHUT DOWN THE ROAD**, AND I COULDN’T MAKE MY DELIVERY IN TIME!”
- 2014 DATA: An average of 130 reported crashes occur every day on the regional roadway system (+ ~100 other traffic disrupting incidents such as break-downs, unreported fender-benders, visual distractions, work zones, etc.).



Figure 2
Key Congested Locations in 2014 and 2040

Congested Corridors - Mobility Grade

Grade of "A" through "F" was assigned based on a combination of scores for the following measures:

- Duration** - How long does the congestion last?
(number of hours per day congested)
- Severity** - How much of driving time is in delayed conditions?
(percent of travel time in delay in peak hour)
- Magnitude** - What is the total amount of delay for all travelers at that location?
(total daily delay time per mile)
- Variation** - What is the variation in travel time between off-peak and rush hour?
- Reliability** - How often do crashes or incidents occur?
(crashes per mile per year)

Arterial-Arterial Intersections

There are 3,500 signalized intersections in the region. This map shows the locations with the worst delays.



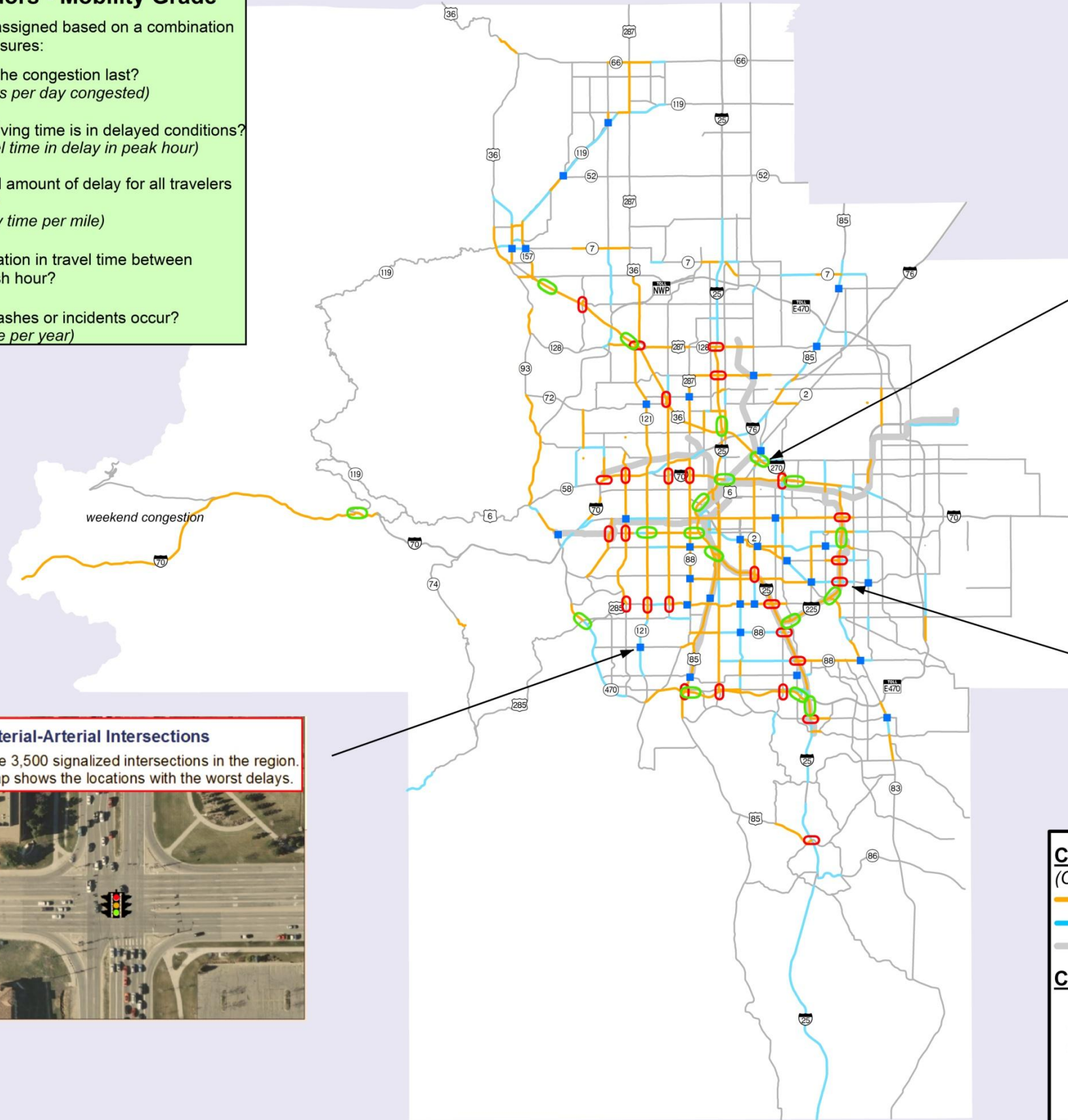
Freeway Bottleneck Points

Free-flow locations where traffic often slows down or backs up because of on-ramps, hills, trucks, or sharp curves.



