

NFRMPO TECHNICAL ADVISORY COMMITTEE (TAC)—AGENDA

June 19, 2019

1:00 – 3:30 p.m.

- 1. Call Meeting to Order, Welcome, and Introductions**
- 2. Public Comment (2 minutes each)**
- 3. Approval of May 15, 2019 Meeting Minutes (Page 2)**

CONSENT AGENDA

No items this month.

ACTION ITEMS

- | | |
|---|------------------|
| 1) 2045 Fiscally Constrained Plan (Page 9) | Bornhoft/Karasko |
| 2) 2019 Congestion Management Process (CMP) (Page 15) | Dusil |

PRESENTATIONS

No items this month.

DISCUSSION ITEMS

- | | |
|---|----------|
| 3) 2045 Regional Transportation Plan (RTP) Draft Safety & Resiliency and Implementation Sections and Schedule (Page 17) | Karasko |
| 4) 2045 Regional Transportation Plan (RTP) Draft Scenarios Section (Page 55) | Bornhoft |
| 5) FY2019 & FY2020 Additional Funding Allocations Process (Page 70) | Bornhoft |
| 6) Freight Northern Colorado (FNC) (Page 72) | Dusil |

OUTSIDE PARTNER REPORTS

- | | |
|----------------------------------|-----------------------|
| 7) NoCo Bike & Ped Collaborative | <i>Handout</i> |
| 8) Regional Air Quality Council | |
| 9) Regional Transit Agencies | |
| 10) Senior Transportation | |

REPORTS

- | | |
|----------------|-----|
| 11) Roundtable | All |
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- 4. Final Public Comment (2 minutes each)**
- 5. Next Month's Agenda Topic Suggestions**
- 6. Next TAC Meeting: July 17, 2019**

**MEETING MINUTES of the
TECHNICAL ADVISORY COMMITTEE (TAC)
North Front Range Transportation and Air Quality Planning Council**

**Windsor Recreation Center - Pine Room
250 North 11th Street
Windsor, CO**

**May 15, 2019
1:01 – 2:56 p.m.**

TAC MEMBERS PRESENT:

Dave Klockeman, Chair – Loveland
Mitch Nelson, Vice Chair – Severance
Dawn Anderson – Weld County
Karen Schneiders – CDOT
Allison Baxter – City of Greeley
Amanda Brimmer – RAQC
Randy Ready – City of Evans
Eric Tracy – Larimer County
Dennis Wagner – Windsor

TAC MEMBERS ABSENT:

Stephanie Brothers – Berthoud
Aaron Bustow – FHWA
Rick Coffin - APCD
Eric Fuhrman – Timnath
Pepper McClenahan – Milliken
Kim Meyer – Johnstown
Jeff Schreier – Eaton
Ranae Tunison - FTA
Town of LaSalle

NFRMPO STAFF:

Suzette Mallette
Medora Bornhoft
Ryan Dusil
Alex Gordon
Becky Karasko

IN ATTENDANCE:

Darren Davis - GET
Jessica Ferko - RAQC
Candice Folkers – COLT
Alana Koenig - CDOT
Rusty McDaniel – Larimer County
Jan Rowe – CDOT

CALL TO ORDER

Chair Klockeman called the meeting to order at 1:01 p.m.

PUBLIC COMMENT

There was no public comment.

APPROVAL OF THE APRIL 17, 2019 TAC MINUTES

Nelson moved to approve the April 17, 2019 TAC meeting minutes. The motion was seconded by Anderson and approved unanimously.

CONSENT AGENDA

FY2020-2021 Unified Planning Work Program (UPWP) Tasks - McDaniel moved to approve the Consent Agenda. The motion was seconded by Nelson and approved unanimously.

ACTION ITEMS

2045 Regionally Significant Corridors (RSCs) - Dusil stated the 2045 RSCs are an important component of the 2019 Congestion Management Process (CMP), the 2045 Regional Transportation Plan (RTP), and are the roads which are eligible for funding in the NFRMPO biennial Call for Projects. Dusil described the proposed criteria for the 2045 RSCs, changes from the 2040 RSCs, and concerns raised by Planning Council members at their May 2, 2019 meeting.

Dusil ask if the proposed realignment of RSC #16: LCR 7 / LCR 9 / Timberline Road is accurate. Klockeman responded it is.

Dusil stated the Johnstown Planning Council member is concerned with the proposed removal of a segment of RSC #19: Weld County Road (WCR) 13 and NFR staff met with Johnstown staff to discuss. Johnstown staff does not have any planned improvements to submit for inclusion in the 2045 RTP and does not plan to submit a functional classification change request with CDOT at this time. Anderson confirmed Weld County also has no such plans.

Dusil stated RSC #25: 83rd Avenue / Two Rivers Parkway was realigned to accurately reflect a project submitted by City of Greeley staff. Nelson added while the portion of the RSC #25 north of SH392 is proposed for removal, the Town may pursue a functional classification change through CDOT. NFRMPO staff will work with Nelson on next steps for WCR27.

Dusil stated the functional classification change requests submitted by the NFRMPO in January and April 2019 are still pending approval.

Dusil asked if the 2045 RSCs should return to Planning Council for Action at their June 6, 2019 meeting. TAC members agreed it should.

Nelson asked if work on WCR74 would be impacted by the removal of WCR27. Dusil stated all of WCR74 is eligible for federal aid so projects on the road would not be impacted by the removal of the segment of WCR27.

Baxter asked if a functional classification change of WCR27 north of SH392 would make the road meet the 2045 RSC criteria. Dusil stated if the change makes the road federal aid eligible, then yes.

Dusil stated he will work with Baxter and Nelson on the functional classification change request process.

Tracy moved to approve the 2045 RSCs. The motion was seconded by Wagner and approved unanimously.

May 2019 TIP Amendment - Bornhoft described five requested project revisions and one requested addition from CDOT Region 4, and one requested project addition from the NFRMPO.

Bornhoft stated three of the CDOT Region 4 project revisions involve swapping CMAQ funds awarded through the NFRMPO Call for Projects process with local funds.

There is no air quality conformity impact or Environmental Justice (EJ) Analysis required with this amendment. The 30-day Public Comment period for the May 2019 TIP Amendment began on May 8, 2019 and will conclude on June 6, 2019. The Amendment will go to Planning Council for Action at their June 6, 2019 meeting.

Baxter asked why the CMAQ funding is being swapped. Bornhoft responded the swap is in response to the suspension of Buy America waivers. Schneiders added the swap is a unique situation allowing the project sponsors to keep projects moving. Schneiders requested Loveland and Weld County TAC members brief their Planning Council members on this item before the June 6, 2019 Planning Council meeting.

Nelson moved to approve the May 2019 TIP Amendment. The motion was seconded by Schneiders and approved unanimously.

2045 Regional Transportation Plan (RTP) Plan Projects - Bornhoft stated the 2045 RTP must contain a fiscally constrained list of roadway capacity projects over its 25-year planning horizon. Bornhoft asked TAC members to review the list and corresponding maps for accuracy.

Malette asked what constitutes a capacity project. Bornhoft stated capacity projects include any additional travel lanes for any distance.

Anderson asked why intersection projects are not included. Bornhoft stated intersection improvement projects are not included in the list because the RTP is a corridor-based plan and intersection improvements cannot be modeled in the NFRMPO's 2015 Regional Travel Demand Model (RTDM); however, capacity projects must be included for air quality conformity.

Klockeman asked if intersection improvement projects should be included in the 2045 RTP to convey a more holistic representation of fiscal constraint. Bornhoft stated identifying specific intersection projects in the 2045 RTP could ultimately be more constraining on communities if plans change and a project is not shown, requiring a plan amendment. Karasko stated a systemwide total intersection improvements cost could be included under the Road Operations and Maintenance category in the 2045 Fiscally Constrained Plan.

Nelson asked if lane additions to WCR27 would be included. Bornhoft stated they would not be included in the 2045 RTP since they are not an RSC, but it will be included in the RTDM.

Schneiders moved to approve the 2045 RTP Plan Projects. The motion was seconded by Baxter and approved unanimously.

DISCUSSION ITEMS

2019 Congestion Management Process (CMP) Opportunities - Dusil stated the Planning Council raised concerns at their May 2, 2019 meeting regarding the Congested Corridor selection process for the 2019 CMP. Planning Council was concerned only one segment of I-25 is identified as congested when using Travel Time Index (TTI) and Travel Time Reliability (TTR). NFRMPO staff are proposing adding Truck Travel Time Reliability (TTTR) to the criteria since it is a federally required performance measure (PM) for the Interstate system. TTTR measures the 95th percentile speed to the 50th percentile speed for commercial vehicles across specified time periods. To remain consistent with the PM, NFRMPO staff proposes only analyzing it for the Interstate. This means including TTTR would not add new corridors to the list, rather it would identify additional segments of the I-25 corridor as congested.

Dusil asked if TAC members would like to include TTTR to identify Congested Corridors. Tracy asked if the analysis could be expanded beyond I-25. Dusil stated NFRMPO staff could try to replicate the INRIX methodology for the remaining corridors, but the sample size is lower, and staff's methodology may not match INRIX's.

Baxter asked why US85 is considered unreliable. Dusil stated the analysis can be modified if there is local knowledge to substantiate any inaccuracies or anomalies in the data.

Brimmer asked if the TTTR is a component of the TTR. Dusil stated TTTR and TTR are calculated separately and there is not a clear way to pull out passenger vehicles using the INRIX platform.

Schneiders requested the Congested Corridor Profile tables should not include TTTR if the metric is unavailable for certain corridors and/or an asterisk and explanation should be provided.

Dusil stated Planning Council members were also concerned TTI does not account for segments where the free flow speed as defined by INRIX is significantly lower than the posted speed limit or a truly free flowing roadway. Dusil asked if anything stands out in the hourly TTI by RSC chart or free flow speed map in the TAC packet.

Bornhoft added the peak travel times chosen appear to be accurate representations of peak travel across most corridors.

Dusil stated NFRMPO staff is willing to consider other data TAC members have access to.

Dusil stated NFRMPO staff is requesting TAC members provide additional feedback on the individual Congested Corridor Profiles. The opportunities section should include any considerations that might be appropriate along a corridor even if they are not currently planned. Dusil will also send them out to TAC members and is requesting feedback by Friday, May 31.

Klockeman stated opportunities such as grade separation are not appropriate for all corridors. Karasko stated even if an opportunity could warrant a feasibility study, it may help to have it identified in the CMP.

Baxter stated Bus Rapid Transit (BRT) is more likely along US34 Business than grade separation. Baxter asked how planned strategies were identified. Dusil stated they were taken from local and regional plans, TAC member feedback, and general knowledge of current or upcoming planning efforts. Dusil added strategies were included if they have major benefits to a corridor but are not located directly on that corridor, such as BRT or a shared-use path on a parallel facility.

Schneiders stated Maintenance Decisions and Support System (MDSS) should be shown as implemented on all state-owned corridors and on some local corridors.

Dusil stated the Draft 2019 CMP will return to TAC for Action at the June 19, 2019 meeting.

2045 Regional Transportation Plan (RTP) Draft Technology Section - Karasko stated the 2045 RTP Technology Section covers connected and autonomous vehicles, FAST Act Alternative Fuels Corridors, and Shared Mobility. Karasko requested TAC members provide photos from their community for the 2045 RTP Chapter covers and requested TAC feedback on Draft Technology Section by Friday, May 31, 2019.

2045 Regional Transportation Plan (RTP) Fiscally Constrained Plan – Bornhoft stated a Fiscally Constrained Plan is a federally required component of the 2045 RTP. Additional data sources were used compared to the financial plan in the 2040 RTP based on recommendations from the NFRMPO's 2018 Quadrennial Federal Certification Review. FHWA recommended identifying operations and maintenance costs and available funding over the life of the plan, including revenue from all reasonably anticipated sources, and using an inflation factor for the expenditure year.

Bornhoft used a combination of the 2040 CDOT Revenue Projection & Program Distribution and 2045 Revenue Projections. Estimates for Metro Planning, STBG, and TA programs will be updated once NFRMPO staff receives MPO-specific information from CDOT. The remaining programs, including CMAQ, will need to rely on the 2040 Program Distribution due to timing of CDOT's process.

Local revenue sources for roadways include general fund transfers, Highway Users Trust Fund (HUTF), sales tax, use tax, property tax, impact fees, and miscellaneous fees and taxes. The 2040 RTP only accounted for impact fees, general funds, and some local taxes. For the counties, funding was allocated to the NFR region

using a formula based on 50 percent on Vehicle Miles Traveled (VMT) and 50 percent on lanes miles. Because 78 percent of VMT and 43 percent of lane miles in Larimer County are in the NFRMPO region, 61 percent of the county's transportation revenue was included in the Fiscally Constrained Plan. Because 32 percent of VMT and 12 percent of lane miles in Weld County are in the NFRMPO region, 22 percent of the county's transportation revenue was included. The local revenue estimates for roadways is \$170M for Fiscal Year 2019 (FY19).

Roadway operation costs were estimated at \$27,126 per lane mile per year in 2018 dollars based on the 2012 Census of Governments. Roadway maintenance costs were estimated at \$13,175 per lane mile per year and transit operations and maintenance costs were estimated at \$6.5M per year.

Anticipated revenue is projected at \$8.5B over the 25-year time horizon of the 2045 RTP. A two percent inflation factor was used where inflation was not already accounted for.

Klockeman asked why the "Local – Highway" category is the largest. Bornhoft responded the category is very comprehensive, including staff time, planning, engineering, and other types of expenditures. Baxter suggested the funding program name be changed to "Local – Roadway" so as not to be interpreted as local funding being spent on State-owned highways.

Schneiders asked if Bustang is included. Bornhoft stated it is included but not shown in the table. Schneiders requested a more detailed explanation of what each category includes.

Bornhoft stated projected expenditures are split into four categories for a total need of \$10.8B. Anticipated revenues total \$8.5B, creating an unmet need of \$2.4B. Bornhoft stated it is up to TAC to decide how to allocate the revenue. Karasko stated Denver Regional Council of Governments (DRCOG) only allocated revenue in the roadway operations and maintenance category to 80 percent of the need to match anticipated revenue.

Bornhoft requested TAC members submit any reasonably anticipated developer contributions or other revenue sources by 5:00PM on Wednesday, May 22, along with their preference on allocating revenue to the four expenditure categories.

Schneiders suggested the transit operations, maintenance, and local system expansion category name also include capital. Bornhoft stated the definition of maintenance includes state of good repair. Schneiders stated the State of Colorado has around \$9B of need for deferred maintenance and would like to see how the total need in the NFRMPO region relates to that figure. Karasko stated the need in the Fiscally Constrained Plan is for 25 years as opposed to just one year. Mallette added the State's need is for State facilities and programs, while the NFRMPO figure is for all facilities and programs. Bornhoft stated the magnitude of the anticipated revenue estimates is consistent with DRCOG's when accounting for the size of the region.

Baxter asked if Greeley's interchange sales tax is included. Bornhoft stated it is included in operations and maintenance.

Mallette stated the unmet need is consistent with previous RTPs.

Schneiders noted the bicycle and pedestrian needs are not reflected.

Mallette asked if all projects in the RSC capacity project category are fiscally constrained. Bornhoft stated some projects are not fiscally constrained, and communities may not know how to identify fiscal constraint for projects in later horizon years.

Schneiders requested some of the assumptions be clarified. Bornhoft stated she will provide the detailed assumptions to TAC members.

Klockeman asked how the maintenance costs were calculated. Bornhoft stated it is based on the State highway cost per lane mile per year. Klockeman stated the local maintenance and operations costs in Loveland

are substantially lower than the State estimate. Bornhoft stated she will email TAC members requesting local maintenance and operations costs.

Freight Northern Colorado (FNC) Plan - Dusil stated FNC is the first regionwide freight plan for the NFRMPO region. Creating a regional freight plan was a recommended action by the Federal Highway Administration (FHWA) in the NFRMPO's Quadrennial Review in 2014. Dusil stated a lot of freight-specific data is proprietary and expensive, so the NFRMPO procured as much data as it could from existing efforts and partnerships.

FNC is organized into five chapters and NFRMPO staff are requesting TAC members provide feedback mainly on Chapters three through five. Chapter three includes concerns from local and state plans. Chapter four highlights emerging trends and opportunities that could have significant implications for the future of freight movement. Chapter five provides guidance, resources, and recommendations for improving freight transportation in the region. Dusil stated the recommendations in FNC are process-oriented emphasizing performance-based planning, strengthening partnerships, and supporting existing planning efforts.

Dusil stated NFRMPO staff is waiting on data from planning partners for some components of FNC. Dusil asked if TAC members would like to see FNC for Discussion or Action in June. TAC members agreed they would like to see FNC for Discussion again in June before Planning Council Discussion, so TAC members have time to review the document.

OUTSIDE PARTNERS REPORTS (verbal)

NoCo Bike & Ped Collaborative – Dusil stated the next NoCo Bike & Ped Collaborative meeting will be another facilitated discussion building on conclusions from the facilitated discussion in April. The focus of the discussion will be to build consensus on the group's role in the region.

Regional Air Quality Council – Brimmer stated the Air Quality Control Commission (AQCC) has agreed to hold a hearing on the Zero Emission Vehicle (ZEV) rulemaking in August. It will likely be a four-day hearing and details are out now. There is a coordinated effort between CDOT, the Colorado Energy Office, and automobile manufacturers to create a voluntary zero emission vehicle agreement without having a rulemaking. There will also be a rulemaking on July 18, 2019 on Volatile Organic Compounds (VOCs).

Brimmer stated the RAQC staff would be happy to present to any local boards or commissions on the role of the RAQC, Simple Steps, Better Air, messaging, and other air quality topics.

Regional Transit Agencies – Zeisel stated the City of Fort Collins held a MAX five-year anniversary celebration on Saturday. The City just placed an order for three Compressed Natural Gas (CNG) buses and is working with Greeley and Loveland on fare reciprocity to create a discounted pass to be used on all three transit systems.

Zeisel stated Transfort has funding for two 35-foot electric buses and recently submitted a Low or No Emission (Low-No) Vehicle Program application for two additional electric buses and will hear back in August. The request is for a 40-foot and 60-foot bus. Transfort partnered with CTE, a non-profit consulting firm, to analyze fleet electrification opportunities as part of the Low-No application.

Davis stated the buses for the Poudre Express regional route are due to arrive in August and GET has been testing the route. The route is expected to start January 2020.

Senior Transit Items – Gordon stated he met with the Rural Alternative for Transportation (RAFT), a volunteer transportation service outside Berthoud, about potentially expanding service into Weld County given the many medical services along US34.

The first consultant meeting for the Larimer County Senior Transportation Implementation Plan is at the end of May with the Larimer County Mobility Committee. Gordon stated the first ride was given today as part of the National Aging and Disability Transportation Center (NATDC) grant using the call center at Via Mobility.

REPORTS

Roundtable – Karasko stated the NFRMPO has a Planner I job posting open until Friday and will be holding intern interviews next week. Karasko stated the August 21, 2019 TAC meeting must be held at a different location. Anyone interested in hosting should contact Karasko.

Schneiders stated CDOT is approaching year end which could affect the timing for processing some financial transactions.

Koenig stated she will be working with local agency staff to identify what funding needs to be rolled forward to FY2020.

Nelson stated Severance has hired an intern.

MEETING WRAP-UP

Final Public Comment – There was no final public comment.

Next Month's Agenda Topic Suggestions – Karasko stated the Safety, Security, and Resiliency Section and the Implementation Section of the 2045 RTP, and Freight Northern Colorado will be Discussion Items.

Meeting adjourned at 2:56 p.m.

Meeting minutes submitted by:

Ryan Dusil, NFRMPO Staff

The next meeting will be held at 1:00 p.m. on Wednesday, June 19, 2019 at the Windsor Recreation Center, Pine Room.

MEMORANDUM

To: NFRMPO Transportation Advisory Committee (TAC)

From: Medora Bornhoft

Date: June 19, 2019

Re: 2045 Fiscally Constrained Plan - Action

Background

The 2045 Regional Transportation Plan (RTP) is federally required to be fiscally constrained, which means the total estimated cost of maintaining and improving the transportation system cannot exceed the reasonably anticipated forecasted revenue over the time horizon of the Plan.

Following the TAC discussion at the May 15 TAC meeting, several communities submitted revisions to their local revenue estimates. In addition, several communities provided local estimates of roadway operations and maintenance. These revisions are included in the tables below.

A TAC Work Session was held on June 7 to discuss the revenue and expenditure assumptions for the fiscally constrained plan. At the Work Session, participants determined additional information was needed from local communities on project cost, project funding sources, local estimates of roadway operations and maintenance, and local estimates of intersection improvement costs. This data request was sent to TAC members on June 10, with a deadline of 5:00 PM on Tuesday, June 18 to provide additional information. Data provided by the deadline will be analyzed and brought to the TAC meeting on June 19.

Reminder: Local communities have until 5:00 PM on Tuesday, June 18 to submit local estimates for roadway operations and maintenance, project cost and funding source information, and estimates of intersection improvement costs to be incorporated into the Fiscally Constrained Plan.

Reasonably Anticipated Revenues

Revenue forecasts for state and Federal Highway Administration (FHWA) funding sources were developed based on the draft CDOT 2045 Program Distribution “high revenue” scenario (statewide total) applied to the 2040 Program Distribution (North Front Range-specific totals).

Additionally, revenue was forecasted for Federal Transit Administration (FTA) sources and for local sources based on extrapolation from 2018 and 2019 revenues, respectively.

Local revenue available for roadways was estimated through FY2019 budgets from each local government, or the closest year to 2019 readily available. County transportation revenues were apportioned to the North Front Range based on two factors weighted equally:

- the percentage of lane miles within the North Front Range and
- the percentage of Vehicle Miles Traveled (VMT) in the North Front Range.

Based on these two factors, 61 percent of Larimer County's transportation revenue and 22 percent of Weld County's transportation revenue was considered to be reasonably anticipated to be available for the North Front Range region. FTA revenue was forecasted based on revenue received by local transit agencies in 2017.

Anticipated Operations and Maintenance Costs

As federally required, the anticipated costs for operating and maintaining the transportation system were developed. Operating costs on roadways include:

- the cost of lighting;
- traffic control; and
- snow and ice removal.

The roadway operations cost was originally estimated via 2012 Census of Governments data. The cost of engineering, planning, and design was originally included in the operations estimate per the Census of Governments definition; however, Work Session participants agreed to remove those costs from operations as they are included in capacity project costs. To more accurately reflect costs within the region, the roadway operations costs has been updated based on data provided by four local governments. The current estimate in 2020 dollars is \$9,587 per lane mile on municipal roads, \$4,103 per lane mile on county roads, and \$6,845 per lane mile on state highways.

Maintenance costs for roadways represent the cost of resurfacing. Maintenance costs were originally estimated with 2014 Highway Statistics data for state-maintained facilities in Colorado. To more accurately reflect costs within the region, the roadway maintenance costs have been updated based on data provided by four local governments. The current estimate in 2020 dollars is \$14,857 per lane mile on municipal roads, \$13,606 per lane mile on county roads, and \$14,232 per lane mile on state highways.

Operations and maintenance costs for the transit system include vehicle operations and maintenance, general administration, facility maintenance, and state of good repair.

Operations and maintenance costs for the existing transit system are estimated at \$23.7M per year in 2018 dollars.

RTP Projects

The RTP is required to identify roadway capacity and major transit projects planned over the 25-year planning horizon for which funding is reasonably anticipated to be available. The cost of roadway capacity projects on Regionally Significant Corridors (RSCs) submitted by NFRMPO member jurisdictions and collected from local plans totals \$2.8B. The capital and operating costs of the 2045 Regional Transit Element (RTE) buildout projects are \$27M. The cost of transit system expansion planned by local agencies is incorporated into the local transit system cost of \$1.3B over the time horizon of the Plan.

The cost of intersection improvements system-wide is estimated at \$612M over the time horizon of the Plan based on data from Loveland and Fort Collins. Specifically, the estimated cost per year in 2020 dollars is \$2.5M for Loveland and \$7.8M for Fort Collins. To estimate costs for the remainder of the region, the average cost per year (\$5.2M) is multiplied by 1.5 to account for intersection improvement projects outside of Fort Collins and Loveland.

All revenues and expenditures are presented in year of expenditure (YOE) dollars in accordance with federal requirements. Revenue and expenditures were inflated to YOE using a two percent inflation factor.

The total reasonably anticipated revenue over the time horizon of the 2045 RTP is \$8.1B, as shown in **Table 1**. The total anticipated need over the time horizon of the 2045 RTP is \$11.0B as shown in **Table 2**. This leaves an unmet need of at least \$2.864B in the region. **Table 3** and **Table 4** summarize project information provided by project sponsors and demonstrates the need for additional funding source and fiscal constraint information for each submitted project.

Action

Staff requests TAC review, discuss, and approve the revenue and expenditure summary tables of the 2045 fiscally constrained plan.

Table 1. Anticipated Transportation Revenue in Millions, 2020-2045

Funding Program	2020	2021	2022	2023	2024	2025	2026-2030	2031-2035	2036-2040	2041-2045	TOTAL 2020-2045
Maintenance	\$26	\$29	\$24	\$21	\$22	\$22	\$109	\$117	\$122	\$124	\$616
Surface Treatment	\$22	\$24	\$19	\$16	\$16	\$16	\$79	\$85	\$84	\$86	\$410
Structures On-System	\$5	\$5	\$4	\$3	\$3	\$3	\$14	\$11	\$9	\$10	\$61
Regional Priority Program	\$0	\$0	\$12	\$0	\$0	\$0	\$27	\$15	\$16	\$18	\$121
Highway Safety Investment Program	\$2	\$2	\$2	\$2	\$2	\$2	\$11	\$12	\$12	\$12	\$53
FASTER - Safety	\$3	\$3	\$3	\$3	\$4	\$4	\$20	\$24	\$27	\$27	\$119
Transportation Alternatives (TA)	\$1	\$1	\$1	\$1	\$1	\$1	\$4	\$4	\$4	\$4	\$16
Surface Transportation Block Grant (STBG)	\$3	\$3	\$3	\$3	\$4	\$4	\$18	\$18	\$19	\$19	\$84
Congestion Mitigation & Air Quality (CMAQ) Improvements	\$4	\$4	\$4	\$4	\$4	\$4	\$21	\$22	\$22	\$23	\$98
Metropolitan Planning	\$1	\$1	\$1	\$1	\$1	\$1	\$4	\$4	\$3	\$3	\$21
Transit and Rail Local Grants (FASTER Transit)	\$0.3	\$0.3	\$0.3	\$0.2	\$0.3	\$0.3	\$2	\$2	\$2	\$2	\$8
New Funding Source	\$0	\$0	\$0	\$0	\$0	\$0	\$34	\$52	\$52	\$51	\$335
FTA 5307	\$7	\$7	\$7	\$7	\$8	\$8	\$40	\$44	\$49	\$54	\$232
FTA 5310	\$0.2	\$0.2	\$0.2	\$0.2	\$0.2	\$0.2	\$1	\$1	\$1	\$1	\$5
FTA 5339	\$0.4	\$0.4	\$0.4	\$0.5	\$0.5	\$0.5	\$3	\$3	\$3	\$3	\$15
Local - Roadway	\$163	\$166	\$169	\$173	\$176	\$180	\$955	\$1,054	\$1,164	\$1,285	\$5,485
Local - Transit	\$15	\$15	\$16	\$16	\$16	\$17	\$88	\$97	\$107	\$119	\$507
Bustang	\$1.3	\$1.3	\$1.3	\$1.4	\$1.4	\$1.4	\$8	\$8	\$9	\$10	\$72
Total	\$254	\$263	\$269	\$254	\$259	\$264	\$1,437	\$1,572	\$1,706	\$1,851	\$8,158

Table 2. Projected Expenditures by Category in Millions, 2020-2045	
Category	Expenditures
Regionally Significant Corridor (RSC) Capacity Projects	\$2,373
Road Operations and Maintenance	\$5,814
Non-RSC Capacity Projects	\$703
Intersection Improvement Projects	\$613
Regional Non-Motorized Corridor Projects	\$161
Transit operations, maintenance, and local system expansion	\$1,331
Regional Transit Element Corridors - Buildout	\$27
Total Need	\$11,022
Anticipated Revenues	\$8,158
Unmet Need	\$2,864

Table 3. Capacity Project Costs by Fiscal Constraint as Identified by Project Sponsors		
Fiscal Constraint	RSC Capacity Project	Non-RSC Capacity Project
Constrained	\$680,504,233	\$433,111,520
Unconstrained	\$426,784,014	\$215,287,134
Not Identified*	\$1,265,983,499	\$54,960,951
Total	\$2,373,271,746	\$703,359,605

***Projects with an unidentified fiscal constraint will be considered not fiscally constrained unless otherwise identified by the project sponsor by Tuesday, June 18.**

Table 4. Roadway Capacity Project Funding Sources (RSC and Non-RSC) Submitted by Project Sponsors

Funding Source Category	Funding Source	Constrained Funding	Unconstrained Funding	Constraint Not Identified	Total Funding
Federal	TIGER	5,000,000			5,000,000
	STBG	1,268,242			1,268,242
	Other Federal	3,731,000			3,731,000
State	SB267	10,000,000			10,000,000
	FASTER Safety	4,500,000			4,500,000
Local Governments	Evans - Capital Projects Street Fund Future Dev		101,527,415		101,527,415
	Fort Collins – Sales Tax	12,756,242		13,652,354	26,408,596
	Fort Collins – Street Oversizing Fund	154,726,414		256,090,575	410,816,989
	Greeley – Keep Greeley Moving Funding	10,036,095			10,036,095
	Greeley – Road Dev. Funds	15,912,805		156,769,686	172,682,491
	Johnstown		21,795,585		21,795,585
	Larimer County Capital Improvement Program, Transp Capital Expansion Fees	14,859,474			14,859,474
	Loveland - General Fund and Impact Fees	133,633,511			133,633,511
	Severance		2,173,634		2,173,634
	Severance - Road Impact Fees		3,170,604		3,170,604
	Timnath		24,020,253		24,020,253
	Windsor - Road Impact Fee	75,334,478			75,334,478
	Local - Various	20,625,000			20,625,000
Private	Developer	333,587,693	122,411,458		455,999,151
	Loveland – Centerra Metro District	47,567,991			47,567,991
Other/Not Specified	Grants	47,618,113			47,618,113
	Not Identified*	6,729,342	916,117,003	215,558,533	1,138,404,878
Total		897,886,400	1,191,215,953	642,071,148	2,731,173,500

***Projects with funding sources not identified need to have funding source submitted by project sponsors by Tuesday, June 18.**

AGENDA ITEM SUMMARY (AIS)

North Front Range Transportation & Air Quality Technical Advisory Committee (TAC)



Meeting Date	Agenda Item	Submitted By
June 19, 2019	<u>2019 Congestion Management Process (CMP)</u>	Ryan Dusil
Objective/Request Action		
To recommend Planning Council approval of the <u>2019 CMP</u> .		<input type="checkbox"/> Report <input type="checkbox"/> Work Session <input type="checkbox"/> Discussion <input checked="" type="checkbox"/> Action
Key Points		
<ul style="list-style-type: none"> • A Congestion Management Process (CMP) is a “systematic and regionally-accepted approach for managing congestion.”¹ • CMPs are required to be performance-based; however, federal law does not enumerate specific goals, objectives, or performance measures to include. • CMPs are required to identify and evaluate potential congestion mitigation strategies. • CMPs are required to identify an implementation schedule, responsible parties, and possible funding sources for proposed strategies. • The <u>2019 CMP</u> will replace the <u>2015 CMP</u> and will be incorporated into the <u>2045 Regional Transportation Plan (RTP)</u>. • The Draft <u>2019 CMP</u> is available for TAC review at https://nfrmpo.org/wp-content/uploads/draft-for-adoption-2019-CMP.pdf. 		
Committee Discussion		
<ul style="list-style-type: none"> • This is the fourth time the TAC is discussing the <u>2019 CMP</u>. • Planning Council discussed the draft <u>2019 CMP</u> at their May 2, 2019 meeting. The <u>2019 CMP</u> will return to Planning Council on July 11, 2019 for adoption. 		
Supporting Information		
<ul style="list-style-type: none"> • Relevant Goals and Objectives from the 2045 Goals, Objectives, Performance Measures, and Targets (GOPMT) were incorporated into the <u>2019 CMP</u>. • Performance measures were adapted from the 2045 GOPMT and include: <ul style="list-style-type: none"> ○ Travel Time Index (TTI) ○ Vehicle Miles Traveled (VMT) ○ Travel Time Reliability (TTR) ○ Truck Travel Time Reliability (TTTR) ○ Number of Crashes ○ Weekday Transit Ridership per Capita ○ Percent of commuter trips made via a non-Single Occupant Vehicle (SOV) mode ○ Percent National Highway System (NHS) miles covered by fiber • Following guidance provided by FHWA during the NFRMPO quadrennial review, the <u>2019 CMP</u> strategies Chapter was restructured from to the <u>2015 CMP</u>. • Strategies were grouped into six Tiers, structured generally from high-efficacy and/or low cost to low-efficacy and/or high cost. High-efficacy strategies are those with a large and lasting impact on VMT and congestion. Each strategy includes a description, example(s), pros and cons, and special considerations. • An implementation Chapter was added to the <u>2019 CMP</u> to conform with federal regulations. Chapter 5: Implementation identifies congested corridors, opportunities for managing congestion on these corridors, and parties responsible for implementation, per federal regulations. General recommendations for implementing the <u>2019 CMP</u> and a brief discussion of funding opportunities are also included in Chapter 5. 		

¹ https://ops.fhwa.dot.gov/plan4ops/focus_areas/cmp.htm

- Congested Corridors are identified as any 2045 Regionally Significant Corridor (RSC) with at least one segment with:
 - An average AM or PM peak period TTI greater than or equal to 1.5 in 2018
 - An average TTR Index greater than or equal to 1.5 in 2018
 - An average TTTR Index greater than or equal to 1.5 in 2018 (Interstate Only)
- Planning Council proposed changes to the 2045 RSC network and will adopt them as part of the 2019 CMP. The proposed changes are to restore the 2040 RSC extent for RSC 19: Weld County Road (WCR) 13 and RSC 21: WCR 27 / 83rd Avenue / Two Rivers Parkway

Advantages

- Incorporation of TAC input prior to Planning Council Discussion on May 2, 2019 will enable the 2019 CMP to be robust and comprehensive.

Disadvantages

- None.

Analysis/Recommendation

Staff requests TAC review and recommend Planning Council approval of the 2019 CMP at their July 11, 2019 meeting.

Attachments

- None.

AGENDA ITEM SUMMARY (AIS)

North Front Range Transportation & Air Quality Technical Advisory Committee
(TAC)



Meeting Date	Agenda Item	Submitted By
June 19, 2019	<i>2045 Regional Transportation Plan (RTP)</i> Draft Safety & Resiliency and Implementation Sections	Becky Karasko
Objective/Request Action		
Staff is providing the final group of Chapters and Sections for the <i>2045 Regional Transportation Plan (RTP)</i> for TAC review and discussion.		<input type="checkbox"/> Report <input type="checkbox"/> Work Session <input checked="" type="checkbox"/> Discussion <input type="checkbox"/> Action
Key Points		
<ul style="list-style-type: none"> • MPO staff is developing the <i>2045 RTP</i>, scheduled for September 2019 Planning Council adoption. • The <i>2045 RTP</i> includes a long-term transportation vision for the region. • The DRAFT 2045 RTP Safety & Resiliency and Implementation Sections for TAC member's review are attached. • Comments are due to NFRMPO staff by 5:00 p.m. on July 3, 2019. 		
Committee Discussion		
This is the first time TAC will discuss these Sections of the <i>2045 RTP</i> .		
Supporting Information		
The RTP is a federally-mandated plan for MPOs and includes a long-term transportation vision for the region. The <i>2045 RTP</i> summarizes the existing transportation system: roadways, transit, bicycle and pedestrian infrastructure, the environment, and includes a fiscally-constrained corridor plan for the future.		
Advantages		
Providing the sections as they are drafted allows TAC to maximize their time and input in reviewing the <i>2045 RTP</i> chapters and sections. Staff will provide presentations on the changes to the RTP to summarize changes to assist TAC in their review.		
Disadvantages		
None noted.		
Analysis/Recommendation		
Staff requests TAC members review the portions of the <i>2045 RTP</i> Draft Sections applicable to their jurisdictions for accuracy and content.		
Attachments		
<ul style="list-style-type: none"> • Section 2-5: Safety and Resiliency • Chapter 5: Implementation 		



2

Section 5

Safety and Resiliency

Chapter 2-5: Safety & Resiliency

A. NFRMPO's Role

As required by federal legislation, the NFRMPO has identified its role in regional transportation safety and security. As a planning agency, the NFRMPO acts in an informational capacity regarding safety and security of the transportation system in the region. The NFRMPO works with local agencies to ensure information is up-to-date and to make connections or hold trainings when necessary.

Partnerships

The NFRMPO acts in a supportive role for safety and security in the region. For example, the agency is a participant in the US85 and I-25 Transportation Incident Management (TIM) Standing Program Management Teams; supports local communities with applications for safety and security improvements; and ensures the transportation planning process is followed when amending projects into the Transportation Improvement Program (TIP).

Data Collection and Analysis

Regarding safety, the NFRMPO collects and analyzes data, which is used during the Call for Projects process. Safety data is used to track the

achievement of NFRMPO's Goals, Objectives, Performance Measures and Targets (GOPMT). Funding applicants must show an improvement in safety to receive funding for any transportation project in the region.

Outreach

The NFRMPO advertises major construction and safety issues in its print and social media. VanGo™ provides social media and newsletter updates for major incidents on commuting corridors. The NFRMPO uses its newsletter to show major construction in the region, including duration, project descriptions, and funding sources.

Figure X-1: Congestion on Harmony Road due to an incident



B. Safety

One of the core goals of the NFRMPO is to reduce the number and severity of crashes on regional transportation facilities. Safety is considered at all levels of the system, including roads, transit, bicycle and pedestrian facilities, and at-grade railroad crossings. The NFRMPO considers the reduction in crash rates, improvement of at-grade crossings, and safer bicycle and pedestrian facilities during the Call for Projects phase of the Transportation Improvement Program (TIP) when selecting projects.

Successive federal transportation spending bills have shifted transportation planning focusing on safety for roads, non-motorized trails, transit, and railroads. The Fixing America's Surface Transportation (FAST) Act, the most recent and current authorization bill, continued the shift to additional federal spending for safety projects. The inclusion of additional requirements from the Americans with Disabilities Act (ADA) has also made aspects of the transportation system safer for those with disabilities. Additionally, emergency response organizations are collaborating at the scene of traffic incidents to improve safety and efficiency.

Crash Data

State, NFRMPO, and local government staff track vehicle crashes and identify roadway locations with high crash rates. The state compiles crash data from traffic accident reports completed by law enforcement officers across the state, including both highway and local road crashes. The state crash dataset does not include counter reports, which are required reports completed by drivers involved in a crash when a law enforcement officer is not on scene. Counter reports cannot be used for any crash involving loss of human life, injuries which are evident at the scene, drugs, or alcohol use. The state geocodes crashes located on state facilities, while the NFRMPO geocodes crashes located on all other public roads. The crash trend analysis for the North Front Range region includes all officer-reported crashes from 2011 through 2017, though for some statistics data is only available through 2015 or 2016. The crash analysis may differ from local government estimates, which typically include counter reports.

Crash Trends

The number of crashes in Colorado increased every year from 2012 through 2016, with a slight decrease in 2017, as shown in **Figure X-X**. Data for 2011 through 2015 for the North Front Range region shows a similar trend, with the number of crashes increasing every year from 2012 through 2015.

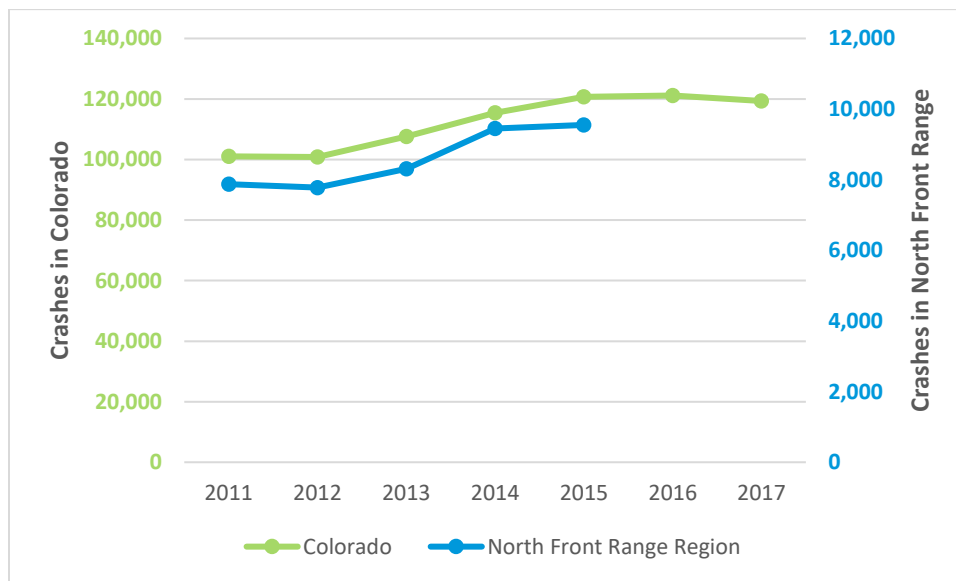
The number of serious injuries, which is defined as incapacitating injuries, across Colorado has fluctuated slightly between 2011 and 2016 as shown in **Figure X-X**, with an average of 3,198 serious injuries due to traffic crashes per year. Statewide, the number of fatalities due to traffic crashes increased every year from 2011 through

2017, with an average increase of five percent per year.

Within the North Front Range region, the number of serious injuries and fatalities are both on the rise. Serious injuries increased from 179 in 2011 to 227 in 2015, while fatalities increased from 24 in 2011 to 57 in 2017, as shown in **Figure X-X**.

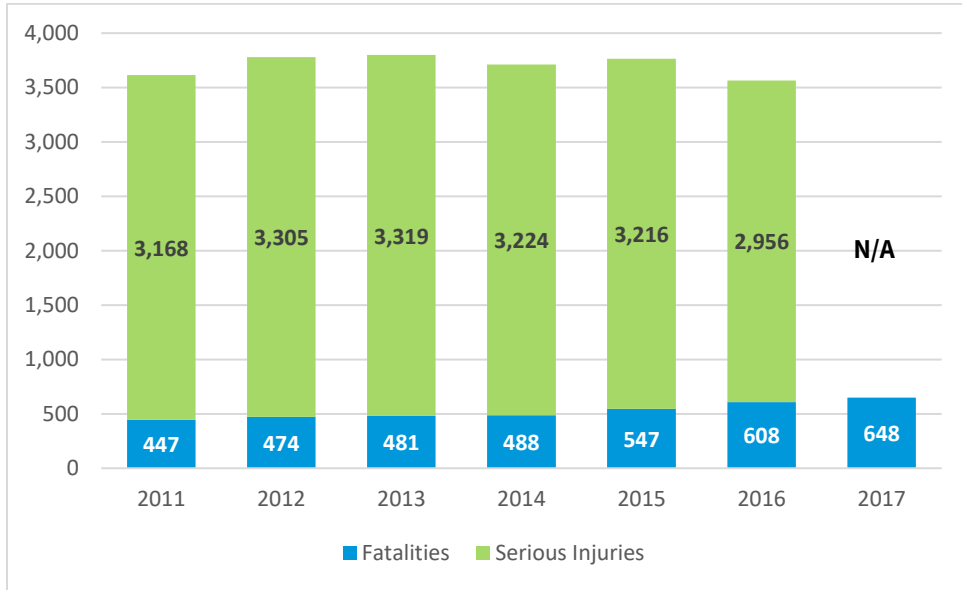
The locations of serious injury and fatal crashes from 2011 through 2015 in the North Front Range are identified in **Figure X-X**. Serious injury and fatal crashes happen throughout the region, with a higher number of crashes occurring on major facilities such as I-25, US287, and US34.

Figure X-X: Crashes in Colorado and the North Front Range Region, 2011-2017



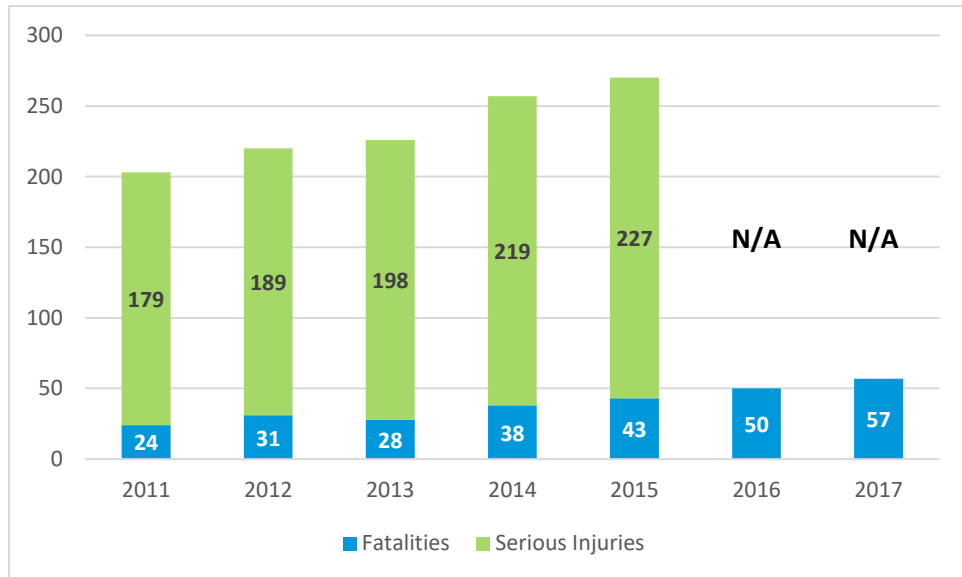
Source: CDOT, NFRMPO

Figure X-X: Crash Serious Injuries and Fatalities in Colorado, 2011-2017



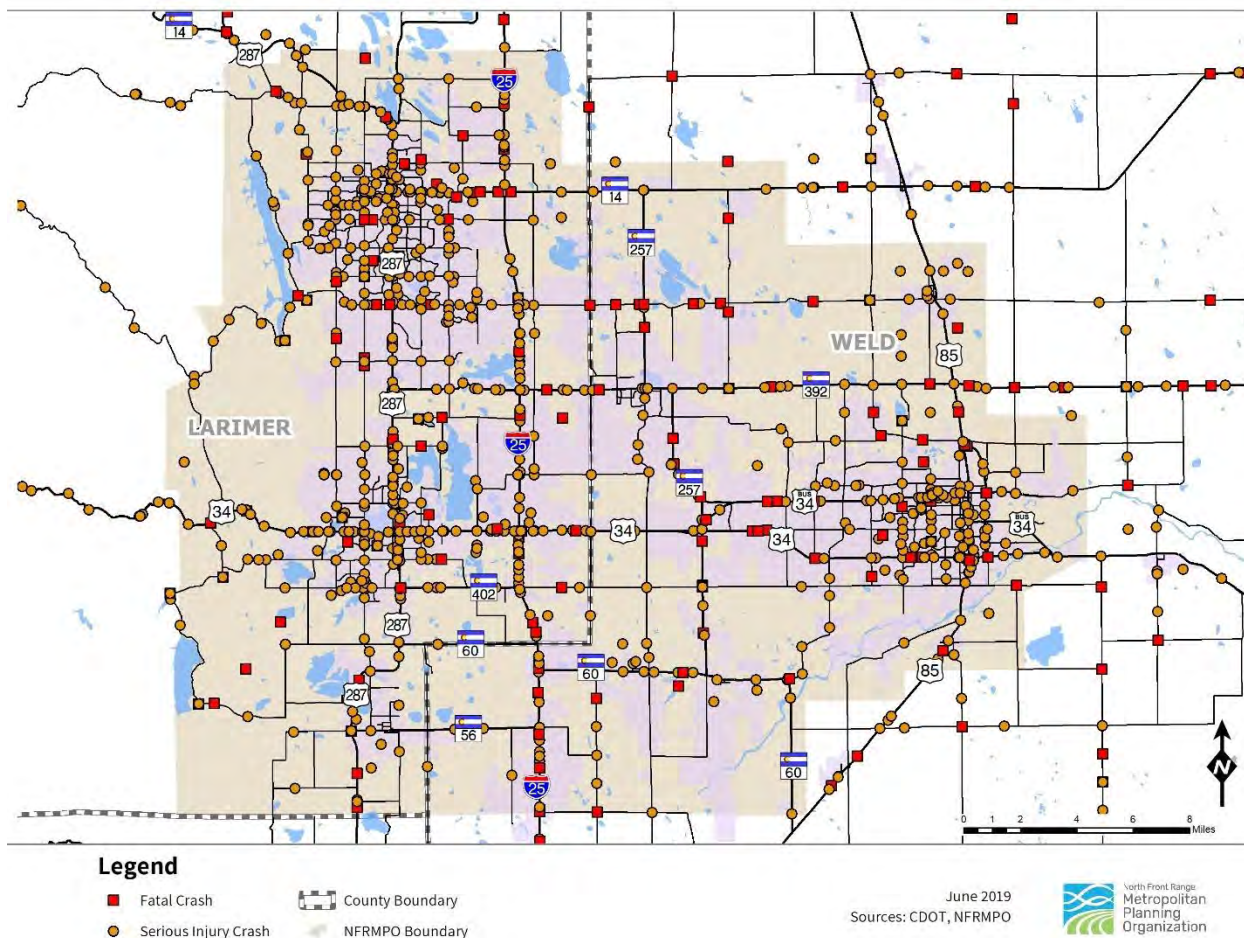
Source: CDOT, NFRMPO

Figure X-X: Crash Serious Injuries and Fatalities in the North Front Range, 2011-2017



Source: CDOT, NFRMPO

Figure X-X. Serious Injury and Fatal Crashes, 2011-2015



To evaluate the safety of truck travel on the roadway network, the percentage of overall crashes involving trucks was compared against the percentage of truck traffic on the region’s top 10 truck routes along with the truck crash rate per 100M vehicle miles traveled (VMT). **Table X-X** displays Annual Average Daily Truck Traffic (AADTT), Annual Average Daily Traffic (AADT), and the percent of truck traffic along the heaviest-traveled corridors in 2015. Crash data for the 2011-2015 time period displays the total

number of crashes, truck crashes, and percent truck crashes to evaluate safety on routes with high truck traffic. As shown in **Table 2-11**, there is a correlation between the percent truck traffic and the percent truck crashes; however, some corridors have much higher truck crash percentages than can be explained by the percent truck traffic. The corridors with the highest truck crash rate per 100M VMT include US85 Business, US85, and SH14.

Table X-X: Truck Traffic (2015) and Truck Crashes (2011-2015)

Roadway	Centerline Miles	2015			2011 - 2015			
		AADTT (Truck)	AADT (All Traffic)	Percent Truck Traffic	Total Crashes	Truck Crashes	Percent Truck Crashes	Truck Crashes per 100M VMT
I-25	27.1	5,292	63,267	8.4%	3,737	385	10.3%	12
US287	32.5	397	21,714	1.8%	4,513	116	2.6%	9
US34	34.4	646	25,449	2.5%	2,647	123	4.6%	8
US34 Business	15.5	147	15,561	0.9%	1,786	51	2.9%	12
US85	16.3	1,010	15,247	6.6%	844	135	16.0%	30
US85 Business	4.4	148	10,008	1.5%	363	37	10.2%	46
SH14	14.2	753	13,478	5.6%	905	91	10.1%	26
SH56	7.0	113	7,082	1.6%	135	6	4.4%	7
SH60	19.8	162	6,394	2.5%	410	39	9.5%	17
SH257	18.6	332	7,822	4.2%	450	35	7.8%	13
SH392	21.3	290	9,940	2.9%	860	73	8.5%	19

Sources: CDOT and NFRMPO, 2017

Rail Safety

As discussed in **Chapter 2-1**, the region has extensive railroad trackage operated by BNSF Railway, Union Pacific Railroad (UPRR), and Great Western Railway (GWR). Across the region there are 316 at-grade railroad crossings. **Table X-X** lists the number of crashes at these at-grade

rail crossings. In the 10-year period between 2008 and 2018, 24 incidents between trains and passenger vehicles occurred at regional at-grade railroad crossings, with eight injuries and three fatalities.

Table X-X: Railroad Crossing Crashes, 2008-2018

Crossing ID	City/Town	Roadway Name	Railroad	Crossing Protection	Number of Crashes	Number of Fatalities	Number of Injuries
804855W	Eaton	5th Street	UP	Cross Bucks	4	2	1
804852B	Eaton	CR 72	UP	Cross Bucks, Stop Signs	3	--	1
804856D	Eaton	CR 76	UP	Stop Signs	2	--	3
245033R	Loveland	Roosevelt Avenue	BNSF	Gates, Standard Flashing Light Signal	2	--	--
244647X	Fort Collins	Summit View	GWR	Gates, Standard Flashing Light Signal, Audible, Cross Bucks	1	--	--
921967R	Loveland	Boise Avenue	GWR	Highway Traffic Signals, Wigwags, Bells	1	--	--
804355Y	LaSalle	CR 48	UP	Cross Bucks, Stop Signs	1	--	--
244632H	Fort Collins	Plus Street	BNSF	Cross Bucks	1	1	--
245106Y	Windsor	CR 23	GWR	Cross Bucks	1	--	1
245032J	Loveland	Private Road	BNSF	Stop Signs	1	--	--
804501C	Fort Collins	CR 32	UP	Gates	1	--	--
804514D	Fort Collins	US 287	UP	Highway Traffic Signals, Wigwags, Bells	1	--	--
804363R	Evans	31 st Street	UP	Gates	1	--	--
804491Y	Milliken	CR 17	UP	Cross Bucks	1	--	1
244622C	Fort Collins	Horsetooth Road	BNSF	Gates, Cantilever Flashing Light Signal	1	--	1
804854P	Eaton	Collins Ave	UP	Gates, Standard Flashing Light Signal, Audible, Cross Bucks	1	--	--
804848L	Eaton	CR 70	UP	Cross Bucks, Stop Signs	1	--	--
Total					24	3	8

Freight Northern Colorado (FNC), the region's first Freight Plan, studies the impacts of truck and rail safety on the region's transportation network. Because rail and truck corridors intersect bicycle and pedestrian, transit, and travel corridors, freight safety impacts the entire regional transportation system.

BNSF Railway, GWR, and UPRR provide multiple programs to ensure track safety. BNSF Railway and UPRR staff inspect their routes multiple times per week for internal defects, track strength, undue stress on wheels, or preventable equipment failures.

Educating people about safety near railroad tracks is an important undertaking for the railroads. UPRR and BNSF Railway provide safety grants, which can be used by communities to provide education about safety near railroads. Grants can be used for youth education activities, school or community safety days, community safety blitzes, and at-grade crossing educational enforcement activities. In addition to programs for the public, the railroads maintain a firm commitment to safety behind the scenes. The railroads provide safety and technical training for all employees. Employees are trained in the field, on the job, and at centralized training centers.

Operation Lifesaver Inc. (OLI) is a rail safety education non-profit organization established in 1972. The organization offers free rail safety education programs using a network of authorized volunteer speakers and trained speakers. OLI focuses on what it calls the three E's: education, enforcement, and engineering. By partnering with federal, state, and local government agencies, highway safety

organizations, and the freight railroads, OLI reaches a wide population as rail transport increases, becomes more efficient, and uses quieter trains.

Some jurisdictions within the region are working to ensure safety while creating Quiet Zones at some at-grade crossings in their downtowns. The FRA allows Quiet Zones, which are areas where trains proceed without sounding a warning horn unless it is an emergency, at crossings with gates, flashing lights, constant warning time devices, and power out indicators. In 2016, the Town of Windsor established a Quiet Zone throughout the downtown area after installing safety equipment at 13 at-grade crossings with federal TIGER grant funds. The City of Fort Collins is currently pursuing an exemption from the Quiet Zone rules for the downtown area due to the lack of space at intersections for crossing gates.

Transit Safety

In 2017, the Federal Transit Administration (FTA) released the National Public Transportation Safety Plan required under MAP-21 and the FAST Act. The goal of the Plan is to improve the safety of all public transportation systems that receive Federal transit funds. The National Public Transportation Safety Plan identifies safety performance criteria for all modes of public transportation, defines "state of good repair" (SOGR), identifies minimum safety performance standards for public transportation vehicles and minimum safety standards to ensure the safe operation of the system, and a safety certification training program.

The National Public Transportation Safety Plan identifies the following transit safety performance measures:

- **Fatalities** – total number of reportable fatalities and rate per total vehicle revenue miles by mode
- **Injuries** – total number of reportable injuries and rate per total vehicle revenue miles by mode
- **Safety events** – total number of reportable events and rate per total vehicle revenue miles by mode
- **System reliability** – mean distance between major mechanical failures by mode

In May 2018, the FTA issued the Public Transportation Safety Program final rule, formally adopting the Safety Management Systems (SMS) approach to safety. As part of the final rule, the FTA can enforce compliance with Federal transit safety law. Consequences for noncompliance include mandating how funds can be spent, withholding funds, and imposing restrictions on a transit agency's operations.

Each local transit agency must create their own Public Transportation Agency Safety Plan within one year of the effective date of a final rule issued by the FTA. These plans must include methods for identifying and evaluating safety risks throughout all elements of the system; strategies to minimize the exposure of the public, personnel, and property to hazards and unsafe conditions; a process and timeline for conducting an annual review and update of the Plan; performance targets based on the safety performance criteria and SOGR, assignment of an adequately trained safety officer reporting to the general manager; and a comprehensive staff

training program for the operations personnel and personnel directly responsible for safety.

The Colorado Association of Transit Agencies (CASTA) partners with CDOT in use of the State's apportioned Rural Transit Assistance Program (RTAP) program. These funds are used for safety and training courses at the spring and fall CASTA conferences. In addition, CASTA is piloting a Professional Transit Driver Certification (PTDC) program, which will focus on defensive driving, Passenger Assistance Security and Safety (PASS), First Aid/CPR, safety, emergency and evacuation procedures, and workplace violence among other topics.

Statewide Initiatives

The NFRMPO works alongside and follows initiatives undertaken at the state level. There are two key components to the State's approach to safety, including the Whole System Whole Safety initiative and the Towards Zero Deaths (TZD) goal.

CDOT's Whole System Whole Safety initiative heightens safety awareness by taking a systematic statewide approach to safety by combining the benefits of CDOT's programs that address driving behaviors, the built environment and operations. The goal is to improve the safety of Colorado's transportation network by reducing the rate and severity of crashes and improving safety conditions for those traveling by all modes.

CDOT's [Strategic Highway Safety Plan](#) (SHSP), approved in 2015, establishes the state's TZD goal and identifies the important role of engineering, education, enforcement, and emergency medical services to accomplish it.

The Plan notes in the 10 years between 2002 and 2012, traffic-related fatalities in Colorado dropped 36 percent and serious injuries declined 35 percent.¹ To continue this decrease, the SHSP brought together a range of stakeholders to achieve TZD in eight emphasis areas: aging road users; bicyclists and pedestrians; impaired driving; infrastructure – rural and urban; motorcyclists; occupant protection; young drivers; and data.

To provide an up-to-date analysis of safety, every year CDOT publishes the Colorado Integrated Safety Plan (ISP). The ISP identifies the state's goals, objectives, and strategies for improving traffic safety. The plan presents different funding sources, the amounts allocated to each CDOT region, and potential projects/project types that could be funded. Every year CDOT studies the crash data, including number and severity, and further refines existing strategies to reduce and mitigate future crashes.

One major source of state funding for safety improvements is the Funding Advancements for Surface Transportation and Economic Recovery (FASTER) Road Safety Fund, which was approved by voters in 2009. This source of funding has been used throughout the region to enhance the safety of the regional transportation system. Safety projects include pavement resurfacing and culvert repairs, variable messaging signs, and bicycle-pedestrian facilities.

¹ Colorado Strategic Highway Safety Plan, CDOT, October 2014. <https://www.codot.gov/safety/safety-data-sources-information/safety-plans/colorado-strategic-highway-safety-plan> Accessed June 10, 2019.

Within the region, the State is leading efforts on the North I-25 corridor and the US85 corridor to improve safety via Traffic Incident Management (TIM). The purpose of TIM is to detect and remove traffic incidents and restore traffic capacity as soon as possible through a planned and coordinated effort. TIM activities are typically categorized into five overlapping functional areas:

- 1. Detection and Verification:** the determination that an incident of some type has occurred, and the determination of the precise location and nature of the incident.
- 2. Traveler Information:** The communication of incident related information to motorists who are at the scene of the incident, approaching the scene of the incident, or not yet departed from work, home, or other location.
- 3. Response:** The activation of a “planned” strategy for the safe and rapid deployment of the most appropriate personnel and resources to the incident scene.
- 4. Scene Management and Traffic Control:** the coordination and management of resources and activities at or near the incident scene, including personnel, equipment, and communication links and the process of managing vehicular traffic around the scene of the incident.
- 5. Quick Clearance and Recovery²:** the safe and timely removal of a vehicle, wreckage, debris, or spilled material from the roadway

² Best Practices in Traffic Incident Management. U.S. Department of Transportation. Federal Highway Administration. Emergency Transportation Operations. September 2010. <https://ops.fhwa.dot.gov/publications/fhwahop10050x/index.htm> Accessed 6/10/19.

and the restoration of the roadway to its full capacity.

The I-25 TIM effort led by CDOT covers I-25 from SH7 to the Wyoming State Line. The [I-25 Traffic Incident Management Plan \(TIMP\)](#), developed in 2012, guides the TIM effort and was developed with stakeholder participation from nine fire districts, 12 law enforcement agencies, 12 cities and towns, three counties, CDOT, and WYDOT. The Plan emphasizes the need to create relationships between agencies and conversations between responders so there is a consistent and coordinated effort at the scene of an incident. To facilitate a continuing dialogue about best practices, CDOT holds regular Standing Program Management Team (SPMT) meetings and TIM trainings to enhance communication and improve TIM implementation on I-25.

The US85 TIM effort, which began in 2018, covers US85 from SH7 to the Wyoming State Line. CDOT is finalizing the Plan in 2019 with collaboration from law enforcement, fire districts, emergency management, public works, railroads, and other local agencies.

Moving Forward

Federal transportation planning guidelines promote safer transportation systems for all users. Colorado transportation planning guidelines promote TZD, a program the NFRMPO supports. As the region moves forward, the NFRMPO and local jurisdictions should work together to study safety issues in depth, promote coordination, and provide education opportunities. Specifically, recommendations to improve safety within the region could include:

- Inventory safety procedures in each jurisdiction to understand how a regional safety program could operate. Continue to study and address the safety needs within EJ areas.
- Study high-risk travel corridors for potential projects to improve safety, such as operational or capacity improvements on I-25.
- Promote coordination between the NFRMPO, jurisdictions, CDOT, FHWA, FTA, and other agencies to ensure increased safety as a consideration for road, transit, and bicycle and pedestrian transportation projects. Projects chosen should implement the 2045 GOPMT identified in **Chapter 2-3**.
- Facilitate coordinated emergency responses through incident management. Ongoing efforts such as the [I-25 Transportation Incident Management Plan](#) and [US85 Transportation Incident Management Plan](#) bring a wide range of organizations together to promote coordination at incident locations, improving safety and operations.
- Explore educational programs like OLI to ensure the public understands how to stay safe near railroad tracks.

C. Congestion Management Process (CMP)

The safety of the transportation network is closely related to congestion, as congestion is one of the major contributors to crashes within the region while, in turn, crashes are one of the major contributors to congestion. Congestion is defined as the build-up of vehicles on certain portions of the transportation system resulting in travel speeds that are slower than “free flow” speeds.³ To address congestion, the region uses the systematic process identified in the Congestion Management Process (CMP). The CMP is updated with the same frequency as the RTP and was most recently updated in 2019. The 2019 CMP establishes a performance-based approach to address congestion within the region and integrates with the entire metropolitan planning process.

One of the major functions of the CMP is to guide the project selection process for the Transportation Improvement Program (TIP). As federally required, any project proposed for inclusion in the TIP that adds general-purpose lanes must demonstrate

demand and operational management strategies are insufficient to satisfy the need for additional capacity unless the project addresses an established bottleneck or is a safety improvement. If a roadway expansion projects is deemed necessary, the CMP must identify all regional demand and operational management strategies to maintain the functional integrity and safety of the project into the future.

The 2019 CMP incorporates the congestion-related elements of the 2045 GOPMT, including the eight performance measures identified in **Table X-X**. Half of the measures directly measure congestion, while the other half address factors that influence congestion and are considered indirect measures of congestion.

The 2019 CMP identifies congested RSCs using the three segment-level direct measures of congestion, including TTI, TTR, and TTTR. The congested RSCs are identified in **Figure X-X**.

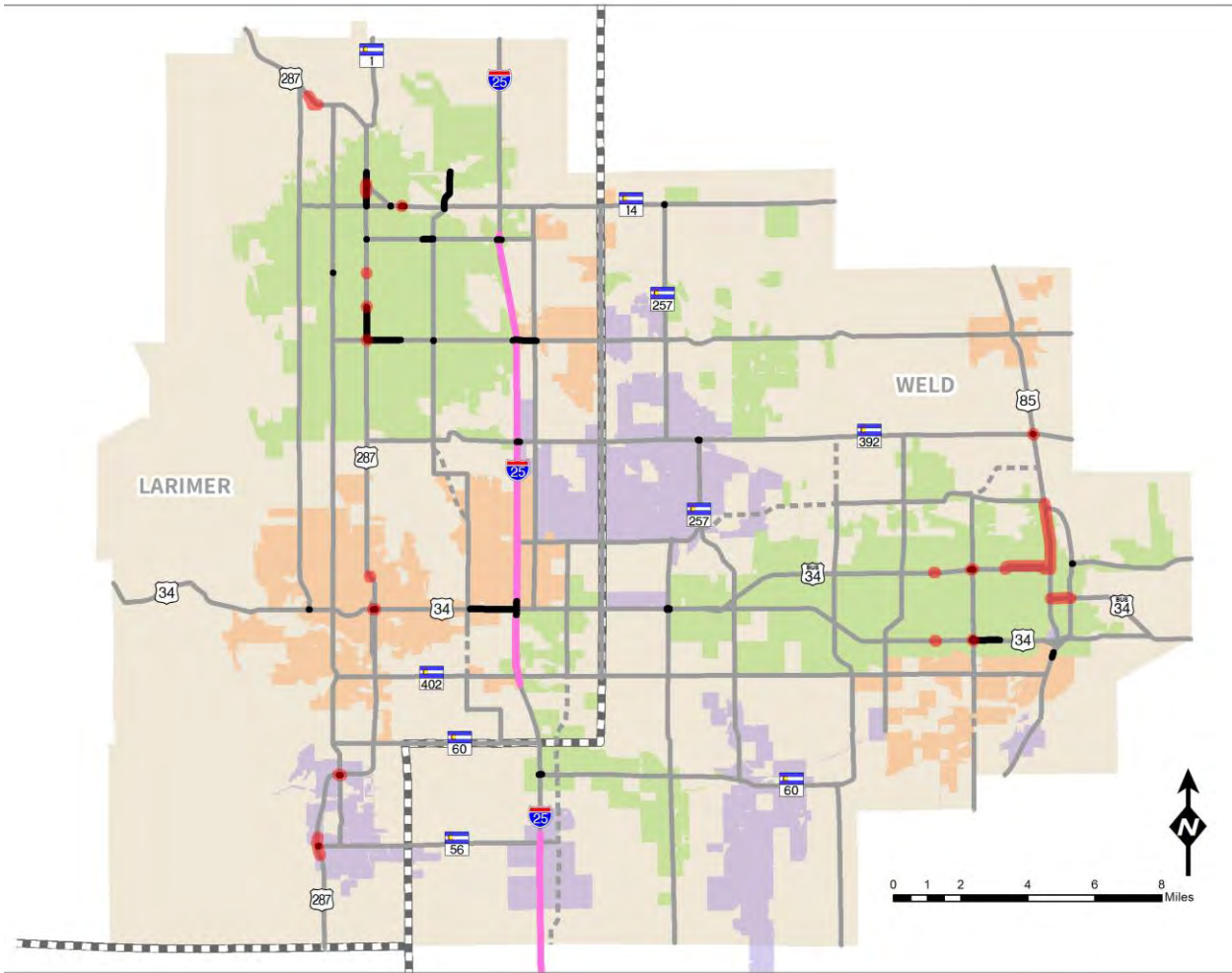
³ Traffic Congestion and Reliability: Trends and Advanced Strategies for Congestion Mitigation. FHWA Office of Operations. 12.4.2013. Accessed 3/29/19.

https://ops.fhwa.dot.gov/congestion_report/executive_summary.htm

Table X-1. CMP Performance Measures

CMP Performance Measure	Description	Measure Type
Travel Time Index (TTI)	Ratio of average peak travel time to an off-peak (free-flow) standard. A value of 1.5 indicates that the average peak travel time is 50% longer than off-peak travel times.	Direct, Segment-level
Vehicle Miles Traveled (VMT) per Capita	Miles traveled by vehicles in a specified region over a specified time period. Calculated per person for all trips or for specific destinations including home, work, commercial, etc.	Direct, Regional-level
Travel Time Reliability (TTR)	Measures non-recurring delay for all vehicles by comparing the 80 th percentile travel time to the average (50 th percentile) travel time. A value of 1.5 or higher indicates the segment is not reliable. A corridor may be congested, but reliable if the congestion is consistent.	Direct, Segment-level
Truck Travel Time Reliability (TTTR)	Measures non-recurring delay for trucks by comparing the 95 th percentile travel time to the average (50 th percentile) travel time. A value of 1.5 or higher is considered unreliable.	Direct, Segment-level
Number of Crashes	The number of collisions involving one or more vehicles on public roads.	Indirect, Regional-level
Transit Ridership per Capita	The number of unlinked weekday trips per resident within each provider's service area. Measuring per capita helps account for population growth.	Indirect, Regional-level
Percent of non-Single Occupant Vehicle (SOV) commute trips	Percent of all commute trips completed by any mode other than SOV, including by transit, bicycle, walking, or carpooling.	Indirect, Regional-level
Percent NHS miles covered by fiber	Percent of NHS miles with fiber-optic cables installed and used for transportation management purposes.	Indirect, Regional-level

Figure X-X: Congested Regionally Significant Corridors



Legend

- RSC - Existing
- - - RSC - Proposed
- TTI >= 1.5
- TTTR >= 1.5
- TTR >= 1.5
- County Boundary
- NFRMPO Boundary

May 2019
Sources: CDOT, NFRMPO



Strategies to manage congestion are identified in the 2019 CMP and are categorized into six Tiers, ranked generally by efficacy of mitigating congestion. The strategies serve as a starting point for identifying potential projects oriented at reducing congestion, where appropriate, within the region's transportation system.

- **Tier 1:** Reducing trip generation and shortening trips
- **Tier 2:** Encouraging shift to alternative modes of transportation

D. Hazards

The North Front Range region is susceptible to a wide range of natural hazards, including snowy and icy road conditions, wildfires, flooding, tornadoes, high winds, hail, and more. Each year parts of the region receives an average up to 47 inches of snow, which can stick to roads and create dangerous driving conditions. Heavy flooding can cause significant damage to transportation infrastructure and strain vulnerable parts of the system. The 2013 flood alone resulted in \$4B in damage to roads, bridges, and other infrastructure and property across the state, including \$280M on US34, and has taken years to replace or repair.

Communities laying within or near designated floodplains are most susceptible to flood risks. As shown in **Figure X-X**, the majority of NFRMPO communities are located near 500-year flood plains. These communities received heavy flooding in 2013.

Wildfires within the region may pose a significant risk to people and property, but even those

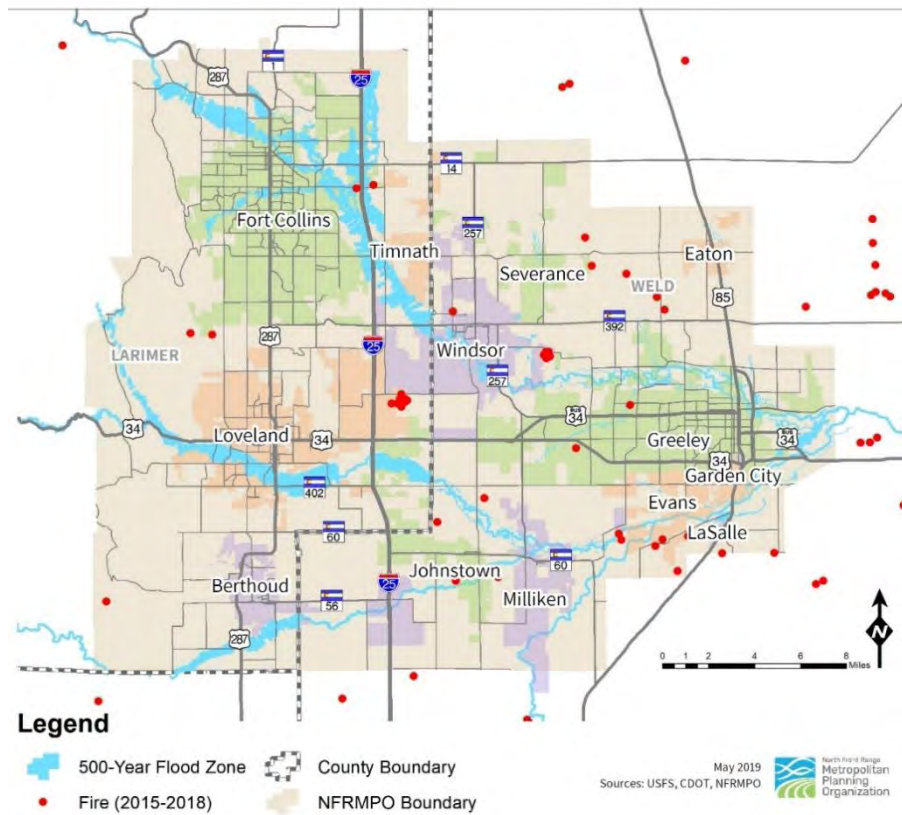
- **Tier 3:** Increasing vehicle occupancy and shifting travel times
- **Tier 4:** Improving roadway operations without expansion, including ITS.
- **Tier 5:** Traffic Incident Management (TIM)
- **Tier 6:** Roadway capacity

Effectively managing and even mitigating congestion in the North Front Range will require a multi-level, multi-jurisdictional approach. The 2019 CMP identifies recommendations, entities responsible for implementation, and possible funding sources for addressing congestion in the region.

outside of the region can have a significant impact on our air quality. Wildfires across the West during the summer months in 2018 significantly increased the concentration of particulate matter (PM) in the air. Increased concentrations of PM may cause or exacerbate respiratory health problems and may reduce visibility. **Figure X-X** shows the location of wildfires between 2015 and 2018 in addition to the 500-year flood zones in Larimer and Weld counties.

Mitigation and response to hazard like snowstorms occurs operationally at the state and local level. Local municipalities with a snow removal process prioritize their street networks, giving highest priorities to emergency routes, such as routes connecting hospitals, fire stations, police stations, and rescue squad units. Second priority is given to streets which carry the highest traffic volumes, followed by schools and bus routes. Residential streets are typically not plowed, but intersections may be sanded.

Figure X-X: 500-Year Flood Zones and Fire Locations (2015 – 2018)



Response

Advanced Traveler Information Systems (ATIS) that communicate information to the public via smartphones, roadside infrastructure, or other means, are crucial to helping drivers make informed decisions when hazards are imminent. Larimer and Weld counties each have an Office of Emergency Management (OEM) tasked with planning for and responding to hazards and other emergencies, as well helping communities recover from and mitigate hazards. Several other NFRMPO communities have similar offices, departments, or designated professionals.

Traffic Incident Management (TIM) planning efforts between CDOT and local planning and law enforcement partners along the I-25 and US85 corridors have identified both local and

regional detours for closures due to various factors and have strengthened partnerships for safer and more coordinated emergency response.

Recovery

Recovering from hazardous events can be a long, but ultimately rewarding process. Events such as floods often highlight the criticality and vulnerability of certain facilities and services throughout the transportation network. Recovery efforts are a chance to address weaknesses and mitigate impacts from the next event. Following the 2013 floods, several agencies have worked together to recover and improve the resilience of the transportation system. CDOT led the charge in repairing and improving US34 through the Big Thompson

Canyon to help it withstand future floods. As part of the North I-25 expansion, CDOT will also raise the North I-25 bridges over the Cache La Poudre River to prevent future closures due to flooding.

This multifaceted effort will also allow the Poudre River Trail to connect Timnath and Fort Collins under the interstate.



The images above show the immediate aftermath (left) of the 2013 floods on US34 in Big Thompson, as well as the recovery and mitigation efforts to realign the roadway out of the floodway (right). The reconstruction was named Best of the Best out of 820 construction projects nationwide by Engineering New Record. (Image credit: CDOT)

Mitigation

Communities such as Milliken, situated at the confluence of the Little Thompson and Big Thompson Rivers, partnered with the Colorado Department of Local Affairs (DOLA) and other stakeholders to revise their Land Use Code to ensure future development is resilient to natural hazards such as flooding, fires,

Planning partners are working through their transportation planning processes to identify facilities that are both critical to transportation and vulnerable to natural hazards. Currently, the NFRMPO, local agencies, and industry partners are working together with CDOT to build on the [2019 Truck Parking Assessment](#), in part to identify opportunities to address truck parking capacity and communication in emergency events such as the March 2019 bomb cyclone

that hit Colorado's front range, as well as other high wind and snow events that frequent the NFRMPO region and southern Wyoming.

In March 2019, CDOT Region 4 completed the [US34 PEL Corridor Operational Resiliency Analysis](#). The analysis identified short-term and long-term risks to US34's operational functionality and provides resiliency recommendations for various threats posed by impending growth. This type of analysis lays the groundwork for improved collaboration between public and private planning partners working to address both natural and manmade threats.

Hazard mitigation plans are required by FEMA as a condition for receiving certain disaster

recovery and mitigation funding. Larimer⁴ and Weld⁵ counties each have multi-jurisdictional

hazard mitigation plans prepared with extensive public and private stakeholder input.

E. Security

As required by federal legislation, the NFRMPO has identified its role in regional transportation security. The NFRMPO acts in an informational capacity regarding security of the transportation system in the region. The NFRMPO works with local agencies to ensure information is up-to-date and to make connections or hold trainings when necessary.

USDOT defines a transportation security incident as one resulting in a significant loss of life, environmental damage, transportation system disruption, or economic disruption in a

particular area. Examples of environmental security issues identified in the regional Hazard Mitigation Plans (HMP) include biological hazards; earthquakes; extreme weather; fires; floods, hazmat; and tornadoes. Overall transportation security incidents may include trespassing, vandalism, or terrorism.

This Section addresses how local agencies prepare for the aforementioned incidents and risks depending on the services they provide. Websites or other contact information are provided for up-to-date information.

Park-n-Rides (PNR)

Colorado Department of Transportation (CDOT)

- CDOT-maintained PNR locations in the NFRMPO region include: Harmony Transfer Center, SH392 PNR, US34 PNR, SH402 PNR, SH60 PNR, SH56 PNR, and Promontory PNR west of Greeley
- Each of the CDOT-maintained PNR locations has surveillance cameras with the exception of the SH56 PNR location
- Law enforcement officers regularly drive through the PNR lots
- Currently, there is limited parking in many of the lots along I-25

Website: <https://www.codot.gov/travel/parknride>

⁴ [2016 Larimer County Multi-Jurisdictional Hazard Mitigation Plan](#)

⁵ [2016 Weld County Multi-Jurisdictional Hazard Mitigation Plan](#)

Transit Agencies

Berthoud Area Transportation System (BATS)

- Transit Safety and Security Plan (2003)
 - Driver Selection, Driver Training, Vehicle Maintenance, Drug and Alcohol Education Programs, Safety Data
- System Safety and Emergency Preparedness Plan (SSEPP)
 - Training policy, security and emergency protocol, contacts, and other preparedness guidelines. It is modeled after the CDOT prototype.
- Drivers for BATS have a complete background check performed, they must pass a drug and alcohol screening and have the two previous years drug and alcohol records checked. Motor vehicle records are checked. Training on policies and procedures lasts approximately two weeks. Each driver has a cell phone for emergency purposes.
- Vehicles have first aid kits and a fire extinguisher
- Vehicles do not have cameras installed

Contact phone: (970) 344-5816

Website: <https://www.berthoud.org/departments/berthoud-area-transportation-system-bats>

Bustang (CDOT)

- Operated by Ace Express Coaches under contract to CDOT
- Driver training involves a multi-week training program that covers the Occupational Safety and Health Administration (OSHA) guidelines; Federal Motor Carrier Safety Administration Regulations (FMCSA); Customer Service; Hours of Service; Drug and Alcohol Screening; Passenger Safety; Vehicle Inspection; Fundamentals of Defensive Driving
- Drivers required to take annual qualification and recertification tests to maintain driving skills
- Vehicle safety includes required routine maintenance on all buses
- Safety inspections are performed whenever a vehicle is being maintained
 - Drivers inspect vehicles before departing Ace Express Coaches Line facilities
- Each bus has eight onboard cameras that record a week of video and can be monitored in real time using wireless internet (Wi-Fi) access

Contact phone: 800-900-3011

Website: <https://ridebustang.com/>

City of Loveland Transit (COLT)

- Emergency Operations and Security Plan (2007)
- Safety and security protocol based on Loveland Office of Emergency Management input and feedback
- All buses have a six-camera security system on-board
- The North Transfer Point is monitored by the Loveland Police Department
- Drivers prescreened before employment to verify they carry a Class B CDL or higher with proper endorsements, pass a background check, pass a pre-employment drug screen, and must have a clean driving record
- Drivers required to complete a defensive driving course; be certified in both CPR/AED and First Aid; attend all safety-related meetings and trainings required by the City of Loveland; submit to random testing for both drugs and alcohol; and have their driving records monitored

Contact Phone: (970) 962-2700

Website: <http://cityofloveland.org/transit>

Greeley Evans Transit (GET)

- Safety and Security Plan (2015), technical aspects updated annually
- GET 5-10 Year Strategic Plan (2016)
- New driver training
 - Full tour of the facilities; and an explanation of procedures, the various transit shifts, chain of command, the pre-post trip log book, which is kept for a year, work related timekeeping, dress code; bulletin boards; the transit time book; safety board, a variety of informational training videos, sensitivity training handouts, drug/alcohol training, and transit communication codes; and the Standard Operating Procedures
 - Skills course to test driving skills, tablet training using RouteMatch, an automatic vehicle locator (AVL) system, fare collection system, wheelchair securement training, and mechanically assisted and manual wheelchair lift operation
- Drivers must have final supervisor approval before they begin service
- Background and driving checks performed in the initial hiring process
- Drivers must have current, personal automobile insurance in good standing in addition to insurance with GET for the transit vehicles
- Each year drivers are required to attend an eight-hour class on defensive driving techniques
- Drivers have a supervisor ride along at least twice a year. If a driver is involved in an incident, a supervisor will ride along on the next workday of operation
- GET Regional Transportation Center (RTC) facility has surveillance cameras, double lock

doors, and proximity doors for identification cards for limited after-hours security access

- All GET buses have surveillance cameras on board. There are four to five cameras on

each vehicle and the video from each bus is downloaded every night. New fixed-route buses have eight cameras.

Contact Phone: (970) 350-9287

Website: <https://greeleyevanstransit.com>

Transfort

- System Safety Program Plan (SSPP) – 2018
 - Outlines hazard management; contract management; bus rapid transit (BRT) guideway access management; accident/incident notification, investigation, and reporting; maintenance audits and inspections; training and certifications; emergency response procedures; employee safety program; procurement; compressed natural gas fuels (CNG) and safety; security; and an internal safety audit process
- New driver training consists of six to eight weeks of progressive training. Conditions of employment, defensive driving, customer service, emergency and security, and service operating policies are covered.
- Continuing education is a focus of the Transfort training programs
- Conditions of Employment Section lists Equal Employment Opportunity (EEO), Sexual Harassment, and Substance Abuse Rules that must be followed by all employees
- A Citywide ID program is in place for City employees, non-public facility visitors, and contractors
- Transfort-specific transit security officers have been commissioned by the Fort Collins Chief of Police
- All Transfort buses, including MAX and FLEX, have cameras on board
- All MAX bus stations and stops have security cameras and are well lit
- Transfort installed two security gates at the dispatch facility
- Transfort Operations Manual contains sections on the Severe Weather and Emergency Event Plan and the Safe Operator Plan

Contact Phone: (970) 221-6620

Website: <http://ridetransfort.com/>

Volunteer Transportation Providers

Senior Alternatives In Transportation (SAINT)

- Volunteer screening for SAINT includes: a motor vehicle driver background check; a criminal background check; confirmation of their personal automobile insurance; and an in-person interview in the SAINT office
- All vehicles involved in the SAINT program are owned by the volunteer
- No cameras or other special equipment in the vehicles
- No SAINT ‘road supervisor’, but clients have been willing to let SAINT staff know how the drivers are performing

Contact Phone: (970) 223-8604

Website: <http://www.saintvolunteertransportation.org/>

60+ Ride

- Two weeks advance notice is required to ensure the highest rate of ride fulfillment possible
- 60+ Ride also has one minivan, driven by staff, which provides transportation to non-medical appointments in the Greeley-Evans area Monday through Friday
- Drivers are subject to background checks, including from the Colorado Bureau of Investigations and individual counties

Contact Phone: (970) 352-9348

Website: <https://SRSweld.com>

RAFT

- Vehicles used in this program are personal automobiles driven by volunteers
- There are no cameras in the volunteer vehicles or in the van
- The volunteer driver requirements for RAFT include: having a current, valid driver’s license; a clean, safe and dependable vehicle; compliance with speed limit and traffic laws; authorization to obtain a copy of their driving record; a background check; must be 18 years of age or older, and if requested will submit to a drug test.
- Volunteer drivers must maintain the minimum automobile insurance required by Colorado State Law and proof of insurance must be provided to RAFT
- First Aid classes and defensive driving courses are not required, but recommended, reimbursement is offered to volunteers who complete either training.

Contact Phone: (970) 532-0808

Website: <http://berthoudraft.org/>

Vanpool Service

VanGo™ Vanpool Services

- System Security and Emergency Preparedness Plan (SSEPP)
 - Ensures security and emergency preparedness are addressed during all phases of system operation, including the hiring and training of agency personnel; the procurement and maintenance of agency equipment; the development of agency policies, rules, and procedures; and coordination with local public safety and community emergency planning agencies
 - Promotes analysis tools and methodologies to encourage safe system operations through the identification, evaluation, and resolution of threats and vulnerabilities, and the ongoing assessment of agency capabilities and readiness
 - Creates a culture which supports employee safety and security and safe system operations (during normal and emergency conditions) through motivated rules and procedures and the appropriate use and operation of equipment
- Annual safety meeting where vanpoolers have access to CDOT presentations on construction updates and operating in cone zones and presentations on a selected driving related topic (e.g. backing, safe driving distance, managing road rage)
- VanGo™ drivers and riders each have their own required application before they can begin using the service
- Drivers are required to undergo driving record checks and complete an online defensive driving course
- VanGo™ vehicles are based out of three locations: Fort Collins, Loveland, and Greeley Maintenance facilities
 - Each facility provides all the emergency equipment for the vans
 - Items in the vans include a fire extinguisher, emergency blankets, First Aid kit, snow shovel, reflective traffic triangles, and information on accident response
- There are no security cameras in the VanGo™ vans.

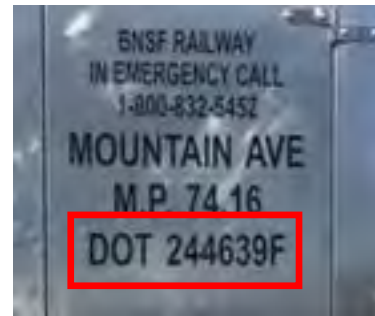
Contact Phone: (800) 332-0950

Website: <https://vangovanpools.org/>

Railroad Security

To identify incident locations on the railway system, the following information is needed when contacting the appropriate railroad:

- Street/highway name;
- Nearest city/town;
- Railroad mile post (MP);
- Railroad subdivision; and
- Crossing/DOT Number (if available)



BNSF Railway

- Fully certified state law enforcement officers who carry full police and arrest powers
 - Conduct proactive, uniformed patrol to combat trespassing and cargo theft
 - K-9 units and the BNSF Police Canine team, which allow the BNSF Police to expedite train searches, discourage trespassers, and detect explosives
- Member of the Customs-Trade Partnership Against Terrorism (C-TPAT), which is a U.S. Customs Service and trade community endeavor to develop, enhance, and maintain effective security processes throughout the global supply chain
- Hazardous materials receive special identification and handling including waybill preparation, track and train list inventories, in-train placement checks, automatically updated train list entries and emergency response information
- BNSF tracks all sensitive shipments
- BNSF Community Awareness and Emergency Response Code
 - Developed by BNSF Railway through its work with multiple local agencies across the country
- First Responder Training at their Security and Emergency Response Training Center in Pueblo, Colorado
- ON GUARD is a BNSF employee program which encourages employees to report suspicious activities, individuals, or trespassers to BNSF's Resource Operations Call Center (ROCC)
- [Citizens United for Rail Security](#) (CRS) program encourages interested citizens and railway fans to participate in BNSF security training

Contact phone: (800) 795-2673

Contact website: www.bnsf.com

Union Pacific Railroad (UPRR)

- Police department with more than 200 Special Agents across their system
- Special Agents are certified state law enforcement officers who can arrest both on and off railroad property. Special Agents investigate trespassing, theft, threats of terrorism, and derailments
- K-9 unit with officers who have access to surveillance technology and investigative techniques in addition to relationships with local, state, and federal law enforcement agencies.
- UPRR partners with the U.S. Customs and Border Protection, U.S. Coast Guard, the Federal Bureau of Investigation, Central Intelligence Agency, the Department of Homeland Security, and the Transportation Security Administration on security efforts
- Member of the C-TPAT.
- Provides a surveillance network which can report the location and movement of hazardous cargo within seconds
- In partnership with constant track checks, UPRR can pinpoint and manage the locations of the trains to ensure products are being shipped safely and efficiently.
- Virtual-fencing pilot program around their facilities that triggers an alarm to the Response management Communication Center
- Developed the Train Rider Identification Detection System (TriDS), which can detect unauthorized train riders.

Contact website: www.up.com

Contact phone: (888) 870-8777

Great Western Railway of Colorado (GWR)

- Customer Safety Handbook (2018)
 - Provides recommendations, contact information, and explanations of what to do in an emergency.

Contact website: www.omnitrax.com

Contact phone: (303) 398-4500

Airport Transportation Security

Greeley-Weld County Airport

- Access controlled by computerized access control system
- Gates restrict vehicular access at key locations around the airport
- [Airport Security Plan](#) outlines procedures and practices for authorized access to the airport
- Greeley Police Department has law enforcement jurisdiction at the airport
- Security cameras provide view of the terminal building aircraft parking apron

Contact Website: <http://www.gxy.net/>

Contact Phone: (970) 336-3000

Northern Colorado Regional Airport

- Security operations at the Northern Colorado Regional Airport are conducted by the Transportation Security Administration (TSA). The same level of security inspections, regulations, and restrictions used at major airports are in place at the Fort Collins-Loveland Airport.
- Technology to assist aircrafts land safely include full ILS, VOR/DME, RNAV, CTAF: 122.7, and AWOS: 135.075
- The Remote Air Traffic Control Tower is the first FAA approved version in the US, expected to be active at the end of May 2019, which will convert the airport to Class D airspace at that time
- Airport property uses security gates which everyone who wishes to maintain access must submit to TSA's requirements for badging which includes an application with background check.

Contact Website: <http://www.fortloveair.com/>

Contact Phone: (970) 962-2850

Emergency Management

- [Larimer County Multi-Jurisdictional Hazard Mitigation Plan](#) (2016)
 - Partnership with the towns of Berthoud, Estes Park, Johnstown, Timnath, Wellington, and Windsor; the cities of Fort Collins and Loveland; and other special districts and organizations
 - Submitted to the State of Colorado, Division of Homeland Security and Emergency Management, and the Federal Emergency Management Agency
 - Updates mitigation actions, especially at the local community level.
- [Weld County Multi-Jurisdictional Hazard Mitigation Plan](#) (2016)
 - Partnership with the towns of Ault, Erie, Firestone, Frederick, Garden City, Gilcrest, Hudson, Keenesburg, Kersey, LaSalle, Mead, Milliken, Pierce, Platteville, Severance, and Windsor; the cities of Brighton, Dacono, Evans, Fort Lupton, and Greeley; as well as other special districts and organizations
 - Submitted to the State of Colorado, Division of Homeland Security and Emergency Management, and the Federal Emergency Management Agency
 - Major goal to guide development away from high hazard areas and to improve hazard mapping to communicate risk
 - Focus on building partnerships and county-wide hazard mitigation strategy
- [READYColorado](#)
 - Funded using a grant from the Department of Homeland Security (DHS) to enhance preparedness and response capabilities
 - Provides assistance in making a personal plan, a one-stop shop for local emergencies, and a list of tools residents can use to prepare for and mitigate the risks from natural disasters and emergencies. More information about the program can be found at www.readycolorado.com.

Vulnerability Assessment

FEMA defines vulnerability as “any weakness that can be exploited by an aggressor”.⁶ To identify vulnerabilities, FEMA uses a multidisciplinary team including engineers, architects, security specialists, and subject matter experts. The team reviews and coordinates building plans, utilities, emergency plans, and interview schedules. Using this information, FEMA is able to assess potential

damages and impacts on local buildings and transportation networks if an event were to occur. The analysis identifies vulnerabilities in the critical functions and critical infrastructure using a Vulnerability Assessment Checklist that rates them on a scale from “very low” (no weaknesses) to “very high” (extremely susceptible).

⁶ http://www.fema.gov/pdf/plan/prevent/rms/155/e155_unit_iv.pdf



5

Implementation

This 2045 RTP sets the stage for transportation planning in the NFRMPO region for the next 25 years. While this is a long-term transportation plan, the climate of funding, projects, population, and employment are constantly evolving and changing. The need to update or amend the 2045 RTP may arise.

A. RTP Amendment Process

The NFRMPO updates the RTP every four years, as required by federal law for all air quality nonattainment and maintenance areas. However, between RTP updates, amendments to the RTP may be necessary. Amendments can be prompted by new regionally significant projects, as defined in **Chapter 5, Section A** of this RTP, or by substantially modified project scopes. A Plan Amendment could also be necessary if substantial changes in financial resources occur, which were not anticipated during this 2045 RTP development process. A description of RTP Amendments is included in **Table 5-1**.

To initiate a plan amendment, a local agency, Colorado Department of Transportation (CDOT) or the federal government provides information to the NFRMPO outlining the specific amendment request along with a clear

justification for the amendment and/or the source of the new funding. NFRMPO staff review the request and determine how the request should be processed, either as a Modification to the RTP or a full Amendment to the RTP.

The Technical Advisory Committee (TAC) and NFRMPO Planning Council approve all amendments prior to submission to CDOT and the Federal Highway Administration (FHWA). If the Amendment requires an air quality conformity determination, it must complete that process prior to the Plan Amendment being adopted. Generally, a call for RTP Amendments is held once a year. If no Amendment requests are received, the RTP is not amended and no action by Planning Council, FHWA, or EPA is required.

Table **Error! No text of specified style in document.**-1 RTP Amendment Description

Update Type	Update Description	Changes Prompting an Update
Administrative Modification to the RTP	Minor editorial revisions to RTP language, maps, graphics, or project information. These are changes that can be made by NFRMPO staff and do not require Planning Council Action; however, they do require the approval of the NFRMPO Executive Director.	<ul style="list-style-type: none"> • Project Name Change • Editorial revisions to the RTP text • Changes/clarifications to RTP maps or graphics • Minor text changes to the project descriptions (including spelling changes, minor project description changes, etc.)
Full Amendment to the RTP	Changes to a regionally significant project as defined in Chapter 5, Section A of this RTP requires Planning Council Action. Additionally, these changes necessitate air quality conformity analysis and a 30-day public comment period for both the air quality conformity analysis and the proposed Amendment.	<ul style="list-style-type: none"> • Addition of a Regionally Significant Project • Deletion of a Project • Additional Funds • Project scope changes • Adding a Phase to an existing project in the RTP • Advancing a project start date beyond the conformity band it was in when the RTP was originally adopted.

B. Unified Planning Work Program (UPWP)

The [Unified Planning Work Program \(UPWP\)](#) guides the transportation planning work for the NFRMPO. This document identifies tasks which specify work products and funding sources to the NFRMPO, its member governments, and to CDOT.

Responsibility for carrying out the 3C planning process rests jointly with the NFRMPO, the three local transit agencies, and CDOT, as described in the 2018 Memorandum of Agreement (MOA) between the five agencies. The 3C process in the NFRMPO area is designed to provide for

centralized administration, combined with maximum participation and direction from local governments.

Each calendar year, beginning in February, a proposed budget for UPWP for the fiscal year commencing the following October 1st is prepared in coordination with the Technical Advisory Committee (TAC) and NFRMPO staff, along with input from CDOT’s Division of Transportation Development (DTD) and CDOT Region 4 representatives. Once completed, the UPWP budget is approved by the Finance

Committee of the NFRMPO Planning Council and the work tasks are approved the TAC. The budget includes tasks, proposed expenditures, and the funding sources. The Planning Council adopts the full UPWP in June through a formal resolution.

NFRMPO project expenditures may not exceed the UPWP budgeted totals. Any revisions which alter the total budgeted expenditures of any tasks must be approved by the Planning Council. Amendments between work tasks may be completed through an administrative amendment, to be formally incorporated into an amended UPWP.

C. Transportation Improvement Program (TIP)

The NFRMPO is responsible for the creation and adoption of a [Transportation Improvement Program \(TIP\)](#) for the region at least every four years. FHWA and Federal Transit Administration (FTA) determine if the TIP is consistent with the adopted RTP and if it was produced through the 3C transportation planning process. This requires the NFRMPO to produce and maintain a multi-year TIP, fiscally constrained by program and year. The *FY2020-2023 TIP* presents a four-year program of multi-modal projects using a combination of federal, state, and local funds, and identifies the type of improvement, the funding source(s), the sponsoring entity(ies), and an implementation schedule. Projects in the TIP must come from an approved RTP, follow the Congestion Management Process (CMP) outlined therein, provide all interested parties with a reasonable opportunity to provide comment on the proposed TIP, and within nonattainment areas, it must show conformity according to air quality budgets outlined in the Statewide Implementation Plan (SIP). The TIP is included without changes in the Statewide Transportation Improvement Program (STIP), developed by CDOT and approved by the Governor.

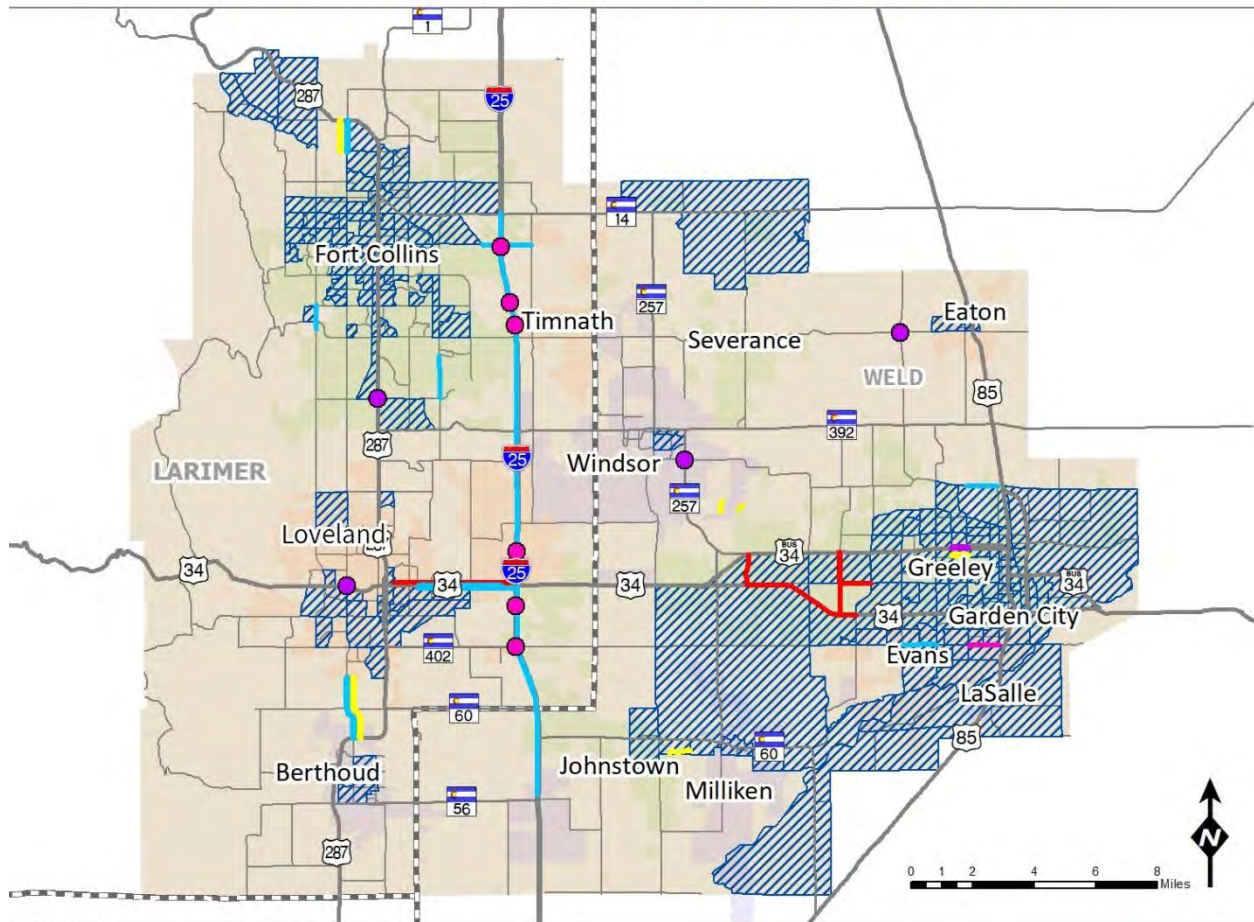
MAP-21 required, and the FAST Act carried forward, that the TIP include:

- To the maximum extent practicable, a description of the anticipated effect of the TIP toward achieving the performance targets established in the *2045 RTP*, linking investment priorities to those performance targets.
- A priority list of proposed federally supported projects and strategies to be carried out within each four-year period after the initial adoption of the TIP.
- A financial plan which demonstrates how the TIP can be implemented, indicating resources from public and private sources reasonably expected to be available to carry out the program, and identifying innovative financing techniques to finance projects, programs, and strategies.
- In air quality nonattainment and maintenance areas, the TIP shall give priority to timely implementation of Transportation Control Measures (TCMs) contained in the applicable SIP in accordance with the Environmental Protection Agency's (EPA) transportation conformity regulations.

Figure 12-1 shows the location of projects included in the FY2020-2023 TIP.

Figure 12-1: FY2020-2023 TIP Projects

FY20-23 TIP Individual Roadway and Bike/Ped Projects



Legend

- Bridge Reconstruction
- CNG Fueling Station
- Intersection Improvements
- Bike/Ped Facility
- Operation Improvements
- Pavement Improvements
- Roadway Widening
- Environmental Justice Areas
- County Boundary
- NFRMPO Boundary



March, 2019
Sources: CDOT, NFRMPO

D. Emerging Trends

The North Front Range region has experienced rapid growth in recent years, resulting in an area with a 2015 population of approximately 483,500. This growth is continuing, and population projections show by 2045, the North Front Range area population increase by nearly 83 percent. This population growth will place an even greater demand on the movement of people and goods on an already stressed and aging transportation system.

This population growth will occur in all age cohorts; however, households headed by the oldest cohort, those aged 65 years and older, will grow the fastest due to the area's popularity with retirees and the aging of the population nationwide. This cohort will grow from 10 percent of the population at 80,000 in 2015, to 17 percent of the population at just over 198,000 by 2045. The growth rate for all age cohorts is shown in **Figures 12-8 and 12-9**.

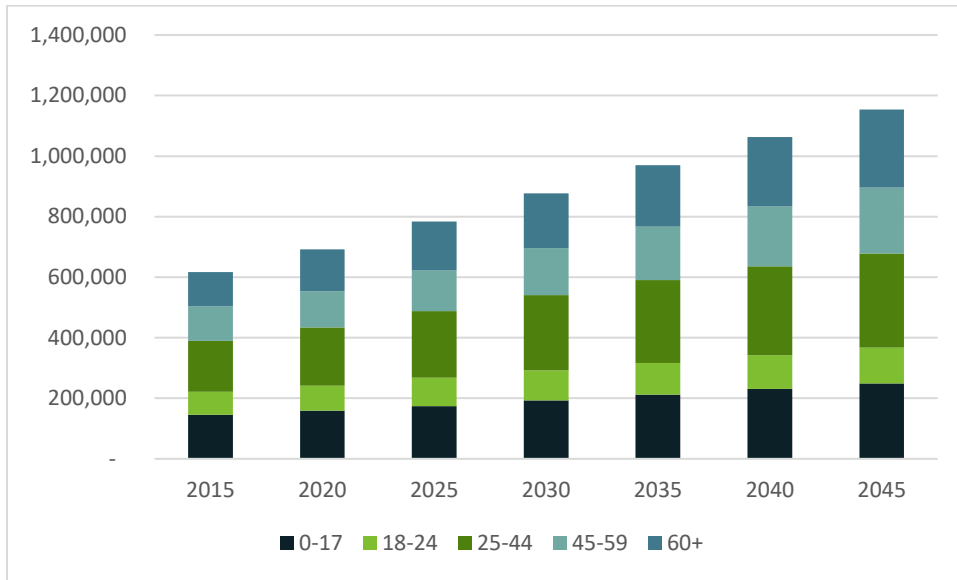
Knowing the age group growth projection rates is important to the transportation planning process as it allows time to plan to better meet the specific transportation needs of the age

groups. Based on this projection, providing more transportation options for the senior population should be a priority in the region over the next 25 years. Future transportation trends the region should consider in future planning efforts could include, but are not limited to:

- Seniors needing transportation to medical appointments, the grocery store, and social events, etc.;
- A higher number of people commuting via bicycle, transit, or walking versus automobiles;
- Decreased transportation funding;
- Higher gas prices; and
- New and emerging transportation technologies, including self-driving automobiles.

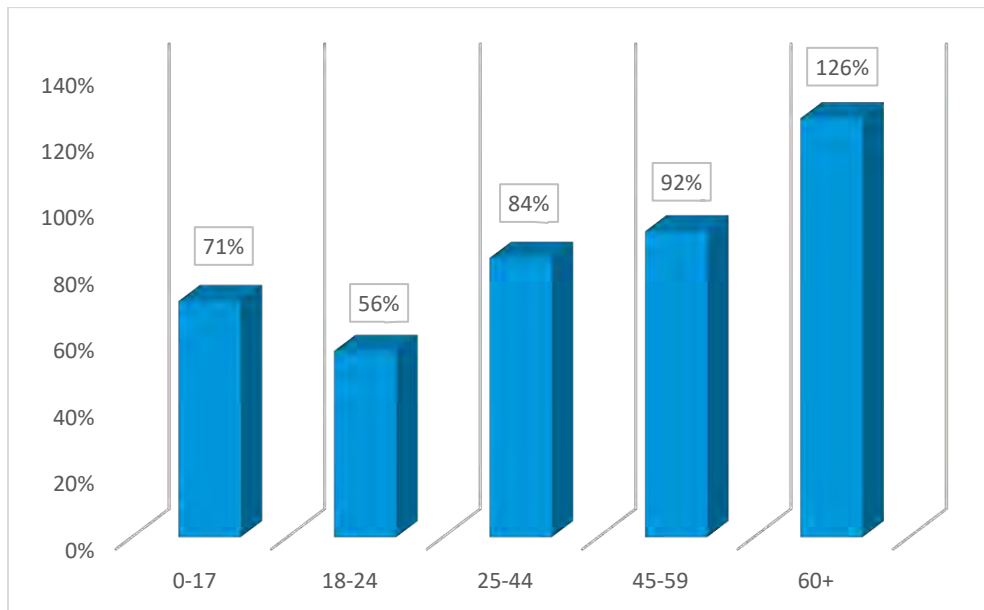
As the region moves toward 2040, these emerging trends will need to be factored into the transportation planning process and into the allocation of transportation funds to those projects providing the greatest benefit to the region's population.

Figure 12-9: Population Growth by Age Group, 2015-2045



Source: Department of Local Affairs (DOLA) Population Projections, 2018

Figure 12-10: Growth Rate by Age Group, 2015-2045



Source: Department of Local Affairs (DOLA) Population Projections, 2018

E. Strategies

The North Front Range region has experienced rapid growth in recent years, resulting in an area with a 2015 population of approximately 483,000. This growth is continuing, and population projections show by 2045, the North Front Range area population will increase by 83 percent. This population growth will place an even greater demand on the movement of people and goods on an already stressed and aging transportation system.

This population growth will occur in all age cohorts; however, households headed by the oldest cohort, those aged 60 years and older, will grow the fastest due to the area's popularity with retirees. In all of Larimer and Weld counties, this cohort will grow from 18.4 percent of the population in 2015, to 22.3 percent of the population by 2045. This equates to a growth rate of over 21 percent, from 113,800 to over 257,513. Additionally, this cohort will increase more than four percent every year on average through 2045. This is over twice the growth rate for the group with the smallest gains, the 18-24 cohort. The average annual growth rate for all segments is shown in **Figures 12-8 and 12-9**.

Knowing the age group growth projection rates is important to the transportation planning

process as it allows time to plan to better meet the specific transportation needs of the age groups. Based on this projection, providing more transportation options for the senior population should be a priority in the region over the next 25 years. Future transportation trends the region should consider in future planning efforts could include, but are not limited to:

- Seniors needing transportation to medical appointments, the grocery store, and social events, etc.;
- A higher number of people commuting via bicycle, transit, or walking versus automobiles;
- Decreased transportation funding;
- Higher gas prices; and
- New and emerging transportation technologies, including self-driving automobiles.

As the region moves toward 2045, these emerging trends will need to be factored into the transportation planning process and into the allocation of transportation funds to those projects providing the greatest benefit to the region's population.

AGENDA ITEM SUMMARY (AIS)

North Front Range Transportation & Air Quality Technical Advisory Committee
(TAC)



Meeting Date	Agenda Item	Submitted By
June 19, 2019	<u>2045 Regional Transportation Plan (RTP) Draft</u> Scenarios Section	Medora Bornhoft
Objective/Request Action		
Staff is providing the Scenarios Section of the <u>2045 Regional Transportation Plan (RTP)</u> for TAC review and discussion.		<input type="checkbox"/> Report <input type="checkbox"/> Work Session <input checked="" type="checkbox"/> Discussion <input type="checkbox"/> Action
Key Points		
<ul style="list-style-type: none"> • MPO staff is developing the <u>2045 RTP</u>, scheduled for September 2019 Planning Council adoption. • The <u>2045 RTP</u> includes a long-term transportation vision for the region. • The DRAFT <u>2045 RTP</u> Scenarios Section for TAC member’s review is attached. • Comments are due to NFRMPO staff by 5:00 p.m. on July 3, 2019. 		
Committee Discussion		
This is the first time TAC will discuss this Section of the <u>2045 RTP</u> , but TAC and the Model Steering Team have discussed Land Use and Travel Demand scenarios previously.		
Supporting Information		
The RTP is a federally-mandated plan for MPOs and includes a long-term transportation vision for the region. The <u>2045 RTP</u> summarizes the existing transportation system: roadways, transit, bicycle and pedestrian infrastructure, the environment, and includes a fiscally-constrained corridor plan for the future.		
Advantages		
Providing the sections as they are drafted allows TAC to maximize their time and input in reviewing the <u>2045 RTP</u> chapters and sections. Staff will provide presentations on the changes to the RTP to summarize changes to assist TAC in their review.		
Disadvantages		
None noted.		
Analysis/Recommendation		
Staff requests TAC members review the portions of the <u>2045 RTP</u> Draft Sections applicable to their jurisdictions for accuracy and content.		
Attachments		
<ul style="list-style-type: none"> • Section 3-3: Plan Scenarios 		

3

Section 3

2045 Forecast and Scenarios



To plan for the future transportation system, it is important to forecast population and employment growth that will impact travel demand and to identify transportation improvements that could serve future demand. The NFRMPO developed the 2010 Land Use Allocation Model (LUAM) and the 2015 Regional Travel Demand Model (RTDM) to forecast land use and travel conditions through 2045. Both models were developed using the latest assumptions and identify expected future conditions in “baseline” scenarios for 2045 as well as alternative scenarios for 2045 that address the impacts of different policy choices.

A. Land Use Forecast and Scenarios

Two scenarios were developed using the 2010 LUAM, including the baseline scenario and the high-density scenario. The baseline scenario relies on the inputs provided by member agencies, while the high-density scenario artificially increases the maximum allowable densities in urban core areas to analyze the impact of increasing density beyond current expectations. Both scenarios rely on the regional forecast developed by the Colorado Department of Local Affairs (DOLA) which identifies household and employment control totals for the modeling area.

Regional Forecast

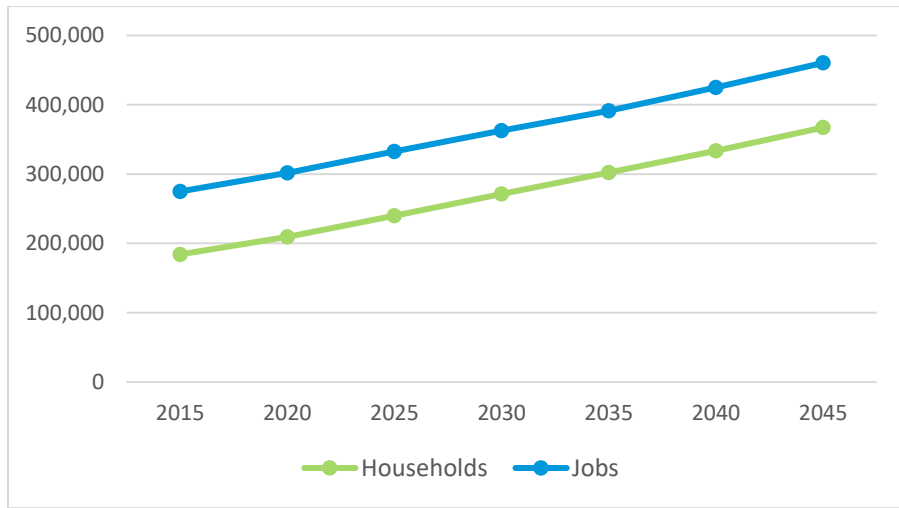
The region is forecasted to grow rapidly as shown in **Figure X-X**. In 2015, there were 184,150 households and 274,958 jobs. By 2045, it is expected the number of households will increase by 99 percent to 367,147, while the number of jobs will increase by 67 percent to 460,475. On an annual scale, households are expected to increase 2.3 percent per year and jobs are expected to increase 1.7 percent per year.

The NFRMPO LUAM allocates household and employment growth through the UrbanCanvas Block Model. UrbanCanvas is a data-driven, location-choice model designed to reflect the interdependencies of the real-estate market and the transportation system.¹ Control totals for the entire modeling area, **Figure X-X**, were developed by DOLA.

The model begins with a base year of 2010-11, and then uses information such as observed growth through 2013, recently constructed and committed developments, zoning and future land use density constraints, and the regional control totals to allocate households and jobs to Census Blocks in each year out to the horizon year 2045. In addition to forecasting the number of households and jobs, the model forecasts attributes including each household’s income, household size, number of workers, and auto ownership and each job’s industry type. The resulting forecasts provide input to the NFRMPO RTDM to project future travel volumes on roadways and transit ridership. Additional information on the control totals and development of the 2010 LUAM is available in the [2010 LUAM Technical Documentation](#).

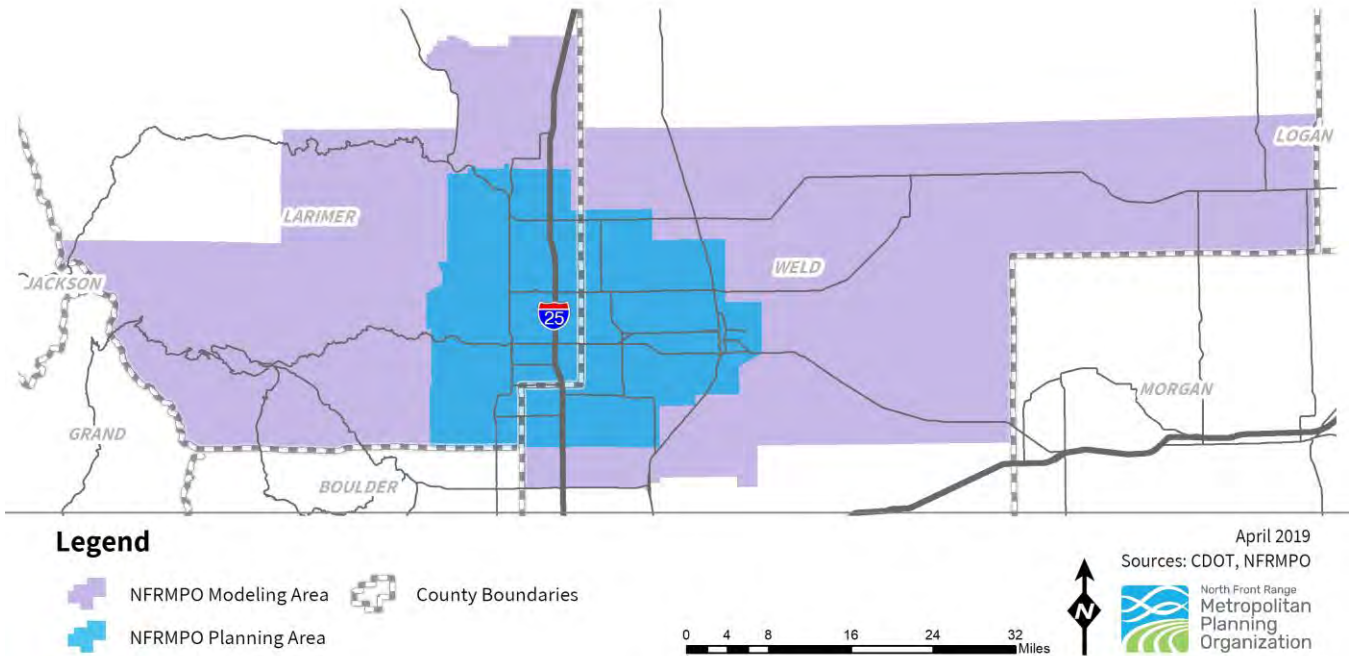
¹UrbanCanvas Block-Level Documentation, <https://cloud.urbansim.com/docs/block-model/index.html>, accessed June 11, 2019.

Figure X-X: Forecasted Household and Job Growth in the North Front Range Region, 2015-2045



Source: NFRMPO 2010 LUAM

Figure X-X: North Front Range Modeling Boundary

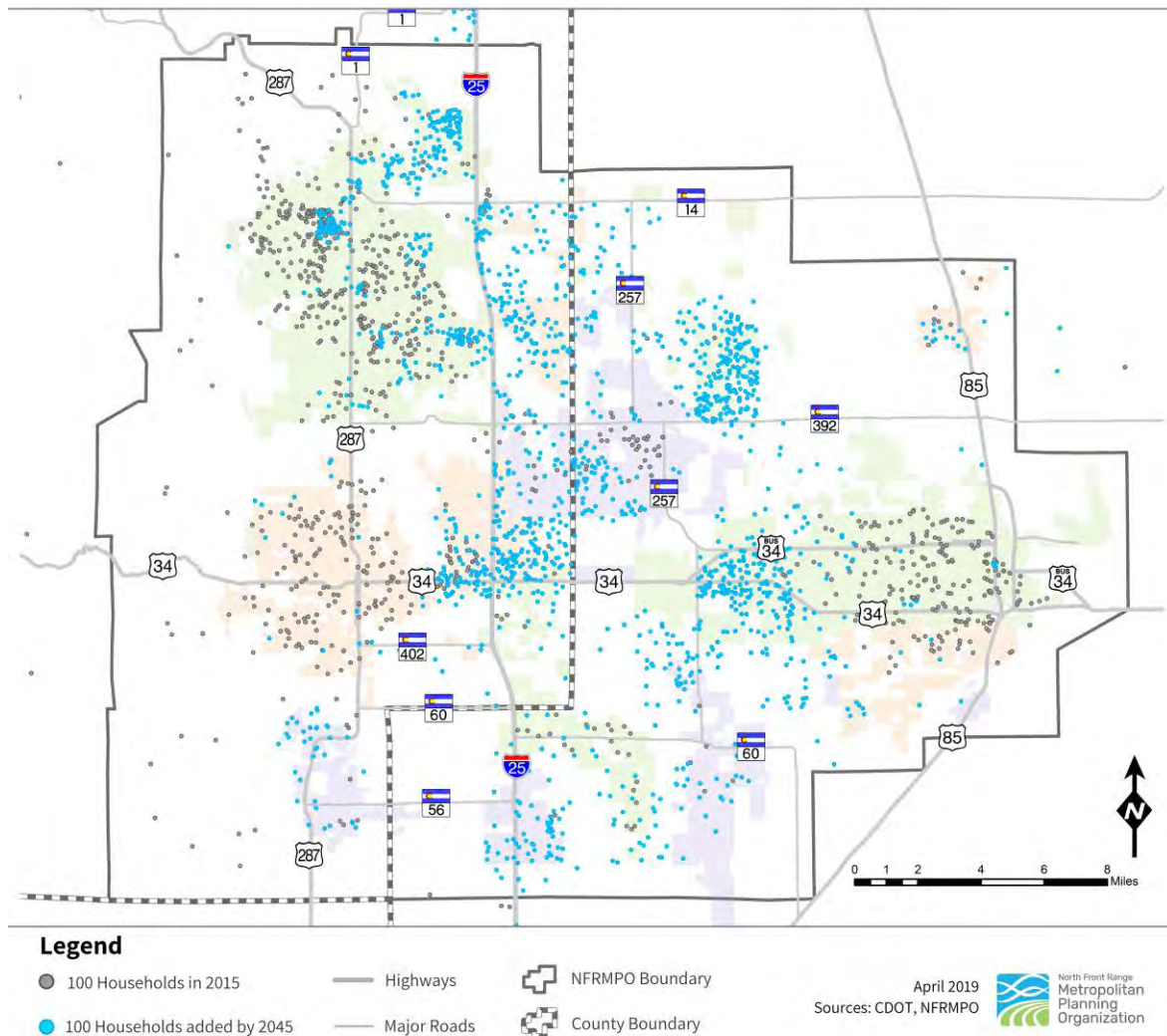


Baseline Land Use Scenario

The baseline land use scenario provides the expected growth in the region out to 2045. The location of households in 2015 and the location of new household growth out to 2045 is illustrated in **Figure X-X**. The 2010 LUAM forecasts much of the household growth will occur in the center of the region along I-25, as well as in western Greeley, Severance, and the communities in the southern portion of the region.

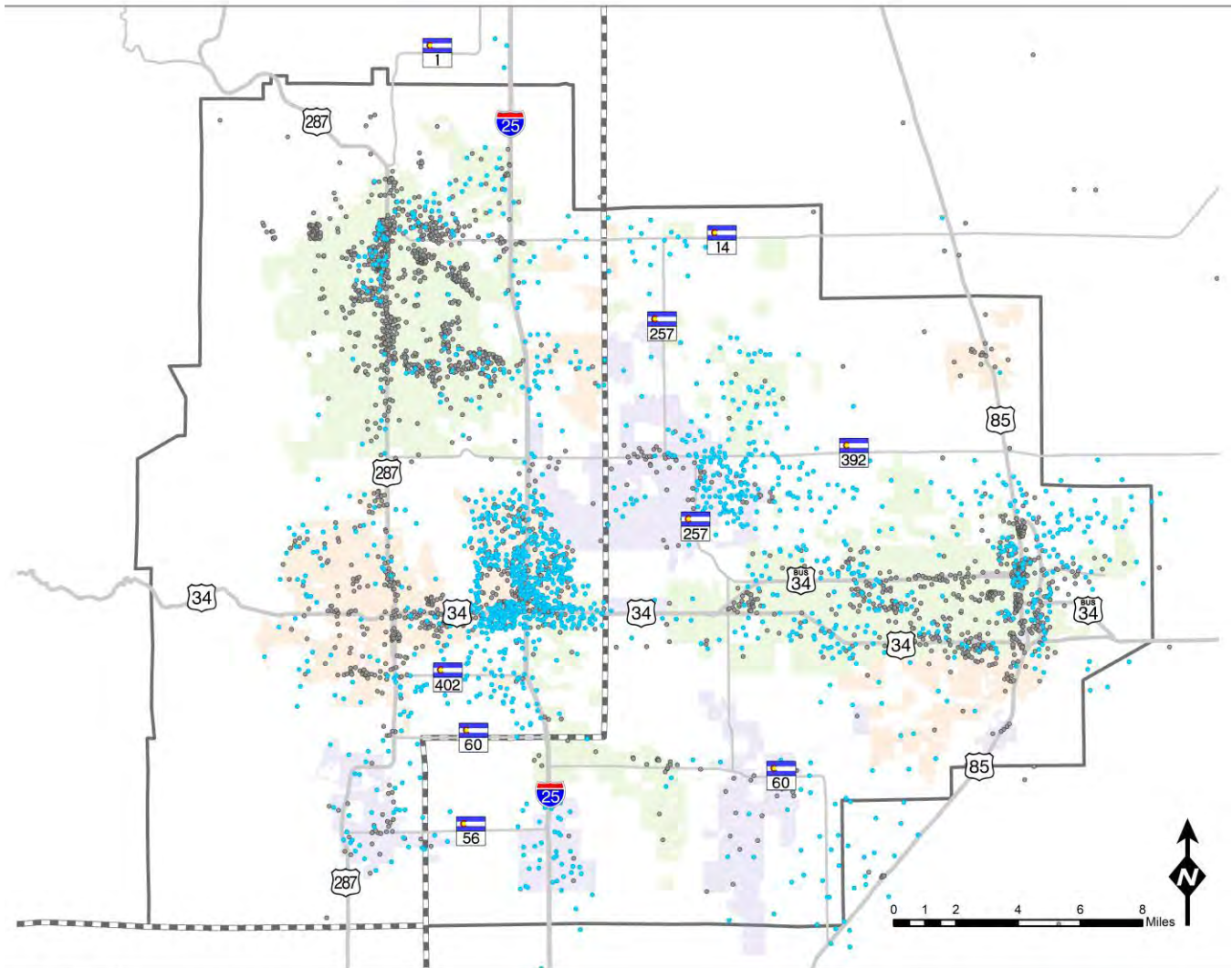
The location of jobs in 2015 and the location of new job growth out to 2045 is illustrated in Figure X-X. The baseline scenario forecasts much of the employment growth out to 2045 will occur along I-25 near US 34 and Crossroads Boulevard, with additional growth scattered throughout the rest of the region.

Figure 3-1. NFRMPO Household Growth 2015-2045



Note: Households are distributed randomly within Census Blocks, the boundaries of which are not identified on the map.

Figure 3-2. Employment Growth 2015-2045



Legend

- 100 Jobs in 2015
- 100 Jobs Added by 2045
- Highways
- Major Roads
- ⊕ NFRMPO Boundary
- ⊕ County Boundary

April 2019
Sources: CDOT, NFRMPO



Note: Jobs are distributed randomly within Census Blocks, the boundaries of which are not identified on the map. As forecasted in the baseline scenario, the anticipated household growth in each community’s Growth Management Area (GMA) is identified in **Table X-X**. The highest household growth is forecasted for Severance at 9.1 percent, followed by Timnath at 8.6 percent and Milliken at 5.4 percent. The highest employment growth is forecasted for Severance at 7.0 percent, Timnath at 5.7 percent, and Berthoud at 4.1 percent.

Table X-X: Household and Job Forecasts by GMA, 2015 and 2045

GMA	Households 2015	Households 2045	Jobs 2015	Jobs 2045	Household Growth Rate (2015-2045)	Job Growth Rate (2015-2045)
Berthoud	3,179	11,546	4,531	15,041	4.4%	4.1%
Eaton	1,928	3,544	2,352	2,438	2.1%	0.1%
Evans	8,259	12,210	5,266	9,804	1.3%	2.1%
Fort Collins	72,665	117,069	112,288	128,558	1.6%	0.5%
Greeley	37,029	65,189	71,836	114,027	1.9%	1.6%
Johnstown	5,885	17,590	6,298	17,239	3.7%	3.4%
LaSalle	899	1,019	1,046	1,111	0.4%	0.2%
Loveland	33,470	56,902	53,724	126,177	1.8%	2.9%
Milliken	2,269	11,082	2,404	4,415	5.4%	2.0%
Severance	1,792	24,767	1,111	8,527	9.1%	7.0%
Timnath	1,271	15,238	1,226	6,390	8.6%	5.7%
Windsor	8,954	25,345	9,401	25,252	3.5%	3.3%

Source: NFRMPO 2010 Land Use Allocation Model

Household Size and Income

Household projections were classified by five household sizes representing the number of people occupying the household and three income levels, identified in **Table 3-3** for 2015 and in **Table 3-8** for the 2045 forecast. Combined, household size and household income are important indicators for travel patterns and mode choice.

Table 3-7: 2015 Household Size and Income Data

Household Income (2010 dollars)	1-person HH	2-person HH	3-person HH	4-person HH	5+ person HH	Total HH	Percent
Less than \$20,000 (Low Income)	16,702	8,513	4,077	1,915	1,088	32,295	16%
\$20,000 - \$74,999 (Medium Income)	23,954	40,349	15,673	10,908	7,841	98,725	48%
\$75,000 and higher (High Income)	5,267	30,803	16,003	14,095	8,762	74,930	36%
Total	45,923	79,665	35,753	26,918	17,691	205,950	100%
Percent	22%	39%	17%	13%	9%	100%	-

Source: NFRMPO 2010 LUAM

Table 3-8: 2045 Household Size and Income Data

Household Income (2010 dollars)	1-person HH	2-person HH	3-person HH	4-person HH	5+ person HH	Total HH	Percent
Less than \$20,000 (Low Income)	35,182	17,652	7,662	3,107	1,722	65,325	16%
\$20,000 - \$74,999 (Medium Income)	50,811	83,581	29,608	17,701	12,127	193,828	48%
\$75,000 and higher (High Income)	11,053	63,585	30,702	22,903	13,621	141,864	35%
Total	97,046	164,818	67,972	43,711	27,470	401,017	100%
Percent	24%	41%	17%	11%	7%	100%	-

Source: NFRMPO 2010 LUAM

Employment by Sector

Overall, employment is projected to grow at approximately two percent per year for the entire region, with Weld County projected to grow at a slightly higher rate than Larimer County. For input into the RDTM, employment was divided into four categories defined by the National Industrial Classification System (NAICS): Basic, Medical, Retail, and Service.

- **Basic jobs**, also known as production-distribution, are those based on outside dollars flowing into the local economy and include industries that manufacture and/or produce goods locally for export outside the region. Basic jobs include manufacturing, mining, utilities, transportation, and warehousing among others.

- **Medical jobs** include health care and social assistance.
- **Retail jobs** include retail trade and food service.
- **Service jobs** include finance, insurance, real estate, and public administration.

The Basic, Medical, Retail, and Service employment estimates for 2015 and forecasts for 2045 are shown in **Table X-X**. The employment forecast does not account for self-employed people working from home.

The [NFRMPO 2010 Household Survey](#) provides information about how residents in the region commute to work. The vast majority of people who commute to work do so in automobiles,

Table X-X. Most commuters who use bicycles or walk to work live in Fort Collins or Greeley/Evans.

Table X-X: Classification of Employment, 2015 and 2045

Classification	2015		2045		Percent Growth (%)
	Employees	Percentage (%)	Employees	Percentage (%)	
Basic	68,327	23.5%	114,347	23.6%	67%
Medical	40,820	14.1%	68,087	14.0%	67%
Retail	58,646	20.2%	97,550	20.1%	66%
Service	122,654	42.2%	205,353	42.3%	67%
Total	290,447	100.0%	485,337	100.0%	67%

Source: NFRMPO 2010 LUAM

Table X-X: Commute to Work by Mode

Travel Mode	Commuter Trips (%)
Auto/van/truck driver or passenger	89.3%
Bike	6.2%
Walk	3.4%
Transit (local bus or express bus)	0.5%
Other (don't know or refused)	0.6%
Total	100%

Source: NFRMPO Household Survey, 2010

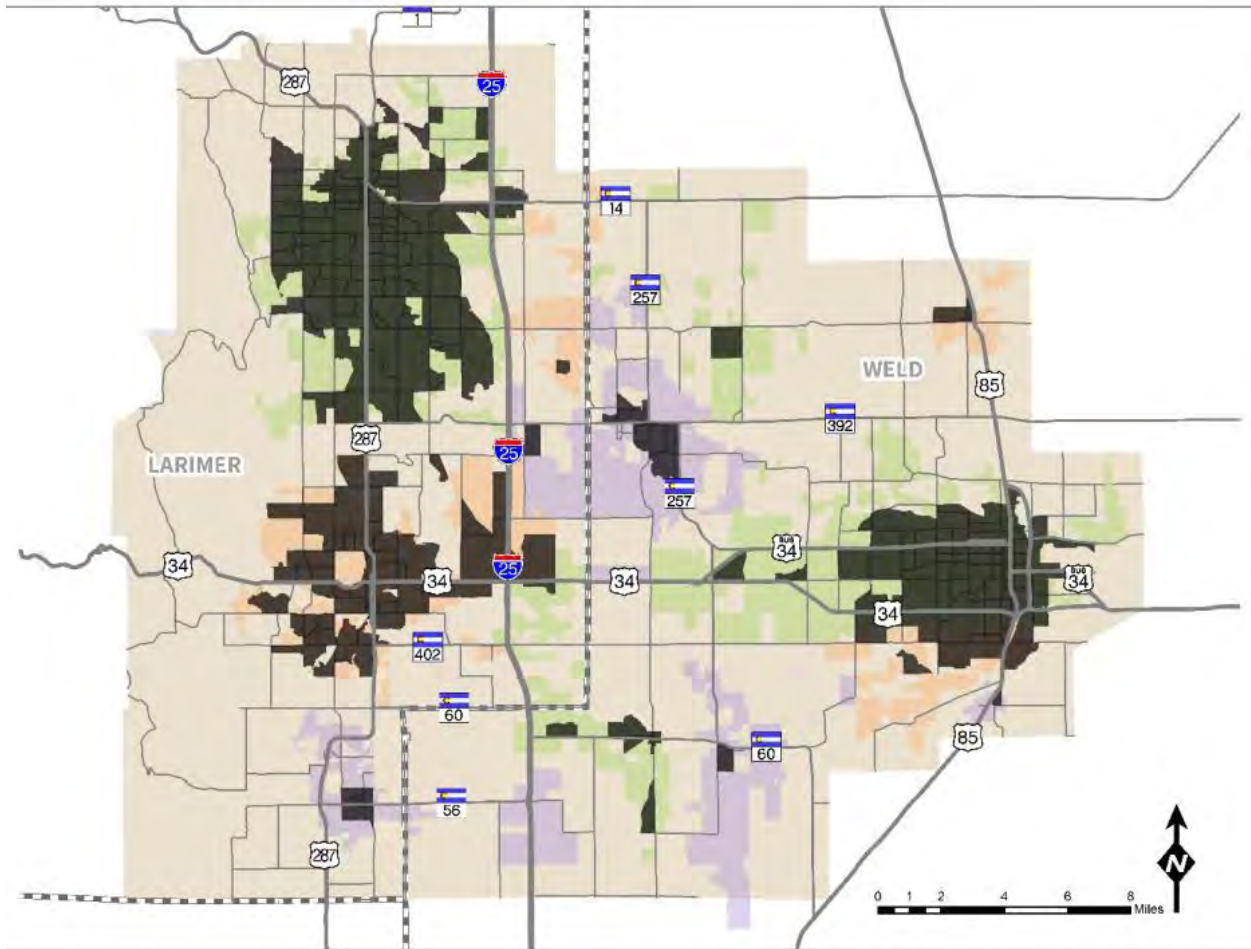
High-Density Scenario

The high-density scenario was created to demonstrate how the region would develop if additional density was allowed in urban core areas compared to the density currently identified in communities' long range plans. Urban core areas were identified based on locations with the highest density in 2015, as shown in **Figure X-X**. To accommodate additional growth, the maximum allowable densities in the urban core were doubled in the high-density scenario. The high-density scenario was also used in conjunction with the transit-

investment travel model scenario, as discussed in the following section.

Compared to the baseline scenario, the high-density scenario shows higher household density in the region's largest communities, including Fort Collins, Greeley, and Loveland, and lower density in many of the region's smaller communities. **Figure X-X** and **Figure X-X** illustrate the household density in 2045 according to the baseline scenario and the high-density scenario, respectively.

Figure X-X. Urban Core Areas

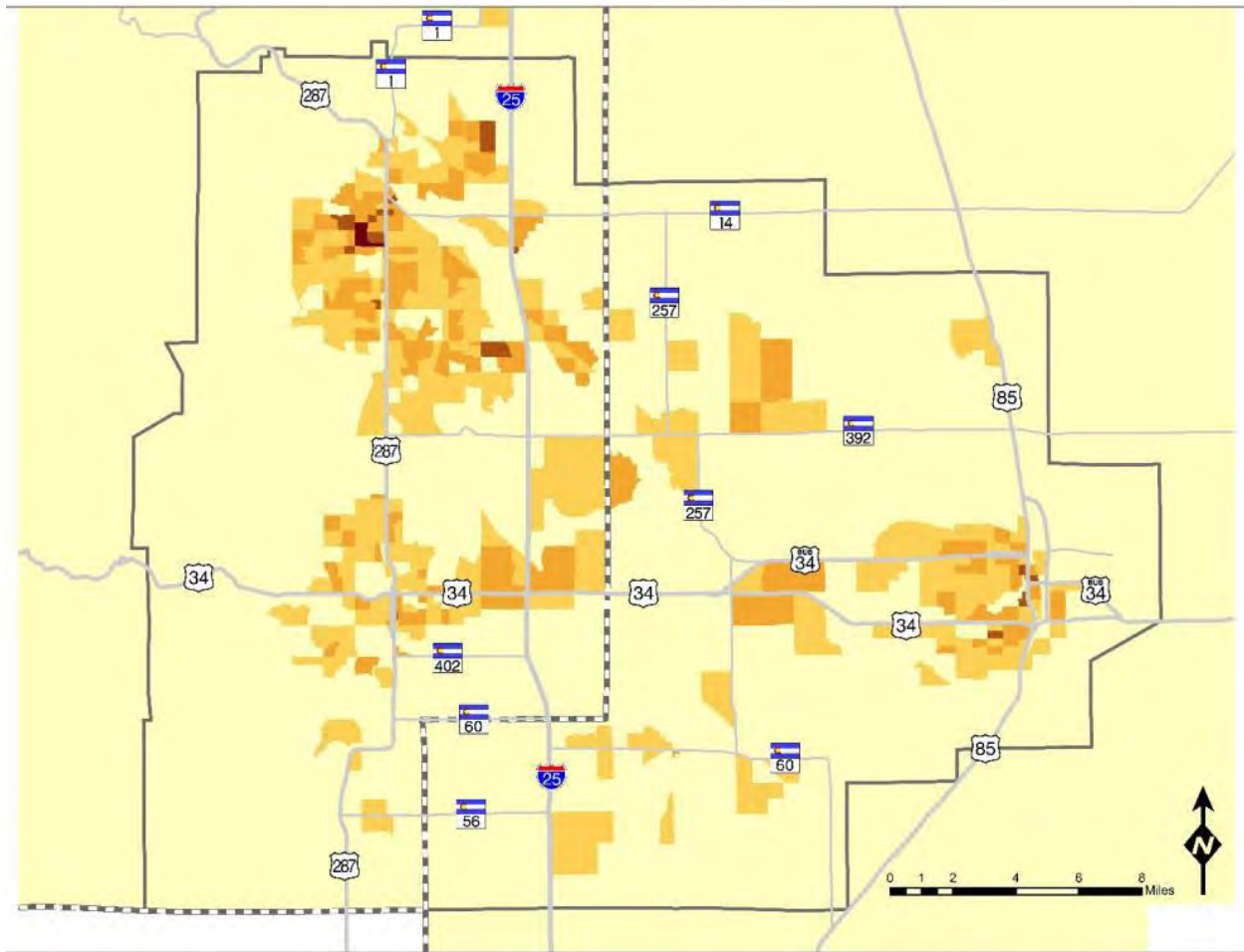


Legend

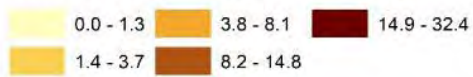
- Urban Core
- County Boundary
- NFRMPO Boundary

April 2019
Sources: CDOT, NFRMPO
North Front Range Metropolitan Planning Organization

Figure X-X. Baseline Scenario Household Density 2045



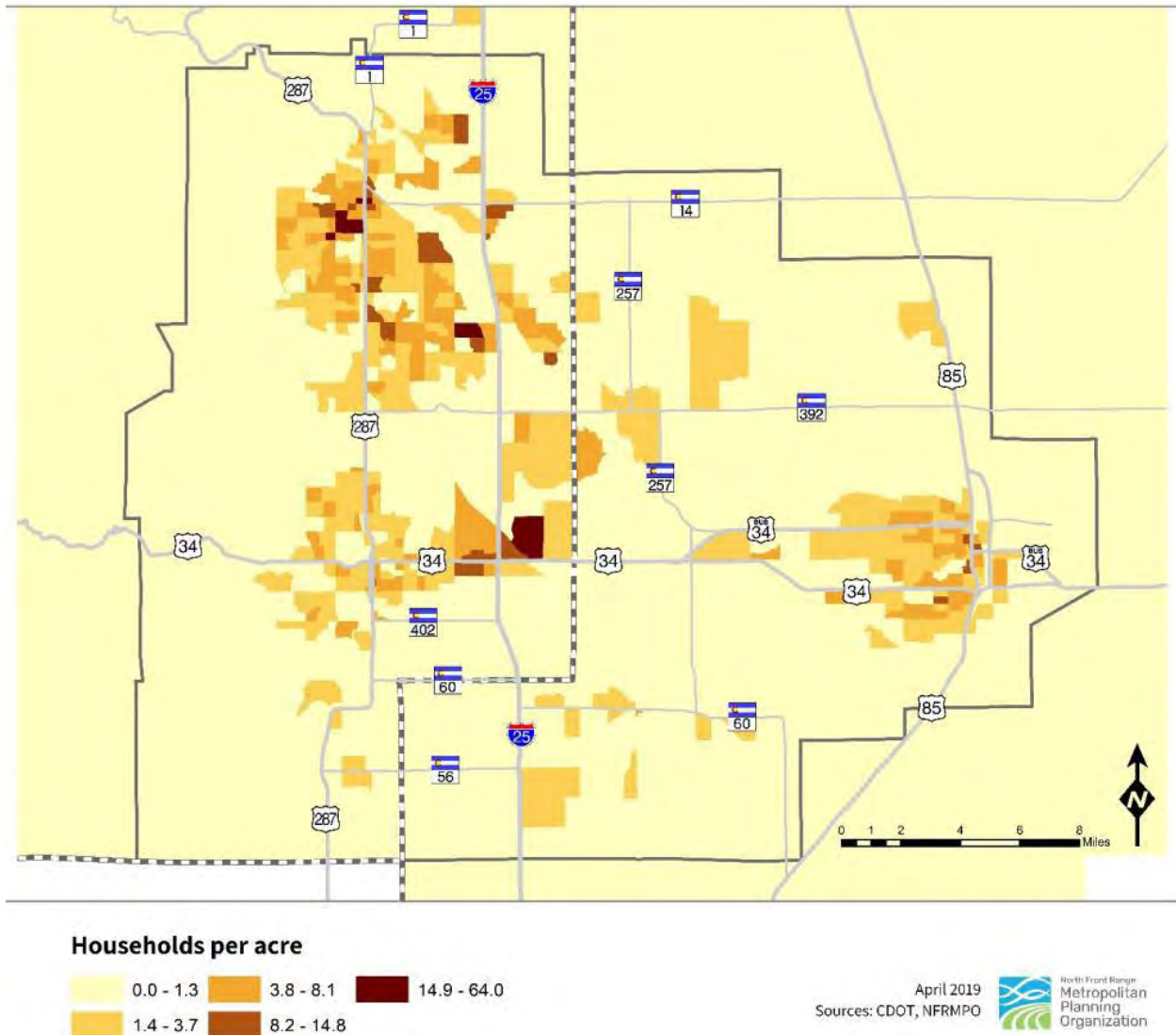
Households per acre



April 2019
Sources: CDOT, NFRMPO

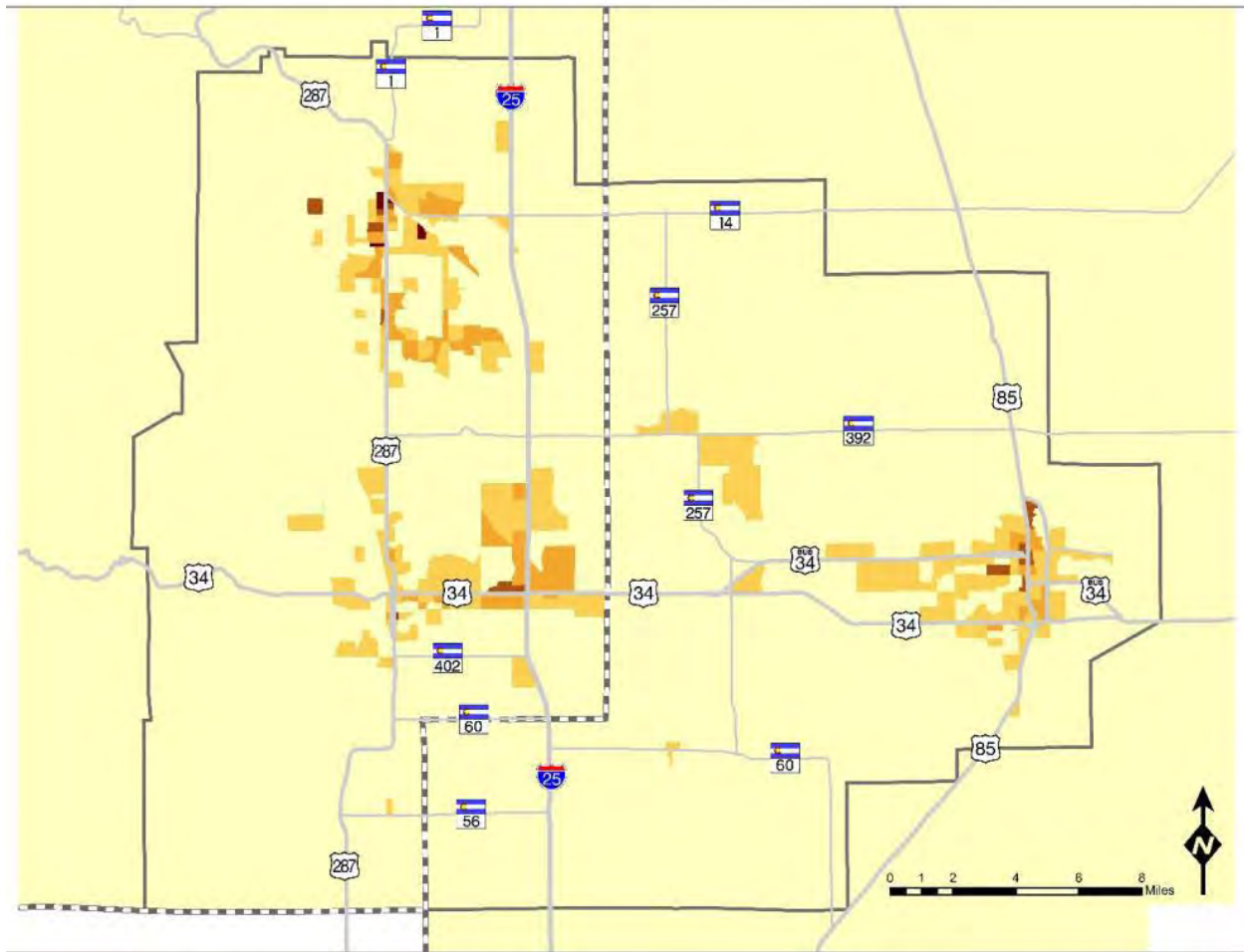


Figure X-X. High-Density Scenario Household Density 2045



Both the baseline scenario and the high-density scenario show similar job density in 2045, as shown in **Figure X-X** and **Figure X-X**.

Figure X-X. Baseline Scenario Job Density 2045



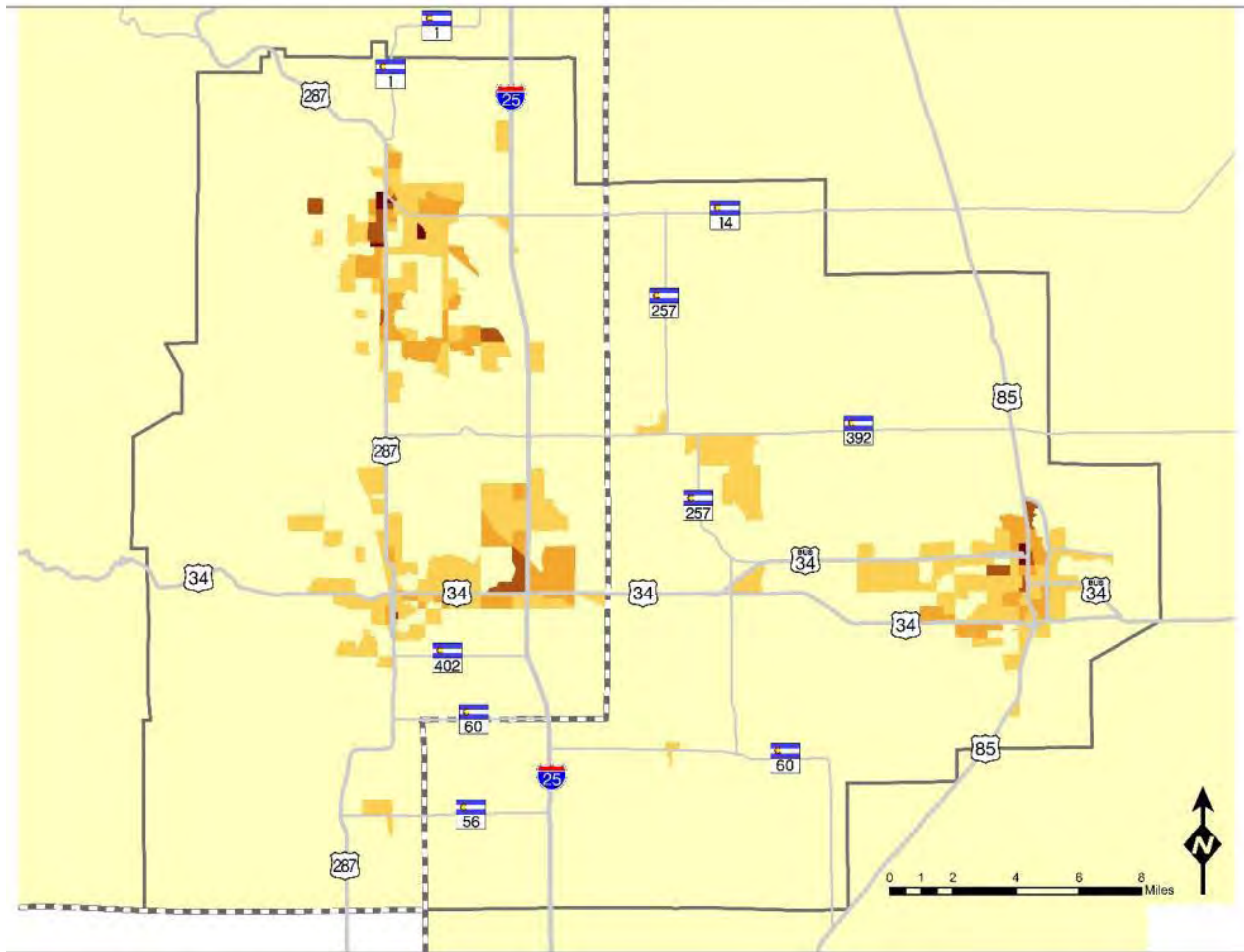
Jobs per acre



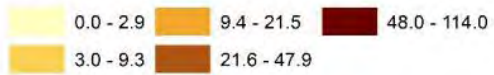
April 2019
Sources: CDOT, NFRMPO



Figure X-X. High-Density Scenario Job Density 2045



Jobs per acre



April 2019
Sources: CDOT, NFRMPO



B. Transportation Forecast and Scenarios

The 2015 RTDM builds upon the outputs from the 2010 LUAM to identify how the region's transportation system will perform in 2045, including traffic volume, congested travel speeds, and transit ridership.

Six scenarios were developed using the 2015 RTDM, including the baseline scenario and five alternative investment scenarios. The baseline scenario forecasts the transportation system using the fiscally constrained priority transportation projects. The alternative investment scenarios test the following investment options:

- **No Build** – No transportation investments from 2020 through 2045.
- **Fiscally constrained transit investment** – All flexible funds invested in the 2045 Regional Transit Element (RTE) recommended corridors including US34 Central and US85.
- **Fiscally constrained inter-regional corridors** – All flexible funds invested in capacity projects along the inter-regional corridors including all US and state highways
- **Fiscally constrained I-25** – All flexible funds invested in capacity projects along I-25.
- **Fiscally unconstrained: All identified projects** – All identified transportation projects

As discussed in **Chapter 3-1: Technology**, connected and autonomous vehicles (CAV) have

the potential to drastically change travel patterns and the functioning of the transportation system as a whole. CAV technology could decrease congestion by reducing the incidence of crashes and increasing roadway capacity through closer following distances, or it could increase congestion due to travel behavior changes such as making additional trips and longer trips, especially if driverless ridesharing becomes available. While the potential impacts of CAV technology on the transportation system are important to consider, the NFRMPO 2015 RTDM does not consider the potential impacts of CAV adoption. CDOT is currently developing CAV scenarios for use in the statewide travel model, which will provide insight into the potential impacts of CAV within the state and the North Front Range region.

Baseline Transportation Scenario

[The 2015 RTDM is still in development. This section will identify VMT, TTI, mode share, congestion hours of delay, and LOS for the baseline scenario.]

Alternative Investment Scenarios

[The 2015 RTDM is still in development. This section will identify VMT, TTI, mode share, congestion hours of delay, and LOS for the alternative investment scenarios.]

AGENDA ITEM SUMMARY (AIS)

North Front Range Transportation & Air Quality Technical Advisory Committee (TAC)



Meeting Date	Agenda Item	Submitted By		
June 19, 2019	FY2019 & FY2020 Additional Funding Allocations Process	Medora Bornhoft		
Objective/Request Action				
<p>To discuss the process for allocating additional FY19 & FY20 funds to projects selected in the FY2016-2019 Call for Projects and the FY2020-2021 Call for Projects. The allocation is scheduled to return for discussion and action in the fall.</p>		<input type="checkbox"/> Report <input type="checkbox"/> Work Session <input checked="" type="checkbox"/> Discussion <input type="checkbox"/> Action		
Key Points				
<p>Periodically, unprogrammed funds are identified and additional allocations are awarded to projects selected in previous Calls for Projects held by the NFRMPO. The most recent additional allocation was approved on June 7, 2018 for eligible projects from the FY2016-2019 Call for Projects with unprogrammed FY18 funds which were immediately rolled forward to FY19.</p> <p>The most recent CDOT reconciliation from January 2, 2019 identifies unprogrammed FY19 CMAQ and FY19 STBG funds; however, additional clarification on the amount of unprogrammed CMAQ funds is still underway and an allocation will not be held prior to the start of the 2020 state fiscal year on July 1, 2019. The CDOT reconciliation identifies approximately \$1.1M FY19 CMAQ funds, \$534K FY20 CMAQ funds, \$1.8M FY19 STBG funds, and \$42K FY20 STBG funds.</p> <p>Staff proposes postponing the additional allocation until fall 2019 to allow time for clarifying the unprogrammed CMAