

AGENDA

TRANSPORTATION ADVISORY COMMITTEE

Monday, August 24, 2020

1:30 p.m.

VIDEO/WEB CONFERENCE

Denver, CO

1. Call to Order
2. Public Comment
3. June 22, 2020 TAC Meeting Summary
(Attachment A)

ACTION ITEMS

4. Discussion of 2020-2023 Transportation Improvement Program (TIP) amendments
(Attachment B) Todd Cottrell
5. Discussion of Amending the FY 20-FY21 Unified Planning Work Program (UPWP)
(Attachment C) Todd Cottrell
6. Discussion of project funding for January 2021-June 2022 Human Service Transportation (HST) Set Aside Program of the 2020-2023 Transportation Improvement Program (TIP) and Federal Transit Administration (FTA) Section 5310 Program
(Attachment D) Travis Noon and Matthew Helfant
7. Discussion of the recommendation of projects to be funded through the Regional Transportation Operations and Technology (RTO&T) Set-Aside of the 2020-2023 Transportation Improvement Program (TIP)
(Attachment E) Steven Cook and Greg MacKinnon

INFORMATIONAL BRIEFINGS

8. 2050 small-area household and employment forecast for the 2050 Metro Vision Regional Transportation Plan
(Attachment F) Andy Taylor
9. Summary of engagement activities for Phase Two of the 2050 Metro Vision Regional Transportation Plan
(Attachment G) Jacob Riger

ADMINISTRATIVE ITEMS

10. Member Comment/Other Matters:
AMP Working Group update
11. Next Meeting – September 28, 2020
12. Adjournment



ATTACH A

ATTACHMENT A

MEETING SUMMARY
TRANSPORTATION ADVISORY COMMITTEE
Monday, June 22, 2020
Note: Meeting held virtually via GoToMeeting

MEMBERS (OR VOTING ALTERNATES) PRESENT:

Jeff Dankenbring	Arapahoe County – City of Centennial
Bryan Weimer	Arapahoe County
Sarah Grant	Broomfield, City and County
Megan Davis	Boulder County – City of Louisville
Phil Greenwald	Boulder County – City of Longmont
Kent Moorman (Chair)	Adams County – City of Thornton
Eileen Yazzie	Denver, City and County
David Gaspers	Denver, City and County
Ron Papsdorf	Denver Regional Council of Governments
John Cotten	Douglas County – City of Lone Tree
Art Griffith	Douglas County
Lisa Nguyen (Alternate)	Aviation
Andrea LaRew	Business
Dawn Sluder (Alternate)	Non-RTD Transit
Paul Jesaitis	CDOT Region 1
Jim Eussen (Alternate)	CDOT Region 4
Tim Kirby (Alternate)	CDOT – DTD
David Krutsinger	CDOT – DTR
Amanda Brimmer (Alternate)	Regional Air Quality Council
Stephen Strohming	Non-MPO Area
Carol Buchanan	DRMAC
Steve Durian (Vice Chair)	Jefferson County
Debra Baskett	Jefferson County – City of Westminster
Bill Sirois (Alternate)	Regional Transportation District
Bill Haas (Ex Officio)	Federal Highway Administration
Kristin Kenyon (Ex Officio)	Federal Transit Administration

OTHERS PRESENT:

Mac Callison (Alternate)	Arapahoe County – City of Aurora
Alex Hyde-Wright (Alternate)	Boulder County
Douglas Rex (Alternate)	Denver Regional Council of Governments
Tom Reiff (Alternate)	Douglas County-City of Castle Rock
Chris Hudson (Alternate)	Douglas County-City of Parker
Aaron Bustow (Ex Officio)	Federal Highway Administration
Ken Johnstone (Alternate)	Jefferson County – City of Wheat Ridge

Public: George Hohlacov, DEN; Stephen Pouliot, Michael Baker Intl.; Julie George, JoAnn Mattson, Jessica Myklebust, Jamie Grim, Danny Herrmann, Jordan Rudel, Jan Rowe, Heather Paddock, Herman Stockinger, Karen Schneiders, Brodie Ayers, Phil Von Hake, CDOT; Tammy Mauer, Centennial; Chris Chovan, Adams County; Melanie Choquette, Denver; Benjamin Pierce, Lauren Pulver, Douglas County

DRCOG staff: Jacob Riger, Robert Spotts, Steve Cook, Greg MacKinnon, Matthew Helfant, Emily Lindsey, Sang Gu Lee, Brad Calvert, Todd Cottrell, Alvan-Bidal Sanchez, Ashley Summers, Lawrence Tilong

Call to Order

Chair Kent Moorman called the meeting to order at 1:30 p.m.

Public Comment

There was no public comment.

Summary of the May 18, 2020 TAC meeting.

The summary was accepted. The summaries for the June 8 and June 15 TAC Work Sessions were also accepted.

ACTION ITEMS

Discussion on a technical amendment to the 2040 Metro Vision Regional Transportation Plan (2040 MVRTP)

Jacob Riger explained the amendment to the committee. During routine coordination with the E-470 Public Highway Authority, both agencies identified the need for a technical amendment to update the completion timeframe for an E-470 project within the 2040 MVRTP. The project in question is the widening of E-470 from four to six lanes between East Quincy Avenue and I-70.

Art Griffith MOVED to recommend to the Regional Transportation Committee the amended 2040 Metro Vision Regional Transportation Plan and associated DRCOG CO and PM-10 Conformity Determination, and the Denver Southern Subarea 8-hour Ozone Conformity Determination. The motion was seconded and passed with 25 in favor and 1 abstention from Phil Greenwald.

Discussion of the candidate project solicitation and evaluation process for the 2050 Metro Vision Regional Transportation Plan (2050 MVRTP)

Jacob Riger provided an overview of the proposed candidate project solicitation and evaluation process to the committee based on discussions with TAC at the May 18th meeting and June 8th and 15th work sessions. DRCOG staff proposes to solicit major candidate projects using the “dual-track” process, which was developed to address CDOT’s feedback about its role in this process. The proposed solicitation process has two parallel tracks:

- County transportation forums: DRCOG will solicit candidate priority projects through each forum.
- Inter-Agency Coordination Process: DRCOG, CDOT and RTD will develop draft regional investment priorities through a series of workshops based on the Policy Framework and Desired Outcomes (included in the attachment to this item).

Staff also proposes to qualitatively evaluate major projects using the Metro Vision Plan transportation-related primary objectives and federally required FAST Act performance measures. Candidate projects will be evaluated via a committee comprised of DRCOG, CDOT, RTD, and a staff representative from each county transportation forum. The Inter-Agency Coordination Process will review those outcomes, along with the Draft Financial Plan and the broader Policy Framework and Desired Outcomes, to develop draft program and project investment priorities.

Phil Greenwald MOVED to recommend to the Regional Transportation Committee the proposed 2050 MVRTP candidate project solicitation and evaluation process and criteria documented in Attachments 1 and 2. The motion was seconded and passed unanimously.

INFORMATIONAL BRIEFING

Status of Regional Data Acquisition Projects

Ashley Summers, Manager, Regional Planning and Development, provided the status update to the committee. DRCOG facilitates projects to collect and develop foundational datasets such as aerial imagery, lidar (elevation data), planimetric data (features of the built environment), and land cover data (classifications of the landscape). At the direction of local governments and other public partners, DRCOG is pursuing ambitious plans for our 2020/21 projects and are currently mitigating several challenges. The 2020 imagery and lidar projects are currently underway. The process to collect imagery is wrapped up as of May 8, approximately three weeks behind schedule. In 2021, the imagery and lidar data will be used as inputs to develop additional data sets for partners, including planimetric features and landcover. Due to the COVID-19 emergency, securing adequate funding for 2021 planimetric and land cover data projects may be challenging. As with all of data acquisition projects, DRCOG is exploring options to bring new funding partners to the table and payment options that maximize flexibility.

2020-2023 Transportation Improvement Program COVID-19 Impacts

Ron Papsdorf provided an overview of the impacts to the committee. The extent and duration of the economic impacts from COVID-19 is still uncertain. DRCOG staff want to understand these impacts (fiscal and otherwise) and begin a discussion of possible options to keep programmed federal funds flowing as much as possible.

DRCOG is aware that several of the most common transportation funding sources are being impacted: HUTF revenues, state gas tax, sales taxes, use taxes, car rental fees, lodging taxes. Current recovery options include:

- Delay Policy Waiver/Extension
- Reprogram Federal Funds
- Backfill Local Match with Toll Credits

DRCOG and other agencies, jurisdictions, and state and national associations are advocating for additional federal infrastructure funding to help with economic recovery, in addition to match relief for current federal funding to maintain project scopes of work for those with local funding reductions.

ADMINISTRATIVE ITEMS

Member Comment/Other Matters

Ron Papsdorf provided an update on the Urban Arterials Multimodal Safety Initiative (now known as Safer Main Streets) to the committee. DRCOG and CDOT are working closely to make sure this funding opportunity becomes available as soon as possible. COVID-19 has had an impact on CDOT's portion of the funding, but the Transportation Commission gave final approval to initiate the call for projects at its last meeting.

Emily Lindsey provided an AMP Working Group update to the committee. At the June meeting, the group received an update on the initial progress of the three steering committees. The group also had a conversation about addressing electrification and agree to continue coordination on electrification efforts. The group received an informational briefing on the Colorado Autonomous Mobility Task Force from CDOT.

Bryan Weimer stated his understanding that CDOT is changing the requirements for Policy Directive 1601 and wanted to know what these changes are and when they would go into effect. Jordan Rudel stated that he did not have the answers at this time. Chair Moorman suggested that this topic should be brought back to the TAC at a later date as an informational briefing; Mr. Papsdorf concurred.

Next Regular Meeting – July 27, 2020 (subsequently canceled)

There were no comments from members. The meeting adjourned at 3:50 p.m.

ATTACH B

ATTACHMENT B

To: Chair and Members of the Transportation Advisory Committee

From: Todd Cottrell, Senior Planner, Short Range Transportation Planning
(303) 480-6737 or tcottrell@drcog.org

Meeting Date	Agenda Category	Agenda Item #
August 24, 2020	Action	4

SUBJECT

2020-2023 Transportation Improvement Program (TIP) amendments.

PROPOSED ACTION/RECOMMENDATIONS

DRCOG staff recommends approval of the proposed amendments because they comply with the current TIP amendment procedures, as contained within the Board-adopted [2020-2023 TIP Policy](#).

ACTION BY OTHERS

N/A

SUMMARY

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

The TIP projects to be amended are shown below and listed in Attachment 1. The proposed amendments to the [2020-2023 Transportation Improvement Program](#) have been found to conform with the State Implementation Plan for Air Quality.

TIP Amendments

- **2020-086** **I-25 Valley Highway: Phases 3 and 4**
Reduce State SB-1 funds from \$60 million to \$575,000 due to COVID-19 impacts to state revenues.
- **New Project** **Bridge Reconstruction: I-70 and Harlan St.**
Add \$21.5 million in State SB-267 funds for the reconstruction of the I-70 bridge over Harlan St. in Wheat Ridge.

PREVIOUS DISCUSSIONS/ACTIONS

N/A

PROPOSED MOTION

Move to recommend to the Regional Transportation Committee the attached amendments to the *2020-2023 Transportation Improvement Program (TIP)*.

ATTACHMENTS

1. Proposed TIP amendments

ADDITIONAL INFORMATION

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

2020-086: Decrease funding due to COVID-19 impacts to state revenues

Existing

Title: **I-25 Valley Highway: Phases 3 and 4**

Project Type: **Roadway Operational Improvements**

TIP-ID: **2020-086**

STIP-ID:

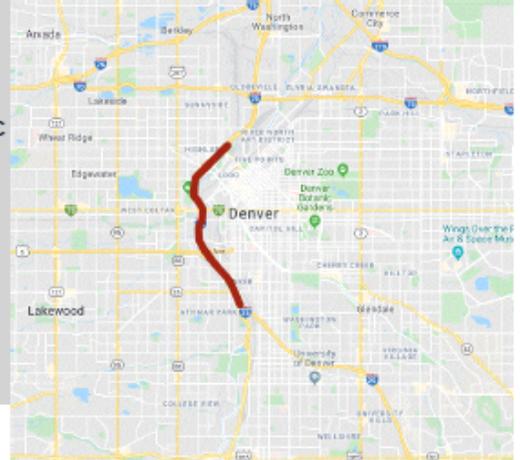
Open to Public:

Sponsor: **CDOT Region 1**

Project Scope

Valley Highway Phases 3 and 4 consolidate heavy and light rail tracks away from I-25 and provide space to improve safety through highway geometric and access improvements. This project also includes funding for I-25 Corridor Traffic and Revenue Study.

FY20 funds are primarily for ROW purchases.



Affected Municipality(ies)

Denver

Affected County(ies)

Denver

Performance Measures

- Bridge Condition
- Congestion
- Freight Reliability
- Pavement Condition
- Safety
- Travel Time Reliability

Amounts in \$1,000s	Prior Funding	FY20	FY21	FY22	FY23	Future Funding	Total Funding
Federal		\$0	\$0	\$0	\$0		
State (SB-1)		\$60,000	\$0	\$0	\$0		
Local		\$0	\$0	\$0	\$0		
Total	\$0	\$60,000	\$0	\$0	\$0	\$0	\$60,000

Revised

Amounts in \$1,000s	Prior Funding	FY20	FY21	FY22	FY23	Future Funding	Total Funding
Federal		\$0	\$0	\$0	\$0		
State (SB-1)		\$575	\$0	\$0	\$0		
Local		\$0	\$0	\$0	\$0		
Total	\$0	\$575	\$0	\$0	\$0	\$0	\$575

New Project: Add \$21.5 million in state SB-267 funding for I-70 bridge reconstruction over Harlan St.

New Project

Title: **Bridge Reconstruction: I-70 and Harlan St.**

Project Type: **Bridge**

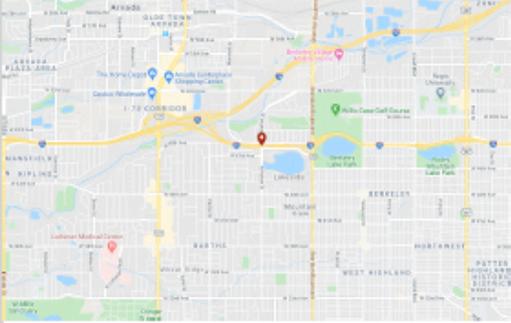
TIP-ID: **Request**

STIP-ID:

Open to Public:

Sponsor: **CDOT Region 1**

Project Scope
Reconstruction of the I-70 bridge over Harlan St.



Affected Municipality(ies)
Wheat Ridge

Affected County(ies)
Jefferson

- Performance Measures**
- Bridge Condition
 - Congestion
 - Freight Reliability
 - Pavement Condition
 - Safety
 - Travel Time Reliability

Amounts in \$1,000s	Prior Funding	FY20	FY21	FY22	FY23	Future Funding	Total Funding
Federal		\$0	\$0	\$0	\$0		
State (SB267)		\$0	\$21,500	\$0	\$0		
Local		\$0	\$0	\$0	\$0		
Total	\$0	\$0	\$21,500	\$0	\$0	\$0	\$21,500

ATTACH C

ATTACHMENT C

To: Chair and Members of the Transportation Advisory Committee

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

Meeting Date	Agenda Category	Agenda Item #
August 24, 2020	Action	5

SUBJECT

Amending the *FY 20-FY21 Unified Planning Work Program (UPWP)*.

PROPOSED ACTION/RECOMMENDATIONS

DRCOG staff recommends approval of the proposed FY 2020-FY 2021 UPWP amendments.

ACTION BY OTHERS

N/A

SUMMARY

The *FY 2020-FY 2021 Unified Planning Work Program (UPWP)* describes the transportation planning activities to be conducted in the Denver region. The UPWP, prepared biennially, is the two-year work program for the MPO and serves as the management tool for scheduling, budgeting, and monitoring the planning activities of participating entities. The FY 2020-FY2021 UPWP was adopted in July 2019, and most recently amended earlier this year in May.

Periodically, amendments to the UPWP are necessary to reflect changes to work that will be performed, other updated revenue or expenditure information, or to comply with changes in federal law. This amendment is necessary to reflect updated anticipated FY2021 revenues (Table 1 on p. 44) and how and where those revenues are expended (Table 2 on p. 45). The amendments are 1) that anticipated federal resources increased slightly and 2) that CDOT and DRCOG agree that DRCOG's contribution to the Statewide Travel Survey (\$500,000 in FY 2021) will be held back and paid out directly by CDOT rather than transferring those funds between the agencies. The proposed amendments to the document are shown in the track changes version of the FY 2020-FY 2021 UPWP (see attachment).

PREVIOUS DISCUSSIONS/ACTIONS

N/A

PROPOSED MOTION

Move to recommend to the Regional Transportation Committee amendments to the *FY 2020-FY 2021 Unified Planning Work Program*.

ATTACHMENT

Link: [Amended FY 2020-FY 2021 Unified Planning Work Program](#) (in track-changes)

ADDITIONAL INFORMATION

If you need additional information, please contact Todd Cottrell at (303) 480-6737 or tcottrell@drcog.org.

ATTACH D

ATTACHMENT D

To: Chair and Members of the Transportation Advisory Committee

From: Travis Noon, Senior Program Specialist
303-480-6775 or tnoon@drcog.org

Meeting Date	Agenda Category	Agenda Item #
August 24, 2020	Action	6

SUBJECT

January 2021- June 2022 Human Service Transportation (HST) Set Aside Program
Transportation Improvement Program (TIP) and Federal Transit Administration (FTA)
Section 5310 Projects.

PROPOSED ACTION/RECOMMENDATIONS

Staff recommends approval of the January 2021- June 2022 HST and FTA 5310 projects as recommended by the DRCOG Call for Projects Peer Review Panel ("Panel").

ACTION BY OTHERS

N/A

SUMMARY

In 2018, DRCOG adopted a set-aside of \$4 million over four years for Human Service Transportation (HST) as part of the [FY 2020-2023 TIP Policy](#). The HST set-aside provides a dedicated funding source to improve mobility for vulnerable populations, including older adults, low-income individuals, veterans, and individuals with disabilities. This set-aside complements FTA 5310 Enhanced Mobility of Seniors and Individuals with Disabilities and Older Americans Act/Older Coloradans Act dollars by funding identified needs that are underfunded or underserved by those sources.

In December 2019, DRCOG became the Designated Recipient for the FTA 5310 program in the Denver-Aurora Urbanized Area. This funding pot is just under \$2 million annually with small increases typically from year to year.

DRCOG conducted a combined call for projects for both the HST set-aside and Denver-Aurora Urbanized Area FTA 5310 projects to be implemented between January 1, 2021 and June 30, 2022. Projects are intended to be 18-month projects, which will allow these two funding sources to be aligned with the Older Americans Act/Older Coloradans Act funding administered by the AAA.

Applications for both funding sources were evaluated by a Panel made up staff from Mile High Connects, the Colorado Department of Public Health and the Environment, and the Colorado Cross Disability Coalition, as well as a representative from DRCOG's Advisory Committee on Aging. DRCOG staff participated on the panel in an advisory role and did not score the projects. The Panel scored the projects based on the criteria from the 5310 Program Management Plan (Attachment 1). Projects that scored the highest were recommended for funding and placed into the funding pot (FTA 5310 or HST) that was the best or only fit based on the project's characteristics as compared to the eligibility criteria for each funding source. The Panel's recommendations are attached (Attachment 2).

DRCOG staff conducted an equity analysis to ensure distribution of funds to cover services across the service area. Projects not selected for funding were limited in scope and clients that would have been served under those projects are able to receive services through other projects recommended for funding.

PREVIOUS DISCUSSIONS/ACTIONS

N/A

PROPOSED MOTION

Move to recommend to the Regional Transportation Committee approval of HST and FTA 5310 projects for January 2021 through June 2022 as recommended by Peer Review Panel.

ATTACHMENTS

1. *Link:* [FTA 5310 Project Management Plan](#)
2. Project Scoring and Recommendations
3. Staff presentation

ADDITIONAL INFORMATION

For additional information, please contact Travis Noon, Senior Program Specialist at 303-480-6775 or tnoon@drcog.org or Matthew Helfant, Senior Planner, Long Range Transportation Planning, at 303-480-6731 or mhelfant@drcog.org.

FTA 5310 Denver-Aurora
DRCOG Human Services TIP Set Aside
Project Recommendations

Respondent	Service	Score	Requested	Reccomended	Total Awarded	FTA 5310 Funds	HST Funds
Via Mobility Services	Transportation - Mobility Management	2.9	\$1,000,391.32	Yes	\$500,000.00	\$400,000.00	\$100,000.00
Via Mobility Services	Transportation - Operating	2.9	\$2,302,625.00	Yes	\$1,500,000.00	\$1,000,000.00	\$500,000.00
Via Mobility Services	Capital Projects - Software	2.9	\$300,000.00	Yes	\$300,000.00	\$258,000.00	\$42,000.00
Via Mobility Services	Capital Projects - Security Cameras	2.6	\$248,000.00	Yes	\$248,000.00	\$0.00	\$248,000.00
Denver Regional Mobility & Access Council	Transportation - Mobility Management	2.6	\$438,923.20	Yes	\$437,000.00	\$350,000.00	\$87,000.00
A Little Help	Transportation - Mobility Management	2.4	\$66,990.00	Yes	\$45,000.00	\$0.00	\$45,000.00
Douglas County Government	Transportation - Mobility Management	2.3	\$936,374.40	Yes	\$737,000.00	\$450,000.00	\$287,000.00
City of Lakewood	Transportation - Operating	2.2	\$75,000.00	Yes	\$60,000.00	\$60,000.00	\$0.00
Laradon Hall Society for Exceptional Children and Adults	Capital Projects - 4 Replacement Vehicles	2.2	\$281,206.35	Yes	\$211,734.00	\$211,734.00	\$0.00
Boulder County	Planning Project	2.1	\$16,000.00	Yes	\$16,000.00	\$0.00	\$16,000.00
Laradon Hall Society for Exceptional Children and Adults	Transportation - Operating	2.0	\$141,411.50	Yes	\$72,000.00	\$72,000.00	\$0.00
Boulder County	Transportation - Operating	1.9	\$184,000.00	Yes	\$150,000.00	\$0.00	\$150,000.00
A Little Help	Capital Projects - Facilities	1.9	\$25,000.00	Yes	\$25,000.00	\$0.00	\$25,000.00
City of Arvada	Transportation - Mobility Management	1.9	\$532,392.00	No	\$0.00	\$0.00	\$0.00
Continuum of Colorado	Transportation - Operating	1.6	\$182,404.22	No	\$0.00	\$0.00	\$0.00
Denver Regional Council of Governments	Ride Alliance Annual Maintenance	N/A	\$0.00	N/A	\$57,000.00	\$57,000.00	\$0.00
Total			\$6,730,717.99		\$4,358,734.00	\$2,858,734.00	\$1,500,000.00



2021 DRCOG HST TIP Set- Aside and FTA 5310 Denver- Aurora Projects

Presented by:

Travis P. Noon

August 24, 2020



Background

- Federal Transit Administration 5310 Denver-Aurora (5310)
 - DRCOG became direct recipient in December 2019
 - Approximately \$2 million annually
- DRCOG Human Services Transportation TIP Set-Aside (HST)
 - Adopted as part of the 2020-2023 TIP Policy
 - \$4 million over 4 years (\$1 million annually)
 - Complements 5310 and Older Americans Act (OAA) funding.



Call for Projects

- Released a call for projects in April
 - Projects are intended to be 18-month projects beginning January 1, 2021 and ending June 30, 2022
 - This will align the funding with OAA funding administered through the AAA
- DRCOG's first call for 5310 funding
 - Prior years administered through CDOT



Project Selection

- Peer review panel of independent stakeholder reviewed applications
 - Scored according to the criteria out lined in DRCOG's 5310 Project Management Plan (PMP)
 - DRCOG Staff participated in the review as non-scoring members
- Review committee recommendations
 - Highest scored projects were recommended for funding
 - Levels of funding recommended were adjusted to match projected available funds
 - Projects not awarded funding were limited in scope
- Per the PMP DRCOG will be setting aside approximately \$57,000 for Ride Alliance Annual Maintenance



Proposed Motion

- Move to recommend to the Regional Transportation Committee approval of HST and FTA 5310 projects for January 2021 through June 2022 as recommended by Peer Review Panel.



Questions?

- Questions?

Travis P Noon
Senior Program Specialist
303-480-6775
tnoon@drcog.org

THANK YOU

ATTACHE

ATTACHMENT E

To: Chair and Members of the Transportation Advisory Committee
From: Steve Cook, Transportation Modeling and Operations Manager
303-480-6740 or scook@drcog.org

Meeting Date	Agenda Category	Agenda Item #
August 24, 2020	Action	7

SUBJECT

Recommendation of projects to be funded through the Regional Transportation Operations and Technology (RTO&T) Set-Aside of the *2020-2023 Transportation Improvement Program* (TIP).

PROPOSED ACTION/RECOMMENDATIONS

DRCOG staff recommends approval of the projects proposed by the RTO&T Set-Aside Project Review Panel.

ACTION BY OTHERS

[April 15, 2020](#) - Board of Directors approved the RTO&T Set-Aside Eligibility Rules and Selection Process.

SUMMARY

The DRCOG Board adopted the *2020-2023 Transportation Improvement Program* (TIP) that included the Regional Transportation Operations & Technology (RTO&T) Set-Aside at \$5 million per year.

The RTO&T Set-Aside contains the following components:

- RTO&T Improvement Program of projects (~\$3.5 million per year)
 - traffic signal systems, fiber communications system expansion, multimodal detection, monitoring cameras, interjurisdictional corridor management, and transportation management center infrastructure.
- DRCOG Regional Traffic Operations Program (~\$1.5 million per year)
 - Technical services (e.g. traffic signal system planning and design) and support from DRCOG staff and engineering consultants for project implementation.

Accounting for previous project funding commitments and cost savings, approximately \$13.8 million is available for capital projects to be allocated over the next three fiscal years.

The purpose of the RTO&T set-aside is to fund transportation technology and systems improvements that contribute to the implementation of key outcomes within Metro Vision and the Metro Vision Regional Transportation Plan. In April 2020, DRCOG issued a call for letters of intent with full applications due July 8, 2020. A total of 30 applications were submitted for consideration with a total federal request of \$21,621,547.

After applications were received, staff convened an internal Project Review Panel that individually evaluated the applications and met several times in July 2020 to review evaluation outcomes and rank applications. The Project Review Panel recommends the following projects for funding:

Sponsor	Project Title	Federal Amount
RTD	Transit Signal Priority (TSP) Conditionality	\$450,000
RTD	TSP Data Management	\$530,000
Littleton	System Communication	\$589,600
Castle Rock	Automated Traffic Signal Performance Measurement (ATSPM) System	\$694,960
Westminster	Traffic Camera & Signal System Upgrade	\$283,176
Westminster	Controllers & Communications Switches Upgrades	\$445,855
Thornton	Travel Time Monitoring	\$100,326
Northglenn	ATSPM System	\$960,000
CDOT R1	Traffic Camera Expansion	\$160,914
Denver	Bluetooth Expansion	\$977,184
Denver	Pedestrian Detection	\$926,766
Centennial	System-to-System (S2S) Communications	\$800,000
CDOT R1	Advance detection (Arapahoe Rd)	\$222,992
CDOT R1	Advance detection (Wadsworth Blvd)	\$668,976
Boulder	ATSPM System & System Communication	\$1,349,300
Denver	Adaptive Signal Control & ATSPM System	\$891,100
CDOT R4	Advance Detection SH 119	\$387,420
CDOT R4	Advance Detection US 287	\$180,180
Jefferson County	System Communications	\$433,907
Douglas County	ATSPM System	\$292,000
Parker	Traffic Responsive Signal Control	\$400,000

Sponsor	Project Title	Federal Amount
Commerce City	ATSPM System	\$189,600
Aurora	Signal Controller Upgrades	\$795,800
Aurora	Signal System Upgrade	\$460,000
Lone Tree	Adaptive Signal Control	\$200,000
Erie	Signal System Communications	\$893,000

The total recommended allocation is \$14,283,056, which is \$438,134 above the amount available for capital projects. It is recommended that these additional funds be reallocated from the DRCOG Regional Traffic Operations Program. The project recommendations were also reviewed by the Advanced Mobility Partnership (AMP) and the Regional Transportation Operations Working Group.

In addition, the review panel recommended the following waiting list if funds become available over the duration of the program:

Sponsor	Project Title	Federal Amount
Denver	Bluetooth Expansion (remainder)	\$705,312
CDOT R1	Advance detection (remainder)	\$364,896
Boulder	ATSPM System & System Communication (remainder)	\$1,161,700
Aurora	ATSPM System Chambers	\$632,500
CDOT R1	SH 7 System Communications	\$2,708,412
CDOT R1	SH 121 System Communications	\$353,271

PREVIOUS DISCUSSIONS/ACTIONS

[January 28, 2019](#) TAC – Initial briefing on DRCOG’s RTO&T set-aside program
[September 23, 2019](#) TAC – Update briefing on DRCOG’s RTO&T Set-Aside Program
[March 23, 2020](#) TAC – Recommend approval of RTO&T Set-Aside Eligibility Rules and Selection Process

PROPOSED MOTION

Move to recommend to the Regional Transportation Committee the above projects be funded through the RTO&T Set-Aside of the DRCOG 2020–2023 TIP.

ATTACHMENTS

1. Recommended Project Allocations
2. Recommended Annual Programming Amounts
3. Staff presentation

ADDITIONAL INFORMATION

If you need additional information, please contact Steve Cook, Transportation Modeling and Operations Manager, at 303-480-6749 or scook@drcog.org; or Greg MacKinnon, Transportation Operations Program Manager, at 303 480-5633 or gmackinnon@drcog.org.

**Table 1: 2020 Call for Regional Transportation Operations Technology Set-Aside
Criteria Points and Review Panel Recommended Projects**

Criteria Pts.	Project	Federal Request	Recommended Allocation	Notes
	Recommended for Funding:			
67	RTD Transit Signal Priority (TSP) Conditionality	\$ 450,000	\$ 450,000	
65	RTD TSP Data Management	\$ 530,000	\$ 530,000	
58	Littleton System Communication	\$ 606,400	\$ 589,600	Signal head purchases ineligible
56	Castle Rock Automated Traffic Signal Performance Measures (ATSPM) Sy	\$ 798,560	\$ 694,960	N. Meadows and Meadows Blvd. not on regional roadway system
54	Westminster Traffic Cameras & Signal System Upgrade	\$ 283,176	\$ 283,176	
54	Westminster Controllers & Switches Upgrade	\$ 445,855	\$ 445,855	
53	Thornton Travel Time Monitoring	\$ 100,326	\$ 100,326	
53	Northglenn ATSPM System	\$ 960,000	\$ 960,000	
53	CDOT R1 Traffic Camera Expansion	\$ 160,914	\$ 160,914	
51	Denver Bluetooth Expansion	\$ 1,682,496	\$ 977,184	Partial allocation for 118 locations identified on priority corridors
51	Denver Pedestrian Detection	\$ 926,766	\$ 926,766	
51	Centennial System-to-System (S2S) Communications	\$ 800,000	\$ 800,000	
47	CDOT R1 Advance detection	\$ 1,682,496	\$ 891,968	Arapahoe Rd. and N. Wadsworth Blvd. elements
47	Boulder ATSPM System & System Communications	\$ 2,511,000	\$ 1,349,300	Top 3 priority corridors and part of Broadway
47	Denver Adaptive Signal Control & ATSPM System	\$ 1,133,100	\$ 891,100	Stop bar detector purchases ineligible (deducted \$242,000)
46	CDOT R4 Advance Detection SH 119	\$ 387,420	\$ 387,420	
45	CDOT R4 Advance Detection US 287	\$ 180,180	\$ 180,180	
45	Jefferson County System Communications	\$ 433,907	\$ 433,907	
44	Douglas County ATSPM System	\$ 292,000	\$ 292,000	
43	Parker Traffic Responsive Signal Control	\$ 400,000	\$ 400,000	
42	Commerce City ATSPM System	\$ 189,600	\$ 189,600	
41	Aurora Signal Controller Upgrades	\$ 795,800	\$ 795,800	
41	Aurora Signal System Upgrade	\$ 460,000	\$ 460,000	
38	Lone Tree Adaptive Signal Control	\$ 200,000	\$ 200,000	
38	Erie Signal System Communication	\$ 893,000	\$ 893,000	
	Wait List Projects:			
51	Denver Bluetooth Expansion (remainder)	\$ 705,312		Remaining project elements
47	CDOT R1 Advance detection (remainder)	\$ 364,896		Remaining S. Wadsworth Blvd. element of project
47	Boulder ATSPM System & System Communication (remainder)	\$ 1,161,700		Remaining project corridors
38	Aurora ATSPM System Chambers	\$ 632,500		
36	CDOT R1 SH 7 System Communications	\$ 2,708,412		
31	CDOT R1 SH 121 System Communications	\$ 353,271		
	Others Ineligible for Set-Aside:			
	Boulder County Transit Corridor Study	\$ 400,000		Minor RTO&T elements; implementation uncertain; eligible other set-asides
	Lakewood Travel Time Message Board	\$ 650,000		Required match not provided; portable sign procurement ineligible

**Table 2: 2020 Regional Transportation Operations and Technology Set-Aside
Review Panel Recommended Projects and Annual Programming of Funds**

Submittal		Brief Summary	FY21		FY22		FY23		Totals		Total Project Cost
			Federal Allocation	Non-Federal Match							
Aurora	Automated Traffic Signal Performance Measures (ATSPM) System Chambers	Upgrade signal controllers and deploy detection and implement ATSPM.							\$0	\$0	\$0
Aurora	Signal System Upgrade	Upgrade traffic signal system hardware and software.			\$460,000				\$460,000	\$0	\$460,000
Aurora	Signal Controller Upgrades	Upgrade signal controllers.					\$795,800		\$795,800	\$0	\$795,800
Boulder	ATSPM & System Communication	Upgrade signal system communications to fiber optic; install traffic cameras (connected to existing enterprise video management system); deploy radar advance detection and implement ATSPM system.			\$320,000	\$80,000	\$1,029,300	\$257,325	\$1,349,300	\$337,325	\$1,686,625
Boulder County	Transit Corridor Study	A study and preliminary design for transit priority improvements that support Flatiron Flyer operations.							\$0	\$0	\$0
Castle Rock	ATSPM	Deployment of advance detection for expansion of existing ATSPM. Also includes deployment of advance detection for expansion of CDOT ATSPM and integration between the two systems.	\$666,160	\$166,540	\$28,800	\$7,200			\$694,960	\$173,740	\$868,700
CDOT R1	Advance detection	Deployment of advance detection for expansion of existing ATSPM.	\$222,992				\$668,976		\$891,968	\$0	\$891,968
CDOT R1	Traffic Camera Expansion	Expanded deployment of traffic cameras, expanding coverage of an existing traffic camera system.	\$57,470	\$14,367	\$71,836	\$17,960	\$31,608	\$7,902	\$160,914	\$40,229	\$201,143
CDOT R1	SH 121 System Communications	Extension of fiber optic signal interconnect.							\$0	\$0	\$0
CDOT R1	SH 7 System Communications	Extension of fiber optic signal interconnect.							\$0	\$0	\$0
CDOT R4	Advance Detection SH 119	Upgrade/replacement of existing video detection to provide advance detection capability. The primary purpose is to expand ATSPM functionality. The application also suggests adaptive signal control will be deployed.			\$387,420				\$387,420	\$0	\$387,420
CDOT R4	Advance Detection US 287	Upgrade/replacement of existing video detection to provide advance detection capability. The primary purpose is to expand ATSPM functionality. The application also suggests adaptive signal control will be deployed.	\$180,180						\$180,180	\$0	\$180,180
Centennial	System-to-System (S2S) Communication	Develop a multiagency operations concept for jurisdictions with Centracons signal control systems. Design and implement infrastructure and systems improvements to close identified gaps to achieve concept, which is largely envisioned as SPM and incident management.	\$200,000	\$50,000	\$300,000	\$75,000	\$300,000	\$75,000	\$800,000	\$200,000	\$1,000,000
Commerce City	ATSPM System	Upgrade controllers, extend signal interconnect communications, and deploy advance detection to support new implementation of ATSPM.	\$47,400	\$11,850	\$142,200	\$35,550			\$189,600	\$47,400	\$237,000

**Table 2: 2020 Regional Transportation Operations and Technology Set-Aside
Review Panel Recommended Projects and Annual Programming of Funds**

Submittal		Brief Summary	FY21		FY22		FY23		Totals		Total Project Cost
			Federal Allocation	Non-Federal Match							
Denver	Bluetooth Expansion	Deploy travel time monitoring devices to expand an existing travel time monitoring system. This includes expansion of the existing data feed to CDOT who will distribute the traveler information.					\$977,184	\$244,296	\$977,184	\$244,296	\$1,221,480
Denver	Adaptive Signal Control & ATSPM System	Deploy advance detection. Deploy adaptive signal control using data from advance (and stop bar) detection. Deploy ATSPM using data from advance detection.			\$891,100				\$891,100	\$0	\$891,100
Denver	Pedestrian Detection	Deploy passive pedestrian detection devices to activate and control pedestrian phases at select intersections.	\$926,766	\$231,691					\$926,766	\$231,691	\$1,158,457
Douglas County	ATSPM System	Signal controller upgrades and procurement and deployment of ATSPM system.			\$292,000	\$73,000			\$292,000	\$73,000	\$365,000
Erie	Signal System Communications	Installation of a new traffic signal system. Installation of a new communications system interconnecting existing and future traffic signals.	\$173,000		\$720,000				\$893,000	\$0	\$893,000
Jefferson County	System Communications	Installation of signal interconnect infrastructure connecting existing wireless communications system and Jefferson County's TMC.	\$433,907						\$433,907	\$0	\$433,907
Lakewood	Travel Time Message Board	Development and deployment of a traveler information system including for dynamic messages on arterial roadways.							\$0	\$0	\$0
Littleton	System Communications	Install fiber optic signal interconnect. Upgrade traffic signal controllers, deploy advance detection, expand existing travel time monitoring system, and implement traffic cameras. All improvements are in advance of and in support of Centennial's multiagency S2S project.	\$404,266	\$101,067	\$185,334	\$46,334			\$589,600	\$147,401	\$737,001
Lone Tree	Adaptive Signal Control	Upgrade signal controllers, deploy advance detection and stop bar detection to expand existing adaptive signal control system. The project also procures the ATSPM module for each intersection.			\$200,000	\$50,000			\$200,000	\$50,000	\$250,000
Northglenn	ATSPM System	Upgrade traffic signal controllers and deploy a new wireless communications system interconnecting signals. Deploy advance detection cameras at each intersection. Proposer states commitment to share data with CDOT.	\$960,000	\$240,000					\$960,000	\$240,000	\$1,200,000
Parker	Traffic Responsive Signal Control	Deployment of advance detection ('mid-block counting stations') and traffic cameras to expand existing systems.	\$400,000	\$100,000					\$400,000	\$100,000	\$500,000
RTD	Transit Signal Priority (TSP) Data Management	Develop and design data sharing system with Denver. Procure and implement server infrastructure, develop and deploy software, and develop and deploy data catalog and API for data sharing.	\$180,000		\$350,000				\$530,000	\$0	\$530,000

**Table 2: 2020 Regional Transportation Operations and Technology Set-Aside
Review Panel Recommended Projects and Annual Programming of Funds**

Submittal		Brief Summary	FY21		FY22		FY23		Totals		Total Project Cost
			Federal Allocation	Non-Federal Match							
RTD	TSP Conditionality	Develop and deploy conditional TSP, which requires integration of existing TSP system with the Automated Passenger Counting (APC) system and the real-time transit schedule.	\$327,000		\$123,000				\$450,000	\$0	\$450,000
Thornton	Travel Time Monitoring System	Deploy travel time monitoring devices and a new travel time monitoring system. Project description includes commitment to sharing data with CDOT for subsequent distribution as traveler information.	\$100,326	\$25,082					\$100,326	\$25,082	\$125,408
Westminster	Controllers & Switches Upgrades	Upgrade traffic signal controllers and associated communications infrastructure.	\$445,855						\$445,855	\$0	\$445,855
Westminster	Traffic Cameras and Signal System Upgrade	Installation of traffic cameras expanding an existing system. Deployment of travel time monitoring technology and SPM module.	\$283,176	\$70,794					\$283,176	\$70,794	\$353,970

Totals \$6,008,498 \$1,011,391 \$4,471,690 \$385,044 \$3,802,868 \$584,523 \$14,283,056 \$1,980,958 \$16,264,014



FY 20-23 Regional Transportation Operations and Technology Set-Aside: **Review Panel Recommendations**



REVIEW PANEL PROCESS OVERVIEW



Evaluation Criteria

Category	Description	Weight
Alignment with Metro Vision	The project's ability to contribute to the implementation of Metro Vision.	10
Alignment with RTO&T Objectives	The extent of the project's capability to contribute to program objectives, including the main objective: "Improve transportation system performance and reliability."	15
Collaboration and Partnerships	The extent to which the project involves multi-agency and/or multi-jurisdictional collaboration.	15
Innovation and Transferability	The extent to which the project involves an innovative practice or technique and/or potential transferability of project process or products.	10
Project Need	The extent to which the project location is an area needing improvement offered by the project.	20
Project Impact	The extent to which the project provides improvements in air quality, congestion and travel reliability	25
Risk Management Plan	The extent to which project development prepared for the rigors of implementation.	5



Review Panel Process

- Review panel individually evaluated the Metro Vision and program objectives
- DRCOG staff determined the CMP and HIN designations – Project Need
- DRCOG staff translated the emissions and congestion benefits information to common units. This information was normalized by the total project costs
- DRCOG staff assessed the effort to prepare an initial risk management plan



REVIEW PANEL OUTCOMES



Ordered List of Projects

- Prepared ordered list while considering eligibility exclusions
- Assessed project values against available funding

~\$13,850,000 over three years

- Assigned funding to prepare project phase sizes no larger than about \$1 M resulting in partial allocation to:
 - Denver-1 FY21 Bluetooth Expansion
 - CDOT R1-1 Advance Detection
 - Boulder ATSPM & System Communication
- Ordered waiting list in the case there are project savings or returned funds



Eligibility Exclusions

- Ineligible project elements:
 - Littleton – new signal heads ineligible
 - Castle Rock – N Meadows and Meadows Blvd not on RRS
 - Denver - stop bar detection ineligible
- Review panel ultimately determined two projects ineligible:
 - Lakewood Travel Time Message Boards
 - Boulder County Transit Corridor Study



Recommended Projects – Federal Allocations

Criteria	Project	Federal Amount	Cumulative Sum
67	RTD-2 TSP Conditionality	\$ 450,000	\$ 450,000
65	RTD-1 TSP Data Management	\$ 530,000	\$ 980,000
58	Littleton System Communication	\$ 589,600	\$ 1,569,600
56	Castle Rock ATSPM	\$ 694,960	\$ 2,264,560
54	Westminster-2 CCTV & Signal System Upgrade	\$ 283,176	\$ 2,547,736
54	Westminster-1 Controllers & Switches	\$ 445,855	\$ 2,993,591
53	Thornton Travel Time Monitoring	\$ 100,326	\$ 3,093,917
53	Northglenn ATSPM	\$ 960,000	\$ 4,053,917
53	CDOT R1-2 CCTV	\$ 160,914	\$ 4,214,831
51	Denver-1 FY21 Bluetooth Expansion	\$ 977,184	\$ 5,192,015
51	Denver-3 FY23 Ped Detection	\$ 926,766	\$ 6,118,781
51	Centennial S2S Communication	\$ 800,000	\$ 6,918,781
47	CDOT R1-1 Advance detection	\$ 222,992	\$ 7,141,773

Criteria	Project	Federal Amount	Cumulative Sum
47	CDOT R1-1 Advance detection	\$ 668,976	\$ 7,810,749
47	Boulder ATSPM & System Communication	\$ 1,349,300	\$ 9,160,049
47	Denver-2 FY22 Adaptive ATSPM	\$ 891,100	\$ 10,051,149
46	CDOT R4-1 Detection SH 119	\$ 387,420	\$ 10,438,569
45	CDOT R4-2 Detection US 287	\$ 180,180	\$ 10,618,749
45	Jefferson County System Communication	\$ 433,907	\$ 11,052,656
44	Douglas County ATSPM	\$ 292,000	\$ 11,344,656
43	Parker Traffic Responsive Control	\$ 400,000	\$ 11,744,656
42	Commerce City ATSPM	\$ 189,600	\$ 11,934,256
41	Aurora-3 Signal Controller Upgrades	\$ 795,800	\$ 12,730,056
41	Aurora-2 Signal System Upgrade	\$ 460,000	\$ 13,190,056
38	Lone Tree Adaptive Control	\$ 200,000	\$ 13,390,056
38	Erie Signal System Communication	\$ 893,000	\$ 14,283,056



Recommended Waiting List

Criteria	Project	Federal Amount	Cumulative Sum
51	Denver-1 FY21 Bluetooth Expansion (remainder)	\$ 705,312	\$ 14,988,368
47	CDOT R1-1 Advance detection (remainder)	\$ 364,896	\$ 15,353,264
47	Boulder ATSPM & System Communication (remainder)	\$ 1,161,700	\$ 16,514,964
38	Aurora-1 ATSPM Chambers	\$ 632,500	\$ 17,147,464
36	CDOT R1-4 SH 7 System Communications	\$ 2,708,412	\$ 19,855,876
31	CDOT R1-3 SH 121 System Communications	\$ 353,271	\$ 20,209,147



RECOMMENDED PROGRAMMING BY YEAR



Recommended Programming By Year

	FY21		FY22		FY23	
	Federal Allocation	Non-Federal Match	Federal Allocation	Non-Federal Match	Federal Allocation	Non-Federal Match
Aurora ATSPM Chambers						
Aurora Signal System Upgrade			\$460,000			
Aurora Signal Controller Upgrades					\$795,800	
Boulder ATSPM & System Communications			\$320,000	\$80,000	\$1,029,300	\$257,325
Boulder County Transit Corridor Study						
Castle Rock ATSPM System	\$666,160	\$166,540	\$28,800	\$7,200		
CDOT R1 Advance detection	\$222,992				\$668,976	
CDOT R1 Traffic Camera Expansion	\$57,470	\$14,367	\$71,836	\$17,960	\$31,608	\$7,902
CDOT R1 SH 121 System Communications						
CDOT R1 SH 7 System Communications						
CDOT R4 Advance Detection SH 119			\$387,420			
CDOT R4 Advance Detection US 287	\$180,180					
Centennial S2S Communications	\$200,000	\$50,000	\$300,000	\$75,000	\$300,000	\$75,000
Commerce City ATSPM System	\$47,400	\$11,850	\$142,200	\$35,550		
Denver FY21 Bluetooth Expansion					\$977,184	\$244,296
Denver FY22 Adaptive Signal Control & ATSPM			\$891,100			
Denver FY23 Pedestrian Detection	\$926,766	\$231,691				



Recommended Programming (cont'd)

	FY21		FY22		FY23	
	Federal Allocation	Non-Federal Match	Federal Allocation	Non-Federal Match	Federal Allocation	Non-Federal Match
Douglas County ATSPM System			\$292,000	\$73,000		
Erie Signal System Communications	\$173,000		\$720,000			
Jefferson County System Communications	\$433,907					
Lakewood Travel Time Message Board						
Littleton System Communications	\$404,266	\$101,067	\$185,334	\$46,334		
Lone Tree Adaptive Control			\$200,000	\$50,000		
Northglenn ATSPM System	\$960,000	\$240,000				
Parker Traffic Responsive Control	\$400,000	\$100,000				
RTD TSP Data Management	\$180,000		\$350,000			
RTD TSP Conditionality	\$327,000		\$123,000			
Thornton Travel Time Monitoring	\$100,326	\$25,082				
Westminster Controllers & Switches	\$445,855					
Westminster Traffic Cameras and Signal System Upgrade	\$283,176	\$70,794				



Next Steps

July 22: Presentation to RTO Working Group

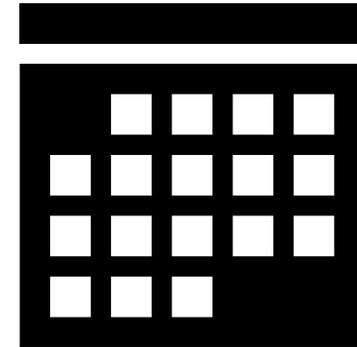
August 3: Presentation to AMP Working Group

August 24: DRCOG TAC

September 15: DRCOG RTC

September 16: DRCOG Board

Initiate FY21 project IGAs as soon as practical





THANK YOU

ATTACH F

ATTACHMENT F

To: Chair and Members of the Transportation Advisory Committee

From: Andy Taylor, Manager, Regional Planning
(303) 480-5636 or ataylor@drcoq.org

Meeting Date	Agenda Category	Agenda Item #
August 24, 2020	Informational Briefing	8

SUBJECT

2050 small-area household and employment forecast for the *2050 Metro Vision Regional Transportation Plan*

PROPOSED ACTION/RECOMMENDATIONS

N/A

ACTION BY OTHERS

N/A

SUMMARY

By forecasting the growth of households and jobs in areas much smaller than counties, DRCOG staff can forecast future travel patterns to support the regional transportation planning process. A new small-area forecast of households and jobs is now available for use with upcoming travel demand and air quality conformity modeling for the *2050 Metro Vision Regional Transportation Plan*.

DRCOG's small area forecasting process begins with the work of the State Demography Office in the Department of Local Affairs. Because their work ends at the county-level, the work of DRCOG begins with the forecast of internal distribution of those county-level 2050 forecasts, otherwise known as control totals.

Total forecast for the DRCOG region

	2010	2020	2030	2040	2050
Households	1,126,500	1,345,900	1,570,100	1,741,300	1,858,400
Jobs	1,677,900	2,160,400	2,440,700	2,701,900	2,964,500

Data sources: "Jobs Forecast," State Demography Office. Accessed July 2019.

"Household Forecast," State Demography Office. Obtained February 2020.

Data notes: Job forecast extended from 2040 to 2050 by DRCOG staff.

Weld County portion reflected as output of DRCOG small-area forecast.
2020 reflects a pre-COVID forecast of 2020.

DRCOG forecasts the distribution of household and employment growth across just over 2,800 small areas, known as transportation analysis zones (TAZ). That information then serves as one set of input assumptions for travel demand modeling efforts that forecast travel patterns between zones and on the transportation network.

To do this work, DRCOG staff relies on:

- A **predictive model**, known as UrbanSim, which uses nine discrete choice models that simulate household and employment location choices with real estate market dynamics and within natural and regulatory constraints. DRCOG's UrbanSim model underwent significant improvements over the course of 2019 in

preparation for *2050 Metro Vision Regional Transportation Plan* scenario planning earlier this year.

- **Extensive model inputs** gathered from the Census Bureau, the state, local governments, and other sources to establish base year and other observable conditions; estimate, calibrate and validate model parameters; and estimate capacity for household and job growth.
- **Feedback from local governments** on preliminary model results to improve model inputs – DRCOG staff received nearly 900 comments from 31 local jurisdictions over two comment periods (September 2019 and May 2020) associated with this update.

The resulting household and job forecast is available for viewing and downloading in a variety of formats on DRCOG’s Regional Data Catalog:

<https://data.drcog.org/dataset/small-area-household-and-employment-forecasts-2020>

Next steps related to the *2050 Metro Vision Regional Transportation Plan* include:

- Present this item at September meetings of the Regional Transportation Committee and DRCOG Board of Directors
- Use forecast assumptions in air quality conformity for the *2050 Metro Vision Regional Transportation Plan*

Steps beyond the *2050 Metro Vision Regional Transportation Plan* include:

- Additional analysis to inform a discussion of the “gap” between this forecast and the region’s aspirations in *Metro Vision*
- Informing additional DRCOG staff activities in 2021, which include revisiting the predictive discrete choice models in UrbanSim, exploring hybrid control total functionality that may allow DRCOG to use county control totals for household forecasts in the same simulation as regional control totals for employment forecasts, and collaboration with the State Demography Office on future region- and county-level forecasting

PREVIOUS DISCUSSIONS/ACTIONS

N/A

PROPOSED MOTION

N/A

ATTACHMENTS

1. Presentation slides
2. [Small-area household and employment forecast on Regional Data Catalog](#)

ADDITIONAL INFORMATION

If you need additional information, please contact Andy Taylor, Manager, Regional Planning at 303-480-5636 or ataylor@drcog.org.



Small-area forecast

Distribution of households and jobs for
the *2050 Metro Vision Regional
Transportation Plan*

Presented by:
Andy Taylor

August 24, 2020



Forecasting for the regional transportation planning process

Like different legs in a relay race



Statewide forecasts
(State Demography Office,
Colo. Department of Local Affairs)

- 2050 forecasts: population, households, jobs
- 64 counties



Small-area forecasting
(DRCOG)

- Forecast internal distribution of 2050 forecasts (aka *control totals*)
- 2,800+ small areas (aka *zones*)



Travel demand modeling
(DRCOG, other studies)

- Forecast travel patterns between zones, on transportation network



Feedback loops outside regional transportation planning process

Statewide forecasts

(State Demography Office,
Colo. Department of Local Affairs)

- 2050 forecasts: population, households, jobs
- 64 counties



Small-area forecasting (DRCOG)

- Forecast internal distribution of 2050 forecasts (aka *control totals*)
- 2,800+ small areas (aka *zones*)
- Piloting more formal feedback loop with State Demography Office in 2021



Travel demand modeling (DRCOG, other studies)

- Forecast travel patterns between zones, on transportation network

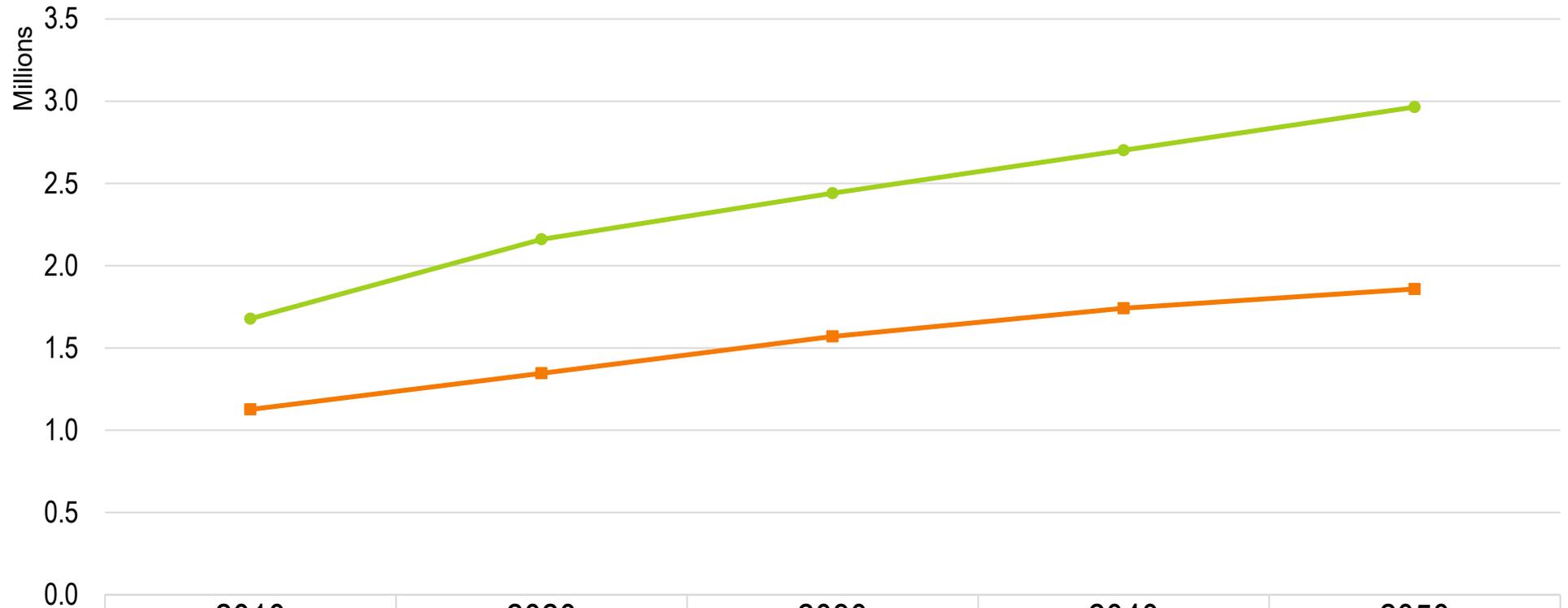


Metro Vision gap analysis (DRCOG, local government cohorts)

- Gap between this forecast and region's aspirations in *Metro Vision* (~Oct 2020)



Total forecast for the DRCOG region



	2010	2020	2030	2040	2050
Households	1,126,500	1,345,900	1,570,100	1,741,300	1,858,400
Jobs	1,677,900	2,160,400	2,440,700	2,701,900	2,964,500

Data sources: [“Jobs Forecast,” State Demography Office.](#) Accessed July 2019. “Household Forecast,” State Demography Office. Obtained February 2020.

Data notes: Job forecast extended from 2040 to 2050 by DRCOG staff. Weld County portion reflected as output of DRCOG small-area forecast.

2020 reflects a pre-COVID forecast of 2020.





Slowing growth: 2010-2030 vs. 2030-2050

Yesterday and today aren't tomorrow

	2010-2020	2020-2030	2030-2040	2040-2050
Household growth	219,400	224,200	171,200	117,000
Job growth	482,500	280,300	261,200	262,700



More perspective: past and future growth

Looking 30 years back and 30 years forward

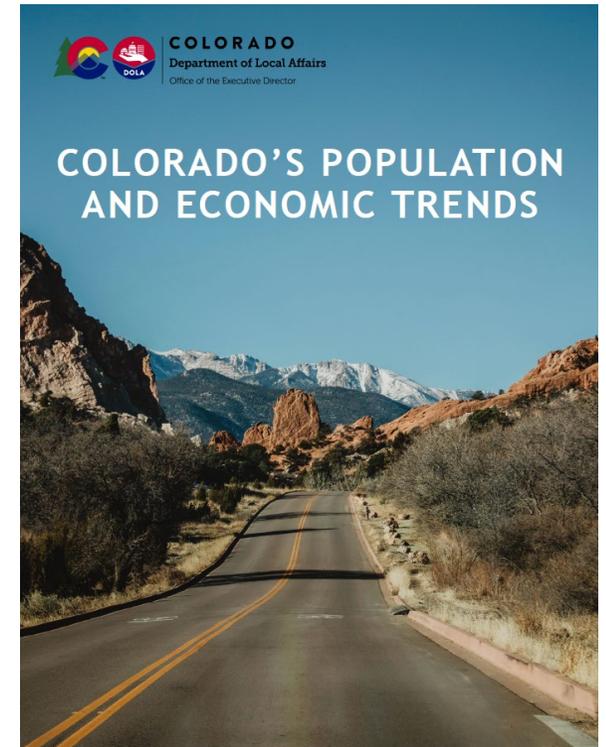
		1990-2020	2020-2050
Households	Change	593,800	512,500
	Pct. Change	79%	38%
Jobs	Change	1,021,100	804,100
	Pct. Change	90%	37%

Less absolute growth in the coming 30 years



Trends behind the forecast

- State's growth rate continuing to outpace nation's, though both declining
- Expected retirements 2025-2030 forecast to drive migration higher than 2020-2025 rate (labor force replacement vs. growth)
- Long run, 2030-2050, slowing due to:
 - Lower birth rates
 - Slowing job growth ← tight labor market
 - Slowing net migration ← domestic and international



[Full 12-page report from State Demography Office](#)



Getting to a 2050 small-area forecast distribution

2019: UrbanSim modeling improvements

≈ 300
comments
from 17
jurisdictions

- Updated **model codebase** in the **cloud**
- Tuning of capacity of **local zoning constraints** to better reflect local conditions
 - Past approach: 17 regional categories local zoning assigned to
 - Updated approach: 1,400+ local categories used to estimate
 - September – Initial results under new approach shared with local government via web map (to inform regional scenario baseline)
- Ability to **incorporate scheduled development** information
 - Observed housing and employment data through 2018
 - Develop committed projects dataset for 2018 and beyond



Getting to a 2050 small-area forecast distribution (continued)

Q1 2020: Deploy modeling improvements for scenarios

- Three household and employment forecasts using **regional control totals**
 - Baseline
 - Infill
 - Centers
- **Note:** “What if...?” scenario questions did not directly inform subsequent predictive small-area forecast run (next slide)



Getting to a 2050 small-area forecast distribution (continued)

Q2-3 2020: Small-area forecast development

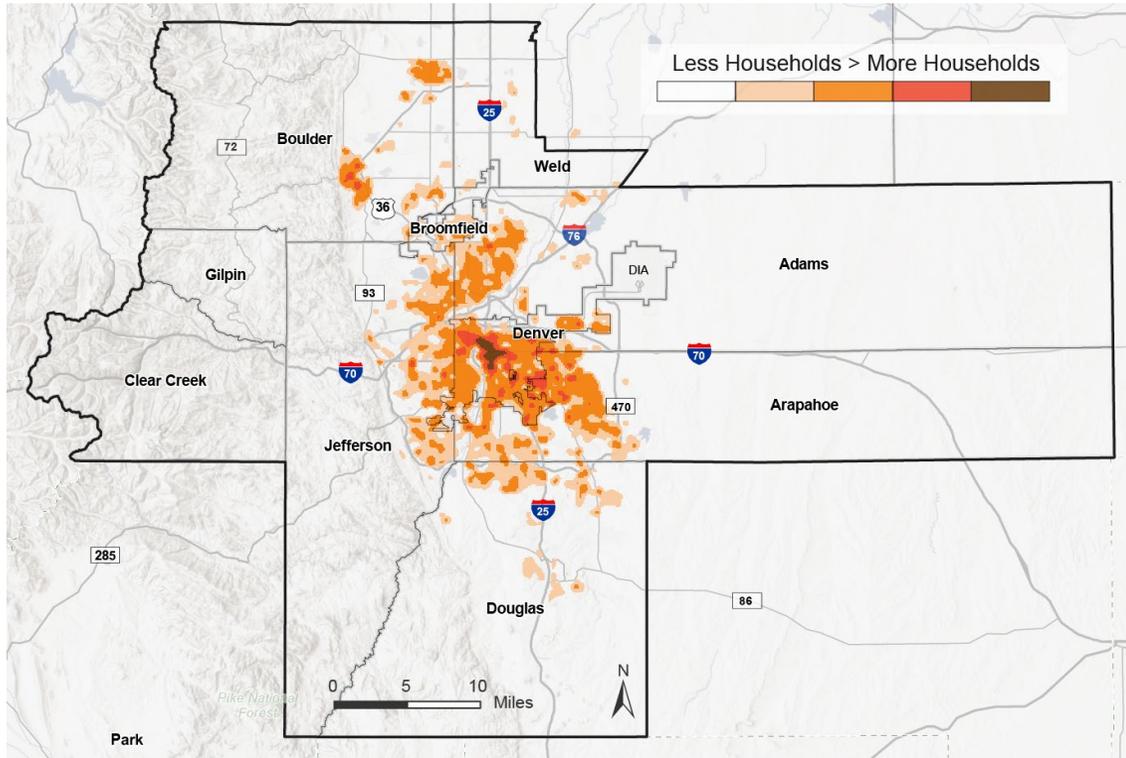
≈ 600
comments
from 29
jurisdictions
(and numerous
follow-ups)

- April – prep forecast using **county control totals**
- May – invite **local government feedback** via web map
- June – **review and integrate feedback**, focus on comments affecting 2020 (RTD system optimization scenarios)
- July – continue to **review and integrate feedback**
- August – **post forecast** to [Regional Data Catalog](#)
- Now and September – **Committee and Board** informational items on these household and employment assumptions for the *2050 Metro Vision Regional Transportation Plan*

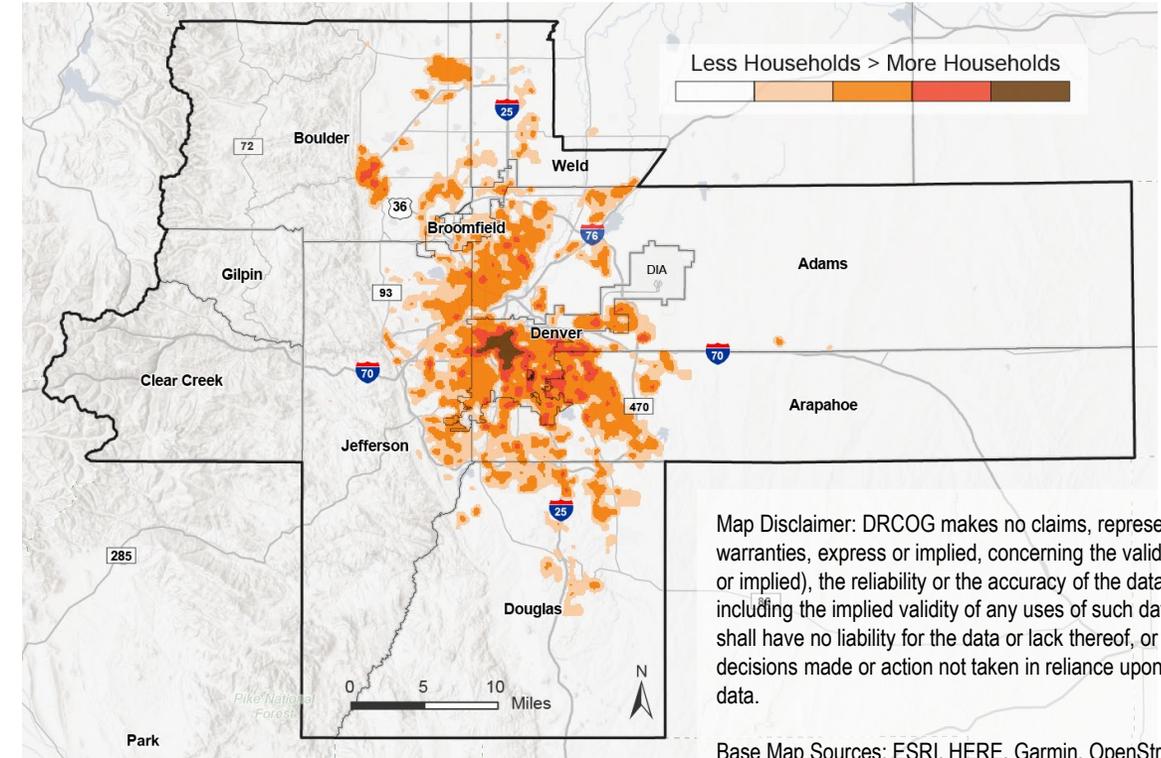


Forecast distribution of households (2020 and 2050)

Households 2020



Households 2050*



Map Disclaimer: DRCOG makes no claims, representations, or warranties, express or implied, concerning the validity (express or implied), the reliability or the accuracy of the data herein, including the implied validity of any uses of such data. DRCOG shall have no liability for the data or lack thereof, or any decisions made or action not taken in reliance upon any of the data.

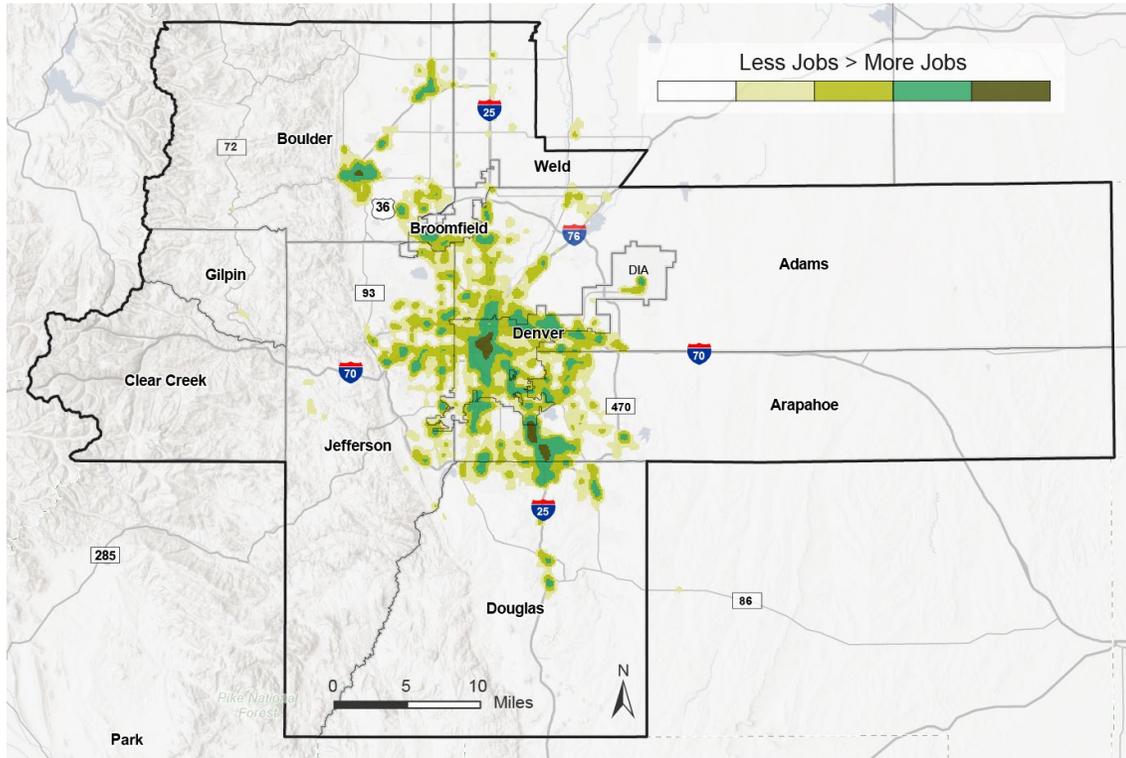
Base Map Sources: ESRI, HERE, Garmin, OpenStreetMap contributors, NOAA, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, FEMA, Geoland, Intermap, and the GIS user community.

* **Reminder:** Forecast small-area growth must remain within state-forecast county control totals

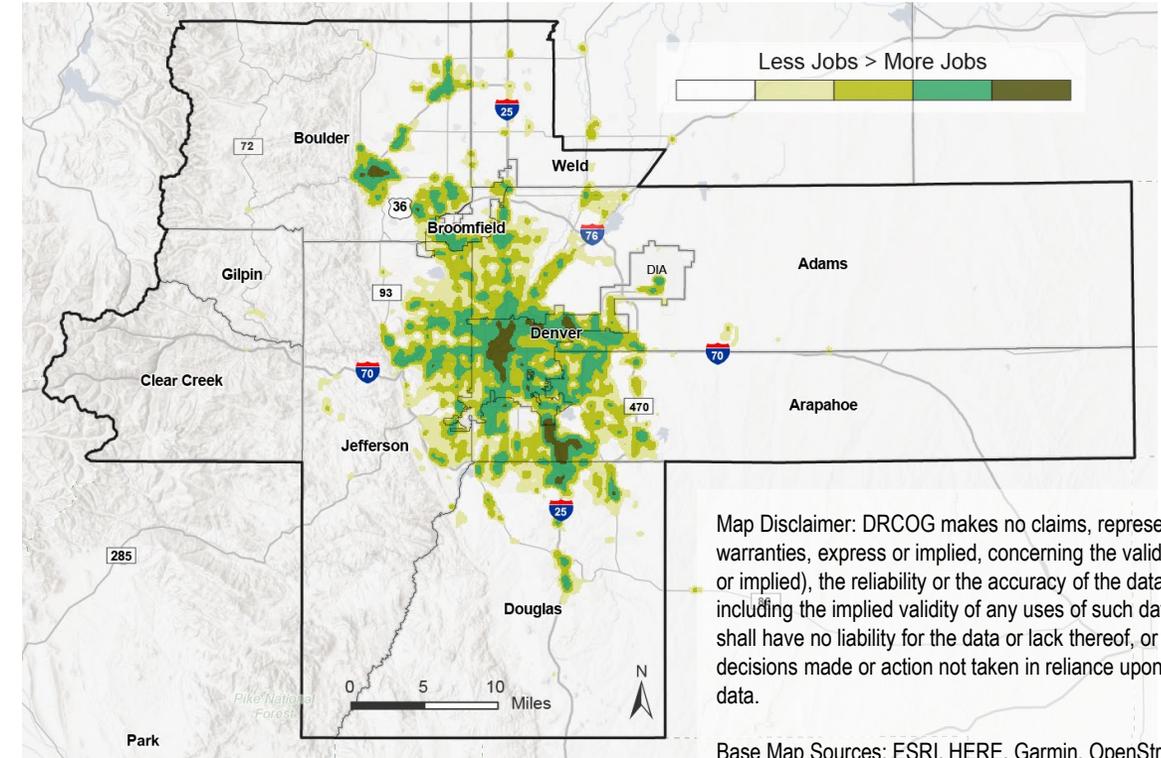


Forecast distribution of jobs (2020 and 2050)

Jobs 2020



Jobs 2050*



Map Disclaimer: DRCOG makes no claims, representations, or warranties, express or implied, concerning the validity (express or implied), the reliability or the accuracy of the data herein, including the implied validity of any uses of such data. DRCOG shall have no liability for the data or lack thereof, or any decisions made or action not taken in reliance upon any of the data.

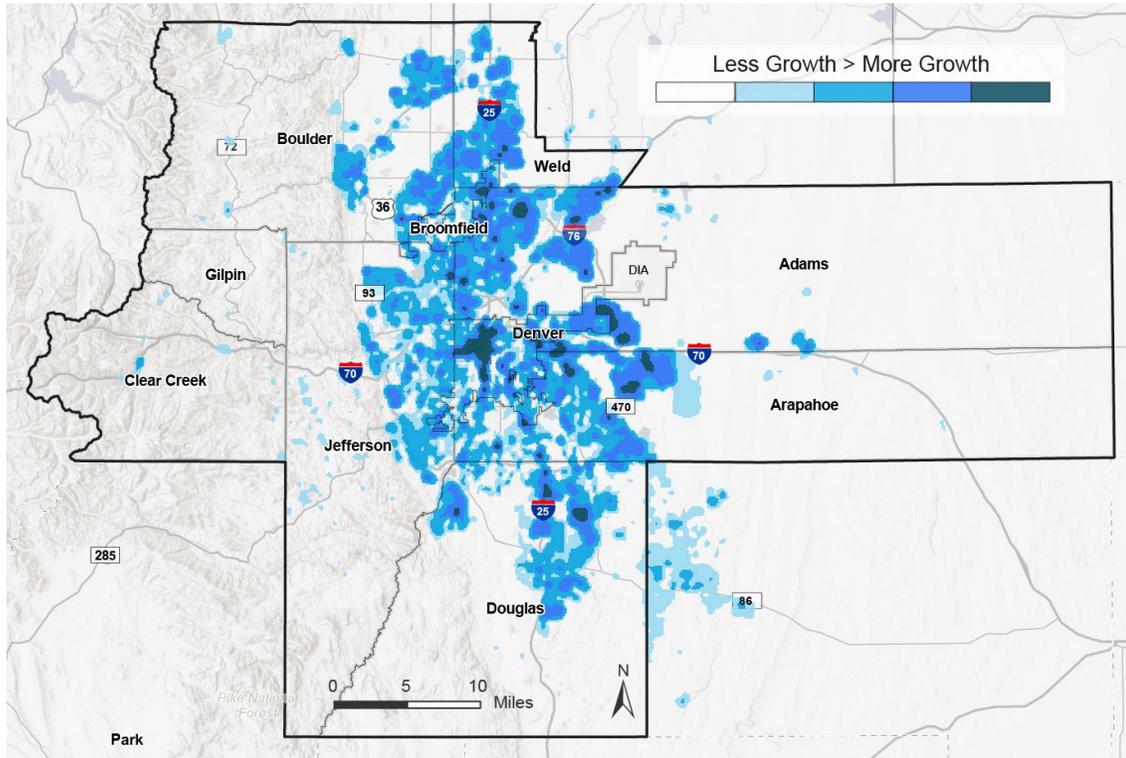
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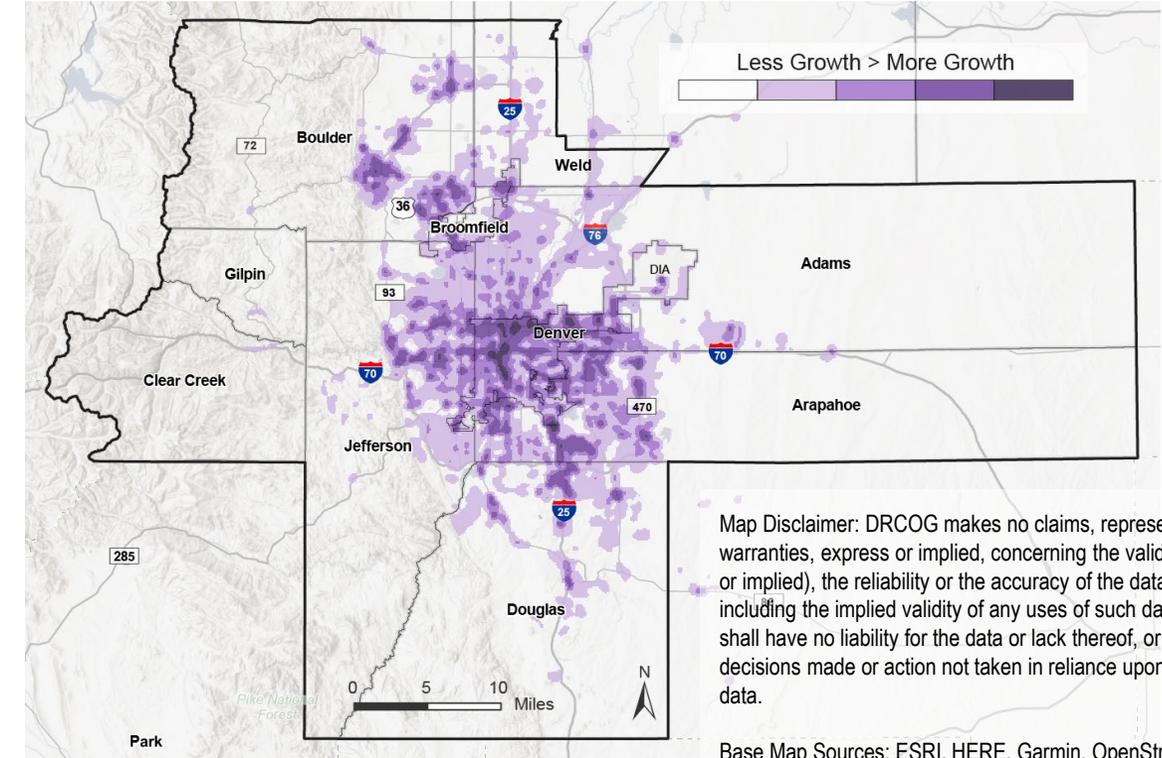


Forecast growth distribution – areas of growth

Areas of Household Growth, 2020-2050*



Areas of Job Growth, 2020-2050*



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* **Reminder:** Forecast small-area growth must remain within state-forecast county control totals



What's next?

- Regional Transportation Committee and Board informational item on these forecast assumptions for use in air quality conformity for the *2050 Metro Vision Regional Transportation Plan*
- Prepare additional analysis to inform discussion of the "gap" between this forecast and region's aspirations in *Metro Vision*
- Additional small-area forecast model staff activities in 2021 (non-RTP)
 - Revisit predictive models in UrbanSim
 - Explore hybrid control total functionality
 - Collaboration with State Demography Office



Small area forecast

Distribution of households and jobs for
the *2050 Metro Vision Regional
Transportation Plan*

Presented by:
Andy Taylor

August 24, 2020

ATTACH G

ATTACHMENT G

To: Chair and Members of the Transportation Advisory Committee

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

Lisa Houde, Public Engagement Specialist
303-480-5858 or lhode@drcog.org

Meeting Date	Agenda Category	Agenda Item #
August 24, 2020	Informational Briefing	9

SUBJECT

Summary of engagement activities for Phase Two of the 2050 Metro Vision Regional Transportation Plan (2050 MVRTP)

PROPOSED ACTION/RECOMMENDATIONS

Information only

ACTION BY OTHERS

N/A

SUMMARY

In addition to the technical work to develop the 2050 MVRTP discussed at recent TAC meetings, DRCOG staff have also been conducting public and stakeholder activities as part of the planning process. As a reminder, engagement activities for the 2050 MVRTP are guided by the draft public engagement strategy (schedule summary attached) which describes a variety of engagement techniques tailored to each major phase of the planning process. Phase One, corresponding to initial education and visioning, occurred last summer and fall. Those activities and outcomes are summarized in the [Phase One summary](#).

Phase Two activities, summarized in Attachment 1, occurred over the winter and spring in conjunction with the development, testing, and analysis of 2050 scenarios. Phase Two also spanned the first months of the COVID-19 pandemic, which required some adjustment to the types of engagement activities originally planned for this phase. Even so, as documented in the Phase Two summary, DRCOG staff were able to conduct a variety of activities and receive important input from the public and stakeholders.

At the August 24th TAC meeting, staff will provide an overview of Phase Two engagement activities and public input received for the 2050 MVRTP.

PREVIOUS DISCUSSIONS/ACTIONS

TAC – [March 25, 2019](#)
[June 24, 2019](#)
[September 23, 2019](#)
[October 28, 2019](#)
[December 9, 2019](#)
[January 27, 2020](#)
[March 23, 2020](#)
[April 27, 2020](#)
[May 18, 2020](#)
[June 8, 2020 Work Session](#)
[June 15, 2020 Work Session](#)

[June 22, 2020](#)

PROPOSED MOTION

N/A

ATTACHMENTS

1. 2050 MVRTP Phase Two Engagement Summary
2. 2050 MVRTP Public Engagement Strategy Schedule

ADDITIONAL INFORMATION

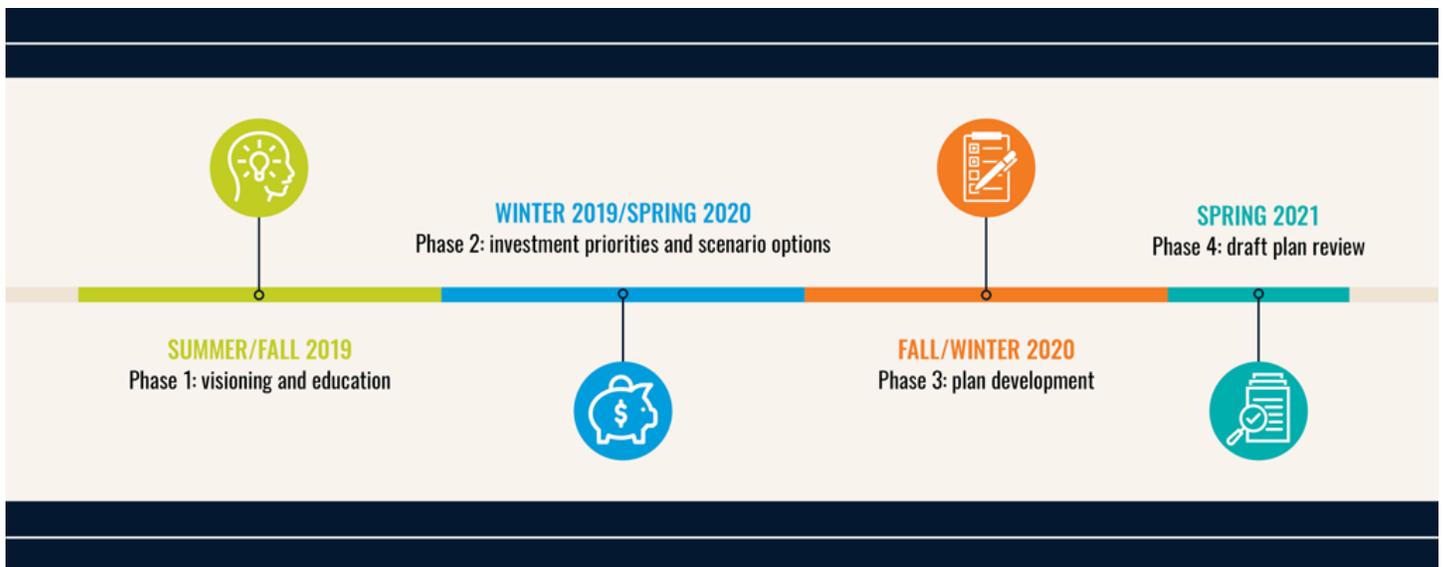
If you need additional information, please contact Jacob Riger, Manager, Long Range Transportation Planning, at 303-480-6751 or jriger@drcog.org or Lisa Houde, Public Engagement Specialist, at 303-480-5858 or lhoude@drcog.org.

PHASE TWO MVRTP PUBLIC ENGAGEMENT RESULTS INVESTMENT PRIORITIES AND SCENARIO OPTIONS NOVEMBER 2019 – JULY 2020

BACKGROUND

DRCOG is working on the [2050 Metro Vision Regional Transportation Plan](#), a document that guides the region’s future multimodal transportation system. The plan is our long-range vision for regional transportation through 2050 and anticipates the transportation infrastructure and services needs as our region grows. The plan is being developed over the course of a two-year process, with an emphasis on public and stakeholder involvement throughout.

This document summarizes the public input received during phase two of the plan process from November 2019 through July 2020, as scenario planning analysis was developed, scenarios were tested, and investment priorities began to be discussed.



HOW DID INPUT FROM PHASE ONE GUIDE PHASE TWO?

The [input received in phase one](#) guided the development of regional transportation and land use scenarios. In terms of scenario content, high interest in **transit**, **sidewalks**, **bike paths**, and **safety** in the phase one in-person outreach guided the development of scenarios that could test situations involving these topics.

In the phase one online survey, **traffic congestion or delays** and **lack of biking, walking, and transit options** were also cited as main challenges in the region, so these were also focuses of the scenarios. Many respondents during the phase one online survey and in-person engagement thought the region needed to invest in **transit**. Specifically, top funding priorities from the online survey included: **transit service expansion** and **increasing transit service frequency**, as well as **creating more sidewalks/bike paths** and **maintenance of the existing transportation system**. **Safety** and **travel choices** were rated as the most important factors for guiding transportation plans and policies. As a result, the final transportation scenarios included one specifically focused on transit service and another scenario specifically focused on travel choices, especially from the perspective of multimodal arterial safety. The scenario planning technical memo documents the development, analysis, and outcomes of the scenario analysis process for the 2050 MVRTP.

In the fall of 2019, staff also gathered input from DRCOG's standing committees, the Transportation Advisory Committee and the Regional Transportation Committee to help develop the scenarios. Additionally, input was collected from several county subregional transportation forums to help shape each scenario. In December, the DRCOG Board of Directors ultimately endorsed the scenarios that would be tested.

PUBLIC ENGAGEMENT SUMMARY

ADVISORY GROUP INPUT

In late 2019, two new advisory groups were formed to provide guidance and input throughout the 2050 MVRTP plan development process. The groups review the components of the plan as they are developed, help guide and develop public engagement activities, and provide comments and guidance to DRCOG staff, our committees, and our Board of Directors. These advisory groups were formed to facilitate engagement early in the process and throughout its development.

YOUTH ADVISORY PANEL

Due to limited input on the online survey from residents under 18, DRCOG wanted to ensure that younger voices were heard during the plan process and convened a Youth Advisory Panel. The group brings together representatives from DRCOG's member government youth boards and commissions throughout the region. Recruitment for the panel involved outreach to the 18 local youth boards and commissions in DRCOG's member governments to secure representatives from each commission.

During the [first meeting](#) of the Youth Advisory Panel in November, participants were introduced to the plan and participated in a survey similar to the phase one online survey and a priority-setting exercise. In the survey, panel members listed **traffic congestion**, **transportation costs**, and **transit service** as their most critical transportation challenges. **Transit** and the **amount of time spent in traffic** were considered most important to a successful transportation system. When asked what they would spend money on to fix regional transportation issues, **transit** received more support than any other option combined. The panel also highlighted the importance of **reducing impacts on the natural environment** regularly throughout their responses.

Youth Advisory Panel priorities to achieve their vision for transportation in 2050:

1. Mass transit & environment
2. Alternative transportation
3. Safety
4. Outward growth
5. Technology

The [second meeting](#) focused on scenario planning and initial scenario trends. The panel was divided into two groups and each group was given a bracket exercise with 16 different transportation measures. Panel members were asked to weigh the different measures, similar to a tournament bracket, and determined what the most important measures were to

assess the different scenarios. After both groups completed their brackets, the panel worked together to create a third bracket, debating the merits of the various measures to come to a consensus bracket.

The panel's four most important measures were: **more electric vehicles, fewer deaths on roads, fewer greenhouse gas emissions, and more people have access to transit and jobs.** Ultimately, the group decided that the most important measure was that more people have access to transit and jobs, and specifically that transit should be electric to meet the goals of fewer greenhouse gas emissions and more electric vehicles.



Youth Advisory Panel's most important transportation measures to assess scenarios

- Fewer deaths on roads
- More electric vehicles
- Fewer greenhouse gas emissions
- **More people have good access to *electric* transit & jobs**

The [third meeting](#) focused on the final scenario results, with the panel providing input on how they thought the scenario results should inform investment priorities. Members also provided feedback and helped to refine the budget tool that would be posted on the online engagement site.

The results of the budget game revealed that the scenarios that the group's highest priorities for investment were **Travel Choices, Transit, Infill, and Centers**. In a survey, they also identified **reducing vehicle miles traveled, increasing transit trips, and increasing walk/bike trips** as the most important transportation goals to achieve by 2050.

CIVIC ADVISORY GROUP

The Civic Advisory Group was convened to provide public input and guidance throughout the plan process from residents who represent the diversity of communities and experiences in the Denver region. The group provides perspectives from people who have not been typically involved in the transportation planning process. About half of the group members are associated with various community-based organizations and nonprofits around the region. Recruitment for the group involved outreach to many different organizations and individuals to identify community members or staff who would be interested in participating. The group consists of about 30 committed members and has met approximately bimonthly since December, with a longer break during this summer.

In the [first meeting](#) in December, members took the same survey that the Youth Advisory Panel had taken in their first meeting. Civic Advisory Group members identified **transit service** and **lack of biking/walking options** as their most critical transportation challenges. **Equity** was considered most important to a successful transportation system, as well as **safety** and **transit**. When asked what they would spend money on to solve transportation issues, **transit** received nearly three-quarters of the votes, vastly more than any of the other options.

Civic Advisory Group priorities to achieve their vision for transportation in 2050:

1. Overarching priorities
 - a. Equity and Environment
2. Tools
 - a. Transit
 - b. Alternative transportation
 - c. Technology
3. Other priority/tool
 - a. Housing location

At the second meeting focused on scenario planning, the Civic Advisory Group did the same bracket exercise as the Youth Advisory Panel to identify the most important transportation measures to use to assess scenarios. The group's final four most important measures were: **more low income people have good access to transit & jobs, more walking/rolling trips, fewer greenhouse gas emissions, and more people have access to transit and jobs.**



Ultimately, the group decided that the most important measure was that more people have access to transit and jobs.

Most important transportation measures to analyze scenarios

- More low income people have good access to transit & jobs
- More walking/rolling trips
- Fewer greenhouse gas emissions
- **More people have good access to transit & jobs**

The third meeting focused on the results of the scenarios, and group members provided their feedback on transportation budget priorities as well as the plan for greater public engagement through the online engagement site. In the budget game, group members felt that the scenarios that were highest priorities for investment were **Travel Choices, Infill, Centers, and Centers + Transit.**

KEY GUIDANCE FROM ADVISORY GROUPS

These advisory groups play an important role in the process of developing the 2050 MVRTP. There has been a repeated emphasis from both groups about the high importance of investment in transit, as well as travel choices such as walking and biking. Equitable access to transportation and reducing greenhouse gas emissions have also been consistently identified as top priorities for both groups.

ONLINE ENGAGEMENT SITE

PURPOSE

The goal of the new online engagement site, which included a budget game and survey, was to draw out from the public their reactions to the scenario results and learn how members of the community believe those scenario results should inform investment priorities in the plan.

ENGAGEMENT SITE

We developed a project site on our online engagement platform [available at this link](#). The site provides introductory information about the plan and the purpose and process of scenario planning. Videos featured on the site were recorded in both Spanish and English to describe the results of the various scenarios. Additional charts and a handout summarizing the results were also made available on the site. The site included a budget game for the public to complete as well as a short survey.

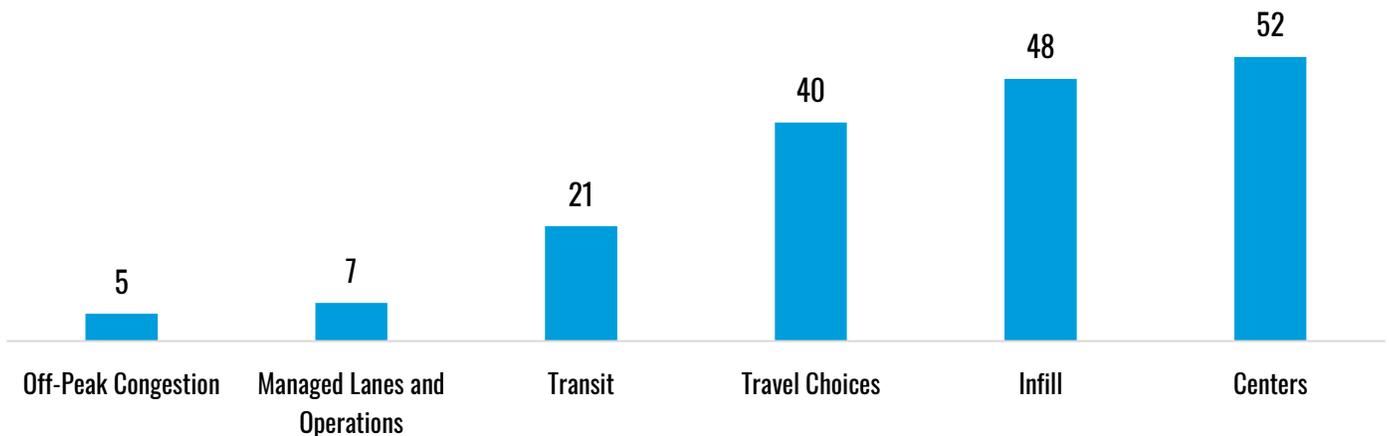
PROMOTION

The opportunity for input on the site was sent out in numerous eblasts and promoted on social media through both organic and paid posts. The eblasts were each sent to about 1,700 respondents on existing DRCOG mailing lists. In total, the social media posts had over 115,000 impressions (the majority of these through the paid ads) with nearly 2,000 link clicks through to the online engagement site. One of the paid Twitter posts was in Spanish and received a significantly higher engagement rate than the other posts. In total, the online engagement site received over 3,000 visits from over 1,000 unique users; of these, 70 people completed the budget game and 74 filled out the follow-up survey.

BUDGET RESULTS

In the budget game, community members were asked to choose which kind of transportation future (which scenario) they would fund with a \$100 budget. The two land use scenarios, **infill** and **centers** received the most votes from the 70 participants in the budget game. Of the transportation-focused scenarios, **travel choices** was by far the most popular, receiving almost double the votes of the next highest transportation scenario, **transit**.

Budget game results



For reference, below is a screenshot of how the budget tool appeared to participants:



Welcome to our online engagement page!

Your transportation investment budget



REMAINING

\$100.00

SPENT

\$0.00

Agree to terms and conditions

Submit Budget

Centers

Focus on: Local governments focus opportunity for development around key centers and corridors.

Scenario Results:

- **Over twice** as many walk & bike trips
- **8% decrease** in vehicle miles traveled
- **Over 3 times as many transit trips**
- **Average Person Delay per Trip decreases by 27%. Some localized areas experience more congestion.**

\$10.00

Fund

Infill

Focus on: Local governments allow for more urban and suburban redevelopment and infill.

Scenario Results:

- People in vehicles experience **11% less delay** on average
- **6% decrease** in vehicle miles traveled
- **Almost twice as many transit trips**
- **50% increase in walk and bike trips**

\$10.00

Fund

Managed Lanes and Operations

Focus on: Improving operations & traffic flow on region's highways/freeways.

Scenario Results:

- People in vehicles experience **25% less delay** on average
- **Fewer secondary crashes** and **improved safety** due to enhanced incident management
- **Travel reliability increases significantly** on the region's freeways
- **3% increase in vehicle miles traveled** (~800,000 more daily miles)

\$90.00

Fund

Transit

Focus on: Improving/expanding the region's transit network and service.

Scenario Results:

- **79% of households** have good transit access to jobs
- **76% more transit trips**
- **Small decrease** in walk and bike trips
- **100,000 more households use transit**
- **2% decrease** in vehicle miles traveled

\$90.00

Fund

Travel Choices

Focus on: Increasing travel & mobility choices along region's major roads.

Scenario Results:

- **400,000 fewer** drive-alone work trips every day
- **More than twice as many teleworkers**
- **50% increase** in bicycle/pedestrian trips
- **Slight decrease** in transit trips

\$40.00

Fund

Off-Peak Congestion

Focus on: Build out the freeway/interstate system to address congestion at non-peak times.

Scenario Results:

- **Less than 1%** change in vehicle miles traveled and transit trips
- While there are few changes at the regional level, **some specific corridors have significant impacts**
- **Some traffic is diverted** from larger roads onto I-70 and I-25

\$50.00

Fund

SURVEY RESULTS

We received 74 responses to the short survey that participants were asked to complete after reviewing the scenario results and submitting their responses to the budget game.

The first question asked respondents to identify the most important transportation goals for the Denver region to achieve by 2050. Highest ranked were **reducing vehicle miles traveled** and **increasing walk/bike trips**. The full ranked results, averaged from all responses, from most important to least important, were:

1. Reduce vehicle miles traveled
2. Increase walk/bike trips
3. Increase transit trips
4. Fewer people drive to work alone
5. Reduce traffic delay time

The survey also asked respondents to identify other transportation goals that are important to them that were not included in the above list. Many responses focused on **climate**-related goals, such as improving air quality or reducing

pollution, reducing greenhouse gases. Many of the other comments were related to **transit, walking, biking, safety, and telework**. (See the full list of responses in the appendix.)

Next, we asked respondents how they think the investment priorities in the plan should be guided by the scenario results. We received a wide range of responses (see all responses in the appendix), but several focused on investing in solutions that provide the most **return on investment** and using the scenario results and public input to **inform decisions about priorities**.

The final question was more open and simply asked if the respondent had any additional comments about the investment priorities or scenario planning results. Common topics were **telework, climate issues, education, and engagement**, and full responses are available in the appendix.

STAKEHOLDER ENGAGEMENT SUMMARY

In addition to the general public, stakeholders such as DRCOG member government transportation staff, elected officials, and various transportation groups have also provided input and guidance throughout phase two of the plan development.

COUNTY TRANSPORTATION FORUMS

Several of the county transportation forums were briefed and provided feedback on the draft scenario concepts in late 2019. In March, prior to the draft results of the scenarios being available, the scenarios were also discussed at additional forum meetings. Forums were also updated on the plan status in May and June. Stakeholder feedback, from the forums and otherwise, has been incorporated throughout the 2050 MVRTP planning process.

A few forum meetings were cancelled or postponed during the stay-at-home order, primarily in March and April. It was during this time that DRCOG staff was providing periodic planning process updates and starting to roll out the scenario analysis results. This information was presented to the region through several Transportation Advisory Committee, Regional Transportation Committee, and Board of Directors meetings from March to May 2020. Beginning in summer 2020, the forums are playing a lead role in developing candidate major project priorities for developing the 2050 Fiscally Constrained RTP.

REGIONAL PARTNER PRESENTATIONS

During phase two, additional presentations were made to other groups at their request such as the Littleton Transportation and Mobility Board, Leadership Douglas County Forum, Downtown (Denver) Democratic Forum, Smart Commute Metro North Board, and at a Statewide MPO meeting.

KEY TAKEAWAYS

Several themes emerged from the engagement work completed in phase two:

CONNECTION BETWEEN LAND USE AND TRANSPORTATION

DRCOG should continue to study the connection between land use and transportation, as there was strong public support for the land use scenarios included in the budget game. The land use changes in the scenarios led to significant transportation impacts. While these land use changes are local decisions that are not necessarily something that can be incorporated into the 2050 MVRTP, the scenario results and public support should be integrated into further work at DRCOG and conversations with member governments.

INVESTMENT PRIORITIES AND PROJECT SELECTION

The input received during phase two showed significant public support for projects that emphasize transit and walking/biking trips. These both consistently rank highly on most respondent priorities. In addition, supporting projects

that reduce vehicle miles traveled and greenhouse gas emissions were top public priorities. These priorities should be integrated into the project selection process.

Throughout phase one there was minimal public support for funding new roads, and as shown above, phase two of engagement showed very limited support for either the managed lanes or off-peak congestion scenarios. Although the public who have participated in our engagement efforts consistently note that traffic congestion is an issue in the region, reducing travel time and congestion rank low on their investment priorities. As noted above, there was significantly more public support for reducing travel delay through land use strategies than through the managed lanes or off-peak congestion scenarios. These takeaways should be included in project selection process for the 2050 MVRTP.

NEXT STEPS

POLICY FRAMEWORK AND DESIRED OUTCOMES

As the 2050 MVRTP transitions to the next steps of identifying and evaluating major project and other investment priorities, DRCOG staff developed the “Policy Framework and Desired Outcomes.” This framework is comprised of the various major plans, priorities and studies identified by DRCOG, CDOT, RTD, and local governments. Together, this framework represents the region’s major multimodal transportation vision, needs, and priorities as described through previously adopted documents. This framework informed the development of the 2050 transportation and land use scenarios and will inform the identification of regional investment priorities to develop the 2050 MVRTP as well as the additional public input that has been received during the 2050 MVRTP process. All of these elements of the 2050 MVRTP development process are new to the 2050 MVRTP and connect directly to the public and stakeholder engagement and results from the first two phases.

MAJOR PROJECT SOLICITATION AND EVALUATION

One of the biggest ways in which the engagement and its results from the first two phases is informing next steps is the 2050 MVRTP major project solicitation and evaluation process approved by the DRCOG Board at its July 2020 meeting. While there are multiple components to this process, the three most important that directly integrate the first two phases of engagement work are:

- DRCOG is currently soliciting candidate project priorities through the county transportation forums. DRCOG staff is specifically encouraging the forums to identify major safety, transit, bicycle/pedestrian, multimodal, and other projects that go beyond minimum federal requirements of what must be portrayed in the MVRTP to better communicate the region’s priorities around these modes and strategies. This draws directly from the public emphasis on transit, walking/biking, and safety throughout engagement efforts.
- When evaluating candidate projects in upcoming months, DRCOG staff will be using the Metro Vision Plan’s primary objectives, which are part of the strategic planning framework of Metro Vision, to address the multimodal transportation policy priorities reflected in the recent public input.
- Finally, when developing the draft 2050 MVRTP document this fall, DRCOG staff will incorporate the key takeaways learned through these public engagement efforts in the narrative, project types, financial plan, and other components of the document.

APPENDIX

The following lists all survey responses received through the online engagement site.

ARE THERE OTHER TRANSPORTATION GOALS THAT ARE IMPORTANT TO YOU THAT THAT WERE NOT INCLUDED IN THE ABOVE LIST?

- Increase tree cover and shade
- Electrification of car/transit
- Build more lanes on the freeways and new roadways
- Make work from home mandatory for all office jobs, or have businesses pay a 15% tax towards transit if they choose not to comply
- Equitable access to transit
- Ensure that lower-income individuals and families have equal access to transportation
- Air quality
- 1)Explicitly promote more telework. 2) Improve land use mix so more options are available by walking and biking
- Quality of life should be a consideration in all of the scenarios. That means we are going to have to find a balance in all of the choices that are made.
- Increase accessibility
- Yes: All of these are important, but it's older thinking. The focus on automated vehicles I believe has the best opportunity to: 1) Increase safety, and 2) Decrease congestion. Encouraging the advancement in this area is critical in my opinion.
- Re-framing people's perspective on how, why, and when they travel
- Increasing the frequency of transit trips on high density corridors. Focusing on walkable/bike friendly neighborhood centers and infill development. More diverse activity options in one place = less reason to drive a car
- Reduce greenhouse gas emissions to prevent climate change; promote equity
- Improving ability to work from home
- Increase routes available by bus and light rail, more suburban options, rework public transportation to include use for "running around town" and not just access to the workplace.
- vision zero
- Align land use better with transportation
- Teleworking will be increasingly likely in a COVID world, and I would be curious to learn how DRCOG can influence its popularity.
- Increase emphasis on mobility on demand
- require bedroom & regional area developments to have roads that go through them, so no so much traffic end up on interstates and through roadways, Include bike & walk paths that are linked with these that are good for more than recreation.
- Agencies like RTD follow through with projects like a train to Boulder.
- Lower the time needed to make a trip on public transit
- address climate change. save lives via fewer auto accidents.
- Transportation is closely tied to housing, so building more affordable housing close to where people work, shop, learn, and recreate is critical.
- Let the price of driving reflect its actual cost.

- Vision Zero
- Increase access and affordability
- MONEY. Transit takes a huge percentage of the regional dollars, but provides only a small portion of the regions mobility.
- Pollution reduction and economic development
- Increase and promote more telework options with organizations in the region.
- Trails, Trains, Subways, and electrification
- Better connectivity with bicycle trails segregated from idiots in cars.
- Decrease carbon emissions
- access to options for people of all ages, incomes abilities
- Reduced emissions
- end traffic give us streets without any vehicles again
- Reduce traffic fatalities and reduce air pollution
- Light rail is significantly better than busses
- Lowering emissions/ air pollution
- Increasing access to public transportation
- Safer roads
- It would likely come as a result of several of the goals, or a combination of them, but reducing greenhouse gas emissions has to be a priority.
- No, I think it's efficient.
- Reducing amount of Greenhouse Gasses

HOW DO YOU THINK THE SCENARIO RESULTS SHOULD GUIDE POTENTIAL INVESTMENT PRIORITIES IN THE 2050 MVRTP?

- I think that MVRTP should find the things that the people want investment in, and base their decisions off of that.
- The scenario results should be used, based on the best data available, to determine the most beneficial scenario. Investments should then be made in the most sensible, most beneficial scenarios, no matter how long they would take, how expensive they would be, or how unconventional they may be.
- I think that based off of the scenario outcomes we should prioritize public transit and improving the environment.
- I think that they should be a guiding factor, but not the main one. Scenarios can change drastically with unforeseen technological advancements, which is especially possible in the next few decades with transportation.
- I'm not sure I understand this question but I am begging the planners to reconsider wall-to-wall hardscape on every road. On vacation, I biked in the shade of trees to a museum . . . but a road like that would never be built here.
- We need more transit funded that is efficient and makes sense for Denver and the region
- Focus on fewer trips - with COVID-19 response we've seen the positive results of fewer trips on our infrastructure and environment
- ?
- I think that we need to look at other metropolitan areas in and outside the USA that are having success in solving transportation challenges. Hopefully, it will not become an either /or proposition in terms of money spent.
- I think the scenario results should be rooted in equity and accessibility.
- Investment Priorities should reflect the results seen in the scenarios by funding those projects that reduce traveling alone trips and increase transit use.

- Investment in any area is about trying to maximize "value", or return on the investment. This involves seeing the future and striving to make it happen. Financial investment should be prioritized in those areas that have the most potential.
- Providing more mobility choices and changing the public's mindset on why it is critical to make better choices needs more funding than suggested. Adding lanes and reliability is a short term solution that is too expensive for the long term benefit.
- Decision-makers should consider what goals we want to accomplish, and advocate for policies that support those goals.
- Capitalize on improving existing system, such as roadways, but also leverage funds with the billions of dollars the private sector is putting into transportation over the next decade(s). We should not be fighting the autonomous car movement but instead work in conjunction with them to develop a state of the art of transportation for the region. Let cities improve sidewalks and bike trails for the shorter local trips.
- I'm not sure, however, I think that other countries can offer insight in how to use public transit to decrease cars on the road.
- You can not build highways and expect to improve traffic. There are more effective ways per the scenarios to invest in.
- Travel Choices is the best option, it saves the wear and tear on the roads which means higher maintenance costs
- Use to reflect priorities along with other methods to determine public priorities
- In order for any of these goals to manifest, more money MUST be spent on building out sidewalks
- MVRTP should focus on outcomes and propose how the region can meet those outcomes. You have the right approach.
- We really need to not only focus on getting transport & congestion down because sitting in traffic causes more pollution than traffic that moves. If we didn't dump all exterior/regional neighborhood traffic on to our already existing roadways, there would be less congestions. This would also help because these areas could have their own regional marketplaces, leaving mass transit for those who can commute & the roadways for those who are unable because of access or (kids/families), or supplies they are carrying (trades, jobs that require pickuing & delivering goods). Kids sports grounds & schools should also be available along transit routes. Walking routes should get a higher level of importance Period! Bikes have routes, even though their can always be more. I don't agree with busy roadways & bikes, one when on a bike sucking fumes isn't ideal, and too doesn't feel safe. Also, bike ridership is great don't get me wrong but the older & disabled community are not included, as well as parents or anyone who doesn't have a simple sling bag they transport back & forth to work. Thus it suits regional people who live close by with desk jobs, and are under 45/50, and not a diverse enough group of people. Walking paths includes everyone. Sideways need to be wider, commerical development not to encouraged to the front propertyline (setbacks) or some sort of barrier strip between roads and pathways so feels safe and also less stressful. Also, if you walk you have been "splatted" with mud/slush/water when walking along side a busy roadway, or standing ready to cross the street. Not to mention the fumes are not fun on busy roadways. Also, why has ridership seemed to go down on public transport? Uber? Shared rides? This only causes more congestion. I have a job where I have to travel outside of the city to a spot with no transit options, and I have noticed sometime have the traffic around me is a rideshare care. Taxi's didn't circle until they picked up rides like the rideshare companies apps promote. Some better solution must exist. I know many younger friends never learned to use public transit like buses and some will maybe use light rail, they would rather uber. There has to be a solution to help encourage the benefits of not doing rideshares over public transit. Educational or a financial incentive. More than any of this, Denver sits in the middle of cross state and regional travel, outer ring roadways and major throughways need encouraged. I'm in awe traveling out on 1-70 east, and 1-76 east how far out these bedroom communities go, not to mention the over crowded I-25 north and south. Some of this is lack of state transportation planning, actually a lot of it is. However, affordable housing for families needs to be addressed or we will never be able to offer people who live far outside city walking & biking and mass transit options.

- I find it hilarious that all of you know what the future will be like in 30 years. If people can't project global warming and the Wuhan Virus accurately, what makes you think you can do the same for transportation? It'd be like it is 1990 and you say 30 years later this is what transportation will look like. You don't know what the future holds. Nobody in 1990 knew 30 years later that Denver would be a hot spot.
- If you want people to take public transit, it needs to be comparable to just driving somewhere. If it takes twice as long to get somewhere on public transit, or if you have to wait 30+ minutes between buses/cars, people will just take their car instead (if they have the option).
- These scenarios are absolute garbage. You call adding lanes "managed lanes"? This seems willfully misleading. Manage lanes by pricing them--voila, you've solved traffic. Congestion pricing is the only way to do this.
- An alternate projection for travel by mode should be made using a straight line projection of historical data. Previous DRCOG projections, particularly for transit have missed the mark significantly and a straight line projection would have produced more reliable results.
- Strengthen collaboration among partner stakeholders.
- Not very much. The transit advocates will stack your forum. Proposals should be evaluated on costs per vmt and costs per passenger mile travel. Increase regional mobility at the least cost!!!
- Recognize that outlying suburbs have very different needs than dense urban core. No one size fits all for RTP.
- As seen during the Stay at Home order, and Safer at Home phase, when people are afforded the opportunity to telework it greatly reduces the number of vehicles on the road.
- Ditch buses.
- Better connectivity with walking, biking and transit can only be a good thing.
- Invest in bike and pedestrian infrastructure. Support transit systems.
- Use the money where it can impact the most individuals in either household or direct quantity.
- Funding decisions should be based on the public's input on priorities
- I think we should focus on getting the most bang for our buck. Infill plus travel choices is almost as effective on all levels as centers plus transit, only losing outright on one metric, but costs less than half as much. This region is full of tax-hating libertarians, and we need to be keenly aware of what they'll want to fund.
- living more simply
- Based on the scenario results, I think there should be a heavy focus on collaboration between local governments, RTD, DRCOG, developers, and community members to build out transit and centers, since those have the greatest impacts on traffic congestion and air pollution.
- They can be a tool, however the choices are prescribed. Actual community involvement at every step.
- Because people often aren't willing to sacrifice efficiency, it is important to make fast modes of transportation (public transit) more widely available, as opposed to putting walking/biking travel first.
- I think the scenario results heavily should guide potential investment priorities in the 2050 MVRTP.

DO YOU HAVE ANY ADDITIONAL COMMENTS ABOUT THE INVESTMENT PRIORITIES OR SCENARIO PLANNING RESULTS?

- Being a person who tries to use cheap, healthy, clean transportation modes, it's hard not to be disappointed by the way the budget is spent. Huge highways, massive feeder roads, dirty air, feeling like you are going to be run over on a bike or on foot. Barely any pedestrian safety or bike infrastructure. Please consider the issues of clean air and road deaths and give us roads that are not hostile to walking and biking.
- Transit doesn't work for everyone - I don't want to spend my day transferring to different lines for hours just to get to work.
- Attention needs to be given to the transportation need of essential workers

- If the Center/ density scenario is selected, take steps to make sure that new housing is actually affordable and desirable for those who work nearby.
- My runner up scenario was the travel options.
- For Denver to solve its transportation crisis we are going to need major investment from the Federal government. Investing in transportation infrastructure could go a long way in getting the economy back on track (pun intended).
- I would hope that you can focus less on regressive tax initiatives (e.g. charging more so people are less incentivized to drive) and focusing on how equity can weave it's way through all of the work.
- I recently spent two weeks in Los Angeles and never used a my vehicle. I found their bus transit to be convenient, well run with ontime service 90% of the time, and appropriately priced to serve the vast majority of the residents. Denver metro should study and duplicate this system as much as possible by learning from the LA's infrastructure and use their example to accelerate our implementation of public transit.
- Real educational dialog and community engagement needs to be spread from the DRCOG level to the local and grass roots community level. Engaging on the street and in neighborhoods across the region needs to be paramount. This problem is not resolved in the board room or council chamber, but it needs to be supported there too.
- It seems like the scenarios might be complementary. In the purchase exercise, I had money left over, but not enough to buy the transit or managed lanes options. I'd recommend a combined and incremental approach: centers and infill (to give metro residents the greatest choices in housing) with bike/walk travel choices, and SOME managed lanes that also support SOME BRT corridors.
- Make sure the scenarios are capturing the actual land use trends that are occurring (longer commutes to find affordable housing) and not trying to dictate land use decisions to the cities. These are local decisions not DRCOGs so it should not be focusing on funding land use decisions that DRCOG supports but not the city
- I am interested in how DRCOG plan to disseminate information to the public to educate them about the issues?
- Make a regional infrastructure for commuters to use to ride to and from work a priority.
- Maybe tweak funding to allow what model would not allow i.e. 90 10 10 priorities ...maybe 85 7.5 7.5 or 80 10 10 as I believe infill should definitely be a priority
- Although I advocate transit use, I hesitated to select budget the Transit scenario, because the region should not spread thin its transit services. Instead, the region should invest future development around existing transit centers and increase service around those centers, not in sprawling subdivisions.
- "Please stop and think bigger than you have thus far, I know you are all well educated and intentioned. Think about underserved populations and transportation needs of all workers, not just desk workers. Maybe a benefit of covid could be to encourage more :telecommuting, less regional youth/adult club sports & educational travel outside neighborhoods, more diverse working hours. We have areas in town that are ""mass transit deserts""....yet DESERTS! just like ""Food Deserts"" where good and services just don't exist without traveling. Only you can't get out or in without a car/truck.
- Good luck & it will never be perfect, but think bigger than just what trendy & special interest groups are promoting. Thank you for your work."
- All of you only think long term just like global warming people projecting doom 100 years from now. This is not difficult. For example, the highest growth will come from east Aurora as they have the most room due to open prairie. Hence, roads and rail must be built up now or at the very least land purchased and held until needed. Look at Salt Lake City. They are smart. Denver is dumb.
- It wasn't explicit in any of the scenarios, but we need an almost 100% divestment from fossil fuel utilization in our day to day if we hope to live to 2050. Things need to happen faster to have any impact on our future.
- These seem very disingenuous. It is very difficult to understand how these scenarios played out and what assumptions went into them. How are we supposed to know what bogus speculations some traffic engineer

made about demands and needs? I am a professional planner and this is not good public outreach--except to check a box of course.

- None of the recent meetings or questionnaires have discussed the fact that travel demand by various modes may be significantly changed by the current Covid-19 social-induced changes. There will always be uncertainty in projections but to omit this subject from discussions does not seem prudent. The short-term Envision RTD planning effort continues to proceed as if everything will return to normal in June or July, whereas most people who have experience in making projections agree with RTD's planning assumption. DRCOG staff appears to be of the same mind-set as RTD staff and not changing the 2050 projections.
- "YES.
- TAKE GOOD CARE OF OUR EXISTING INFRASTRUCTURE! Some of DRCOG's funding is still allocated on a worst-first prioritization. Stop that practice! Manage our assets for the best rate of return on the dollars we spend. It isn't rocket science. You aren't being regional leaders when you allow poor management to continue to exist."
- There needs to be a focus on intraurban transit improvements to complement existing regional service
- Seemed like focus was highways or transit/bike. Where is the focus on Arterial/Collector network. Address localized congestion/capacity outside of freeway projects.
- Shift some of your funds to studying the productivity of a remote workforce, and potential partnerships with internet providers to further strengthen these opportunities.
- Buses are too slow, too infrequent, and generally suck. We need subways and light rail trains for the kind of fast, frequent service that people would use to commute.
- There needs to be funding to make people feel safe on the bike trails. The residentially challenged individuals under the bridges and camped along scenic routes scares some away. This should not happen.
- For example, prioritize building a bridge that allows for train/rail use plus dedicated bus transit lanes with private vehicle traffic over building a bridge for private vehicles only.
- More teleworking and e-bike subsidies!
- everyone must live simply with what is needed not what is exorbitant and wasteful like use of plastics and sending things around the world instead of buying and making things locally
- I believe it is important to consider the impact that reducing traffic could have on increasing the vehicle miles traveled and greenhouse gas emissions. As traffic decreases, the distance people will be willing to travel increase, therefore increasing the emissions of greenhouse gases and vehicle miles traveled.
- I think you guys are doing a great job, and I hope that in 30 years, kids will have more opportunities to get around and do things that I have had.
- It is my opinion that the scenario which best meets the goals of the planning and the needs of Colorado's citizens should be implemented, no matter the cost (within reason).

2050 MVRTP Public Engagement Strategy

Draft Schedule

Phase	2019			2020				2021	
	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
1: Visioning & education									
2: Investment priorities & scenario options									
3: Plan development									
4: Draft plan review									

Engagement Phases

1

SUMMER/FALL 2019

Visioning and education

Potential activities:

- > Video
- > Online survey
- > Pop-up events
- > Telephone town halls
- > Youth outreach
- > Community-based organization outreach
- > Sub-regional forums
- > DRCOG committees

2

WINTER 2019/SPRING 2020

Investment priorities and scenario options

Potential activities:

- > Online survey (map-based and visualization)
- > Youth outreach
- > Stakeholder workshops
- > Community-based organization outreach
- > Sub-regional forums
- > Bike to Work Day 2020

3

FALL/WINTER 2020

Plan development

Potential activities:

- > Sub-regional forums
- > DRCOG committees
- > Partner meetings
- > Public photo contest

4

SPRING 2021

Draft plan review

Potential activities:

- > Public open houses
- > Online survey
- > Web comments



PLAN ADOPTION
JUNE 2021