Arterial-Freeway Ramp Intersections

Extensive congestion occurs where arterial streets intersect with freeway ramps in a series of signalized intersections.



Congested Corridors in 2014 and 2040
(Congestion Mobility Grade of D or F)

- Corridor Congested in 2014
- Corridor Congested in 2040 (assuming RTP projects)
- Rail Transit

Congested Points In 2014

- Arterial / Arterial Intersections
- Arterial / Freeway Ramp Intersections
- Freeway Bottleneck Points



This data is intended for informational purposes only. DRCOG provides this information on an "as is" basis and makes no guarantee, representation or warranty, either express or implied, that the data will be error free. DRCOG further makes no guarantees, representations or warranties, either express or implied, as to the completeness, accuracy or correctness of the data, or as to merchantability or fitness of the data for a particular use or purpose. DRCOG is not responsible to any user for any costs, expenses, liabilities or damages arising from inconsistencies in its data or from any use of the information.

Projection: State Plane Colorado Central, NAD 83 (feet)
RS 9/17/2015
Transportation/CMPAnnualReport2014/GIS_Work/Severe_Congestion_CMP_Report_2014.mxd

Table 1 displays several measures for the designated Regional Roadway System. The 2040 estimates are based on forecasts from the DRCOG regional travel demand model. A key assumption for the model is that over 1.2 million additional people will be living in the Denver region by 2040, a 39% increase. There will be significant growth in transit, bicycle, and walking trips; outpacing the 39% population increase. These are very important travel options to encourage for people and businesses to avoid or adapt to traffic congestion. However, the increase in travel by non-SOVs will not likely be enough to offset the growth in motor vehicle travel and associated traffic congestion.

Table 1
Current and Future Congestion Measures on Denver Regional Freeways and Arterials

	2014		2040 (RTP)		% Change between 2014 and 2040
	Average Weekday	Annual Total Estimate (1)	Average Weekday	Annual Total Estimate (1)	
Vehicle Measures:					
Vehicle Miles of Travel	57,652,000	19,486,372,000	72,738,000	24,585,320,000	26%
Vehicle Hours of Travel	1,312,000	443,596,000	1,917,000	647,913,000	46%
Average Travel Speed (mph)	44	n.a.	38	n.a.	-14%
Vehicle Hours of Delay	209,000	70,753,000	532,000	179,725,000	154%
Travel Delay Per Driven Registered Vehicle (2)	7 minutes	41 hours	13 minutes	74 hours	80%
Travel Delay Per Household	11 minutes	60 hours	18 minutes	135 hours	124%
Person Measures:					
Person Miles of Travel	77,830,000	26,306,603,000	98,196,000	33,190,182,000	26%
Person Hours of Travel	1,772,000	598,855,000	2,588,000	874,683,000	46%
Person Hours of Delay	283,000	95,516,000	718,000	242,628,000	154%
Travel Delay Per Resident	6 minutes	32 hours	10 minutes	57 hours	78%
Other:					
Percent of Travel Time in Delayed Conditions	16%	n.a.	28%	n.a.	n.a.
Travel Time Variation (peak vs. off peak)	1.22	n.a.	1.36	n.a.	n.a.
Lane Miles of Roads Congested for 3 + Hours (Percent of Total Lane Miles)	1,519 21%	n.a. n.a.	2,291 31%	n.a. n.a.	65% n.a.
Economic Costs:					
Commercial Vehicles (3)	\$1,200,000	\$388,800,000	\$4,200,000	\$1,405,300,000	261%
Passenger Vehicles (3)	\$2,300,000	\$769,800,000	\$5,600,000	\$1,902,000,000	147%
Total Cost of Delay	\$3,400,000	\$1,158,700,000	\$9,800,000	\$3,307,300,000	185%
Transit and Other Regionwide Measures:					
Total RTD Transit Boardings	344,000	n.a.	826,000	n.a.	140%
Rail Transit Boardings	70,000	n.a.	258,000	n.a.	267%
RTD Park n Ride Parking Space Utilization (out of 32,011 spaces)	61%	n.a.	n.a.	n.a.	n.a.
Modeled Bicycle and Walking Trips	834,000	n.a.	1,244,000	n.a.	49%
Traffic Crashes (2012)	175	59,250	n.a.	n.a.	n.a.

Sources: DRCOG CMP Database, RTD Ridership Statistics, 2040 RTP

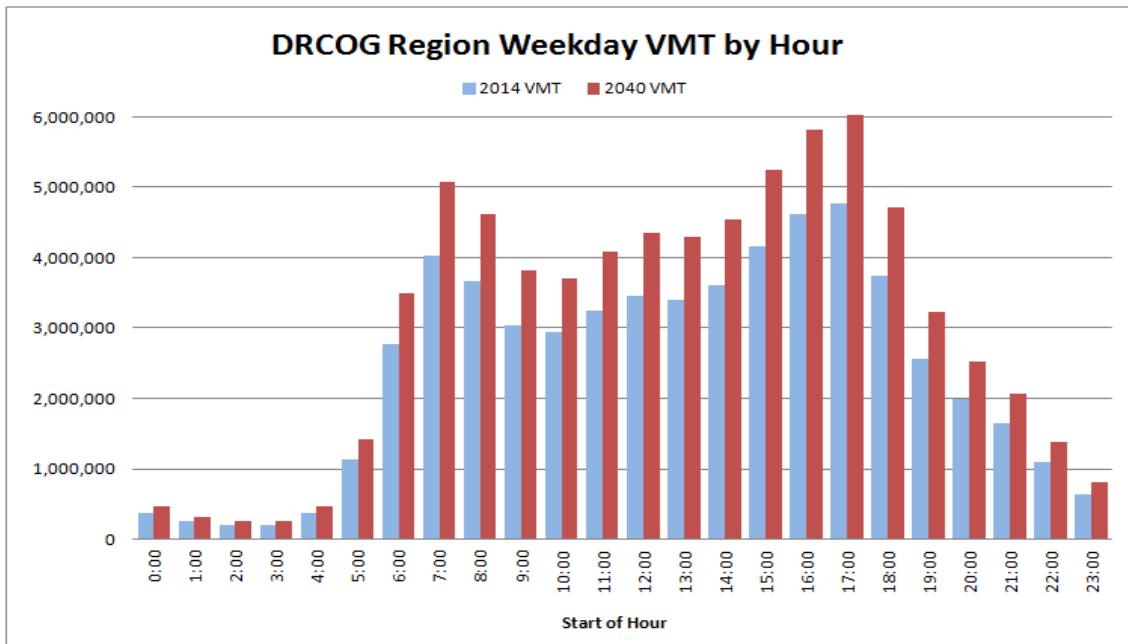
Technical Notes:

- (1) Annual Total Estimate is "Average Weekday" total *338
- (2) Assumption of 1,713,249 driven registered vehicles in 2014 and 2,415,682 in 2040
- (3) Cost calculations incorporate \$12 per hour per adult in car, \$48.30 per hour per light commercial vehicle operator, and \$71 per hour for heavy commercial.

Time and Length of Congestion

A key aspect of traffic is the time of day people will be traveling, today and in 2040. The majority of severe traffic congestion today occurs during the weekday morning and afternoon rush hours. The rush “hour” time period is forecast to expand significantly in the future. The DRCOG model results shown in **Figure 3** forecast the period from 2:00 to 4:00 p.m. in 2040 to have as much traffic as from 4:00 to 6:00 p.m. today. Therefore, it is very important that transportation partners in the region work to reduce mid-day crashes, incidents, and their impacts. As traffic increases in mid-hours of the day, there will be less time available for traffic back-ups (queues) to clear out before the busiest rush-hours. The average clearance time to move crashed vehicles off the road and out of sight must be improved.

Figure 3



4. How does the Denver region compare to other metro areas?

Traffic congestion affects metropolitan areas across the country to varying degrees. There are many types of congestion measures used to rank metropolitan areas. DRCOG staff calculated the average of the two most common (annual hours of delay and peak hour travel time index) measures referenced in the *Urban Mobility Scorecard* prepared by the Texas Transportation Institute.

Table 2 shows the combined Denver/Aurora/Boulder “urbanized area” ranked about 19th worse in congestion in 2014. The values are not precise. A small change in a measure’s value can cause a ranking to shift three to four spots. Denver’s ranking did not change much between 2003 and 2014. Noticeable are the distinctly worse ranks of the Seattle and Portland areas, two key economic competitors with Denver.

Another source of comparative congestion data is produced by the company INRIX. INRIX uses a comprehensive dataset retrieved from cars, cell phones and other devices that move along the nation’s roadways. Data is obtained on speeds, delays, back-ups and other variables for several million miles of roadways, every day of the year. Thus, in addition to routine travel delays, it also incorporates delays induced by crashes, incidents, construction, and bad weather. A scorecard is produced annually by INRIX with comparative results for areas around the United States. For the overall congestion index, again the Denver region ranked 19th worse in 2014. Noticeable again were Seattle, Portland, and Austin, whose congestion rank was worse than their population rank might indicate. For individual freeways reported by INRIX, the segment of I-25 from Colorado Boulevard to 84th Avenue just cracked the top 100 list of most severely congested freeways in the country in 2014.

**Table 2
Comparative U.S. Metro Areas**

Metro Area	Metro Population Rank	Texas Transportation Institute Congestion Rank*			INRIX Congestion Index Rank**
	2014	2003	2011	2014	2014
Chicago	3	5	10	11	11
Dallas	4	13	11	15	21
Austin	35	12	10	11	4
Seattle	15	16	9	5	8
Denver/Boulder	18	17	14	19	19
<i>Denver UA only</i>	21	11	10	17	
Phoenix	12	19	38	18	30
Portland	24	22	11	9	12
Las Vegas	30	25	22	24	28
Salt Lake City	48	34	57	56	55
Albuquerque	59	46	73	67	88
Kansas City	29	59	68	63	69
Cleveland	31	71	50	65	53

* Average of two Texas Transportation Institute measures of congestion: Annual Delay per commuter and Travel Time Index. 2015 Urban Mobility Scorecard

**- INRIX 2014 Scorecard

5. Where is congestion the worst in the Denver region?

As noted on page 2, DRCOG measures five types of congestion for each segment of the regional roadway system. These calculations are then combined into one overall “mobility score” and a letter grade (A through F) is assigned to each segment. Roadway segments receiving a letter grade of D or F are considered the most highly congested and are identified in **Figure 2**. Based on the analysis, highly congested roadways accounted for 25% (1,745 lane miles) of the regional roadway system in 2014 and expected to increase to 32% (2,482 lane miles) by the year 2040. Figure 2 also identifies some of the bottlenecks that induce the most congestion in 2014. Many of these locations are obvious and are mentioned frequently on morning/afternoon traffic reports or identified on mobile traffic applications. For many locations, it should be noted a “downstream” bottleneck is actually the cause of congestion occurring on a segment.

It should also be noted the DRCOG congestion management process is not conducted with the level of precision required for a detailed engineering analysis of a specific road or intersection. DRCOG’s is a regional level of analysis. Ground level site specific engineering and observational studies must be conducted (e.g., by CDOT and local governments) to determine specific causes and optional methods for addressing specific locations.

Avoid or Adapt to Congestion

Offer flexible work-hours or teleworking; provide real-time traffic information via many methods (mobile devices, signs, webpages, alerts, etc.). Provide and encourage more practical choices of travel modes such as transit, walking, bicycling, and ridesharing, as well as more efficient mixed-use neighborhoods to live and work in.

Alleviate (some) Congestion

Improve roadway and transit operations, traffic signal coordination, maintenance, provide transit facilities that bypass traffic congestion, selective addition of roadway lanes (mixed traffic, HOV, or tolled), incident management (crash prevention and clearing of crash scenes).

Since the Denver region is the growing economic engine of Colorado, traffic congestion will remain. Congestion will also affect individual people and businesses uniquely, depending for example on where you live in relation to everyday activities, family make-up (children’s activities or not), or income. DRCOG’s [Congestion Mitigation Toolkit](#) describes over 30 categories of strategies within the “3-A’s” of strategies for addressing traffic congestion: **Avoid** it, **Adapt** to it, or **Alleviate** it.

6. CMP Transportation Projects Recently Completed or Underway

Several important congestion relief projects have been completed by local governments, CDOT, and RTD in the past year or are underway, as shown in **Table 3**. Transit and bicycle/pedestrian projects provide optional modes of travel for many people avoid congestion.

Table 3

Example Transportation Projects Addressing Congestion and Mobility

Interchange/Roadway Projects:	Status
Reconstruct Colfax Avenue @ I-225 interchange	Completed
Widen I-225 from Mississippi Avenue to Parker Road	Completed
Widen I-70 Twin Tunnels east of Idaho Springs	Completed
120 th Avenue Bridge extension from US-36 to US-287/Vance Street	Underway
Extend Central Park Boulevard from 47 th Avenue to 56 th Avenue	Underway
Peak period shoulder managed lane: I-70 eastbound Clear Cr. Co.	Underway
Add managed lanes/BRT to US-36 from Boulder to I-25	Underway
Add managed lanes to I-25 from US-36 to 120 th Avenue	Underway
Reconfigure ramps on US-6 Freeway from Federal Blvd. to I-25	Underway
Widen I-25 from Ridgeway Parkway to C-470/County Line Road	Underway
Rapid Transit Projects:	Status
Denver Union Station (DUS)	Completed
I-225 Corridor: (9 Mile/Parker Road to Peoria/Smith) light rail	Underway
Gold Line (Ward Road to DUS) commuter rail	Underway
Northwest Corridor (Westminster to DUS) commuter rail	Underway
East Rail Line (DUS to DIA) commuter rail	Underway
North Metro Rail Line (DUS to 124 th -Eastlake) commuter rail	Underway
Bicycle/Pedestrian Projects:	Status
West Light Rail Golden Pedestrian & Bicycle overpass of US-6	Completed
Quebec Avenue Bicycle & Pedestrian overpass of C-470	Completed
Tollgate Creek Trail connection (north of Mississippi Avenue)	Completed
Longmont Diagonal/Airport Road underpass	Completed
US-36 Bikeway	Completed
Kipling Avenue Multi-use Path (32 nd Avenue to 44 th Avenue)	Underway
Pearl Parkway Multi-use Path (30 th Street to Foothills Parkway)	Underway
38 th /Blake Street Station area pedestrian access improvements	Underway



Quebec Avenue Overpass of C-470



I-70 Eastbound Twin Tunnels



2014 Annual Report on Roadway Traffic Congestion in the Denver Region

October 2015

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

www.drcog.org - 303-455-1000

2014 Annual Report on Roadway Traffic Congestion in the Denver Region



RTC Oct. 20, 2015



There will always be some level of traffic congestion – any part of region

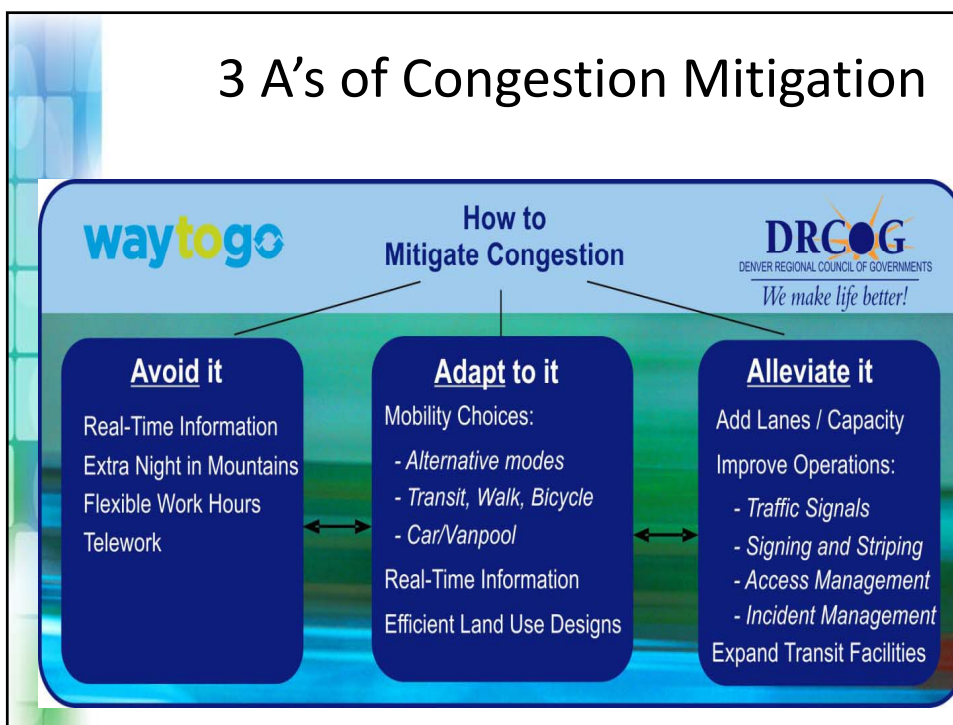
- Congestion can be sign of healthy economy



DRCOG's Annual Congestion Report

- Prepared since 2006
- Federal Congestion Management Process:
 - Performance of system, ID causes, strategies
 - Data collection program, ID locations
 - Benefits of proposed strategies and completed projects
 - Implementation schedule (RTP and TIP projects)
- DRCOG's Congestion Mitigation Program (3 As)


3 A's of Congestion Mitigation








Typical Weekday in Denver Region

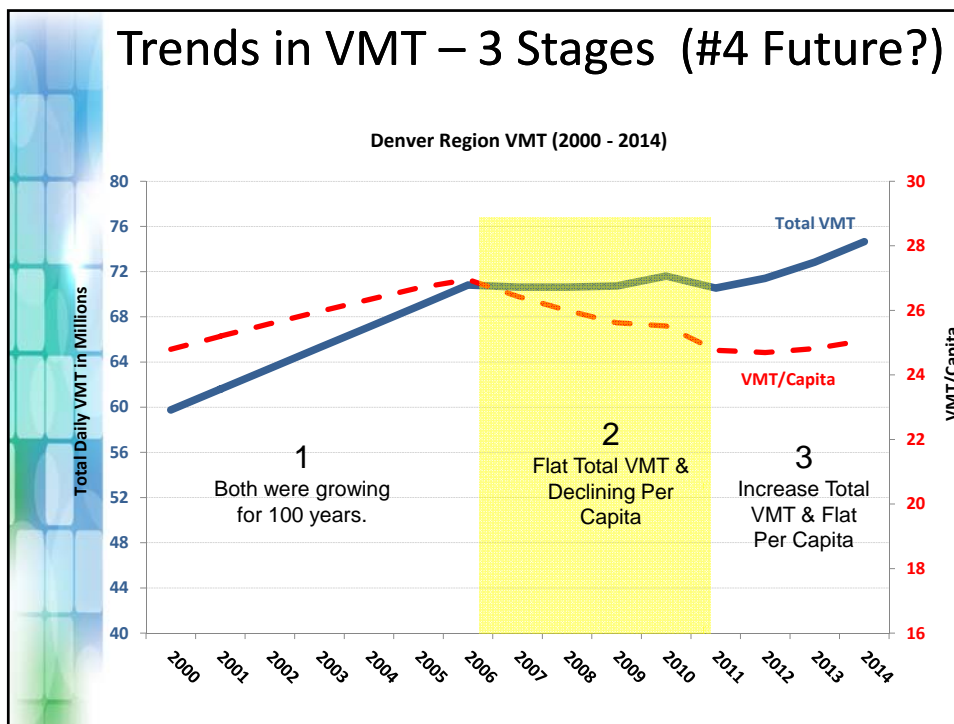
- 13 million **person** trips

 - 110 million miles
- 11 million **vehicle** trips

 - 75 million miles (VMT)
- 3.8 million gallons of petroleum **fuel**

 - 5 quarts per capita
- 180 reported traffic **crashes**

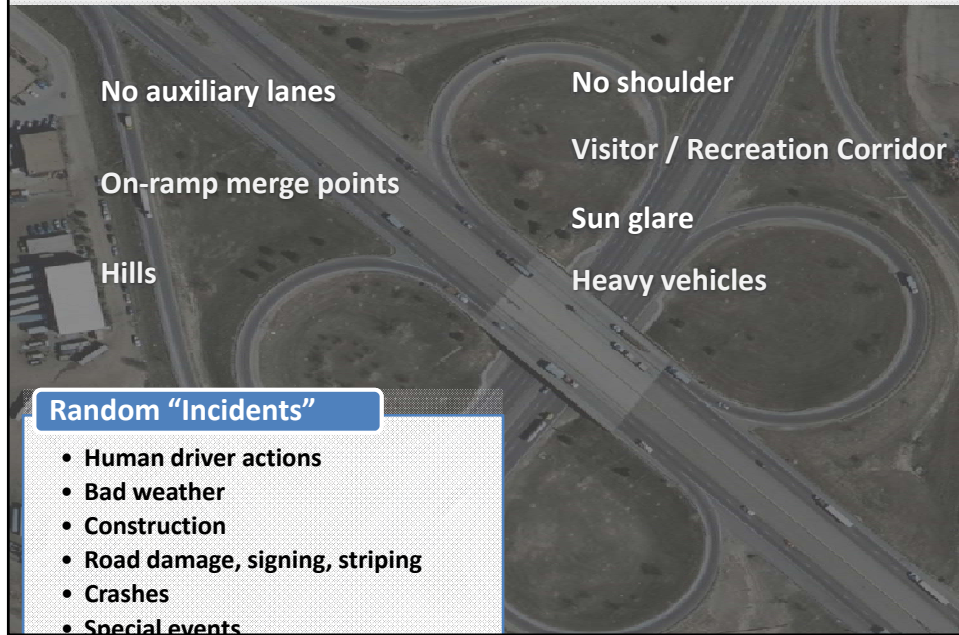




Vehicle Volume and Capacity

- Principal cause of congestion:
 - Physical limitations of space and time
 - Quantity of vehicles

What factors affect freeway carrying capacity?



No auxiliary lanes

On-ramp merge points

Hills

No shoulder

Visitor / Recreation Corridor

Sun glare

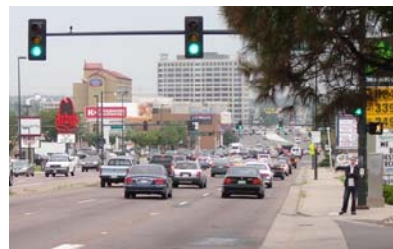
Heavy vehicles

Random "Incidents"

- Human driver actions
- Bad weather
- Construction
- Road damage, signing, striping
- Crashes
- Special events

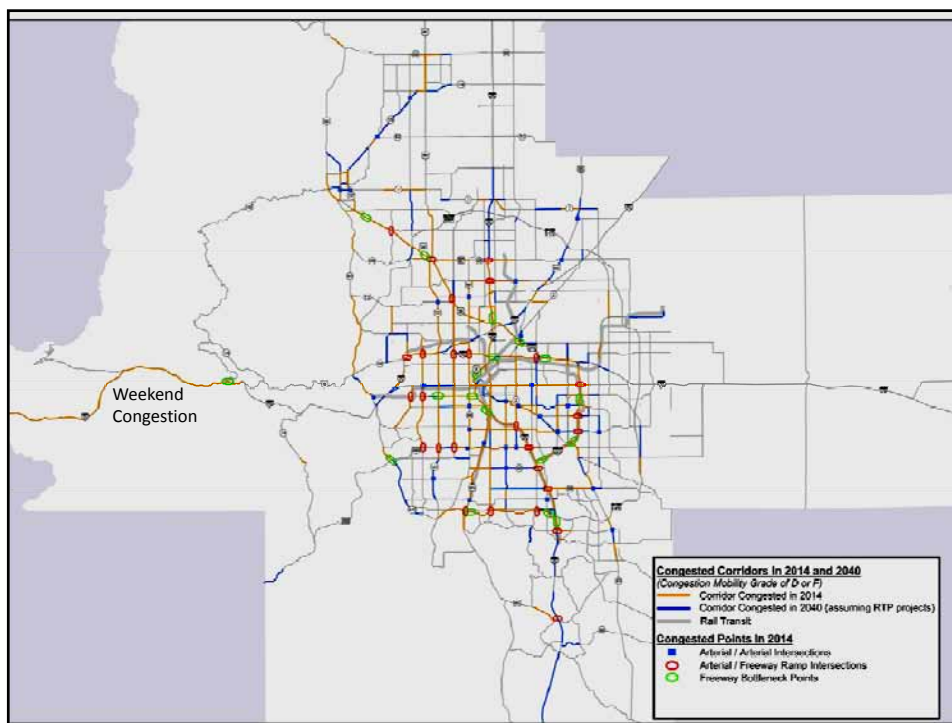
What factors effect arterial street carrying capacity?

- **Traffic signals**
- **Non-signalized access points**
- **Median treatment**
- **Hills**
- **Heavy vehicles**
- **On-street parking**
- **Transit activity**
- **Pedestrian activity**
- **High # visitors, tourists, recr.**



DRCOG Congestion Measures – 5 Types

- **Duration**
 - “THE ROAD IN FRONT OF MY BUSINESS WAS CONGESTED FOR **MORE THAN 5 HOURS** YESTERDAY!”
- **Severity**
 - “I WAS STOPPED IN TRAFFIC FOR AT LEAST **HALF** OF MY DRIVE HOME LAST NIGHT!”
- **Magnitude**
 - “THERE WERE THOUSANDS OF CARS STUCK IN TRAFFIC. **WE ALL WASTED** SO MUCH TIME!”
- **Variation**
 - “I HAVE TO DRIVE MY SON TO A SOCCER GAME RIGHT DURING RUSH HOUR TODAY. IT’S GOING TO TAKE A LOT **LONGER** THAN ON SATURDAY!”
- **Reliability**
 - “ANOTHER CRASH **SHUT DOWN THE ROAD**, AND I COULDN’T MAKE MY DELIVERY IN TIME!”



Regional System Forecasts

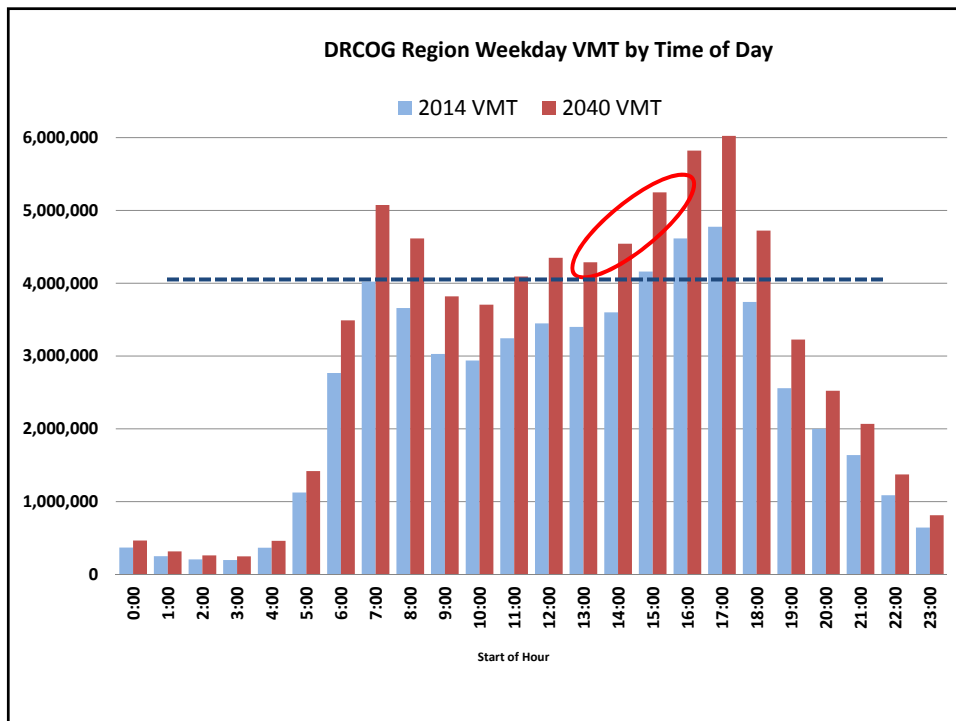
- Forecasts of travel for 2040 not as high as previous
- Still significant growth through 2040 in:
 - Number of roadways experiencing congestion
 - Amount of travel delay per person
 - Population: + 1.2 million
 - Jobs: + 550,000

Table 1 of Report

Regional Roadway System	2014		2040		% Change between 2014 and 2040
	Average Weekday	Annual Total Estimate (1)	Average Weekday	Annual Total Estimate (1)	
Vehicle Measures:					
Vehicle Miles of Travel	57,652,000	19,486,372,000	72,738,000	24,585,320,000	26%
Vehicle Hours of Travel	1,312,000	443,596,000	1,917,000	647,913,000	46%
Average Travel Speed (mph)	44	n.a.	38	n.a.	0%
Vehicle Hours of Delay	209,000	70,753,000	532,000	179,725,000	154%
Travel Delay Per Driven Registered Vehicle (7 minutes	41 hours	13 minutes	74 hours	80%
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Regional Roadway System

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Traffic Crashes (2012)	175	59,250	n.a.	n.a.	n.a.



Traffic Engineering Dynamics / Shockwaves (video)

- [Traffic Waves](#)
- [Shockwaves](#)

I-25 Freeway Shockwave (video)



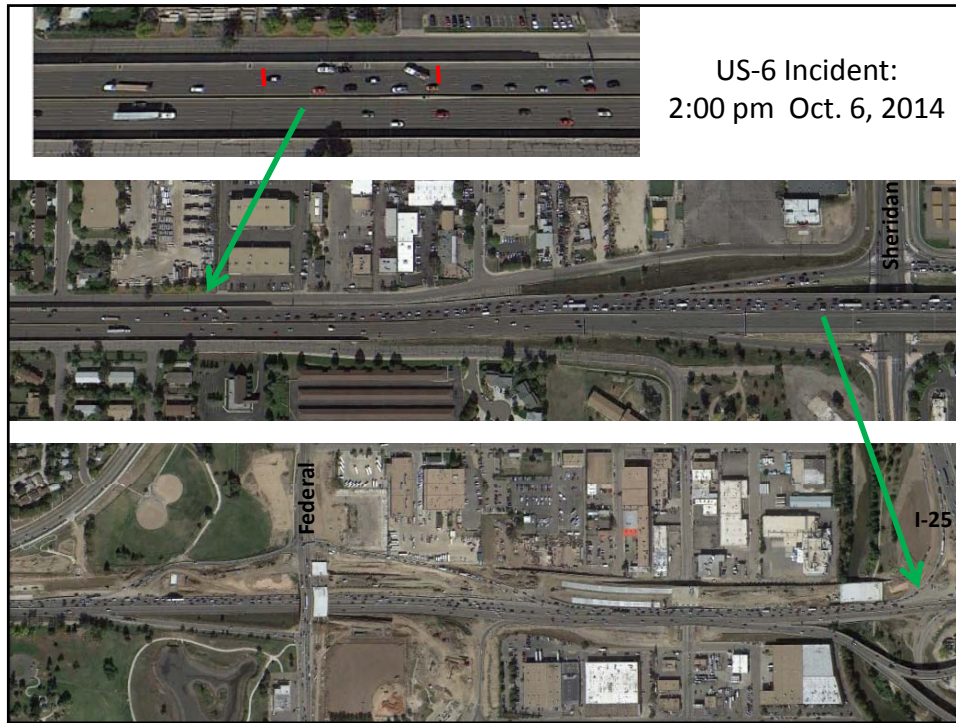


Table 2
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<i>Denver UA only</i>	21	11	10	17	
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* Average of two Texas Transportation Institute measures of congestion: Annual Delay per commuter and Travel Time Index. 2015 Urban Mobility Scorecard
 **- INRIX 2014 Scorecard

“Avoid” Congestion or Bad Weather

I-70 East
Image time stamp: Tue Oct 02 13:01:12 MDT 2007



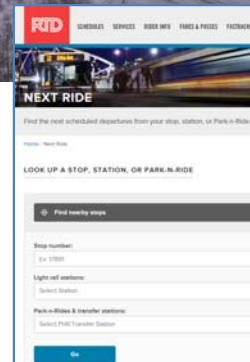
I-70 East
Image time stamp: Wed Nov 21 08:01:10 MST 2007



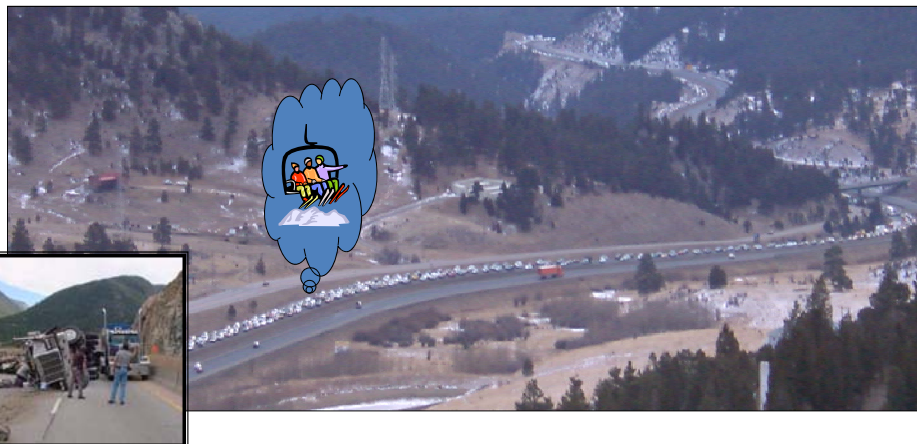
Route Description	Travel Time at posted speed (min)	Estimated Travel Time (minutes)	Speed (mph)
Vail to Copper	16	0	40
Copper to Frisco	5	0	43
Frisco to Silverthorne	3	5	43
Silverthorne to Tunnel	8	12	40
Tunnel to Georgetown	13	18	45
Georgetown to US 40/Empire	4	6	45
US 40/Empire to Idaho Springs	6	8	52
Idaho Springs to Evergreen Parkway	11	12	59
Evergreen Parkway to DEN/C-470	9	9	55
DEN/C-470 to Ward Road	5	5	62
Ward Road to I-76/Wadsworth	2	2	64
I-76/Wadsworth to I-25	5	5	55
I-25 to I-270	5	5	54
I-270 to I-225	3	3	55

Legend

- 0-15 MPH
- 15-25 MPH
- 25-50 mph
- over 50 mph



“Adapt”



“Alleviate” some congestion delays?

Interchange/Roadway Projects:

- Reconstruct Colfax Avenue @ I-225 interchange
- Widen I-225 from Mississippi Ave. to Parker Road
- Widen I-70 Twin Tunnels east of Idaho Springs
- 120th Avenue Extension from US-36 to US-287/Vance St.
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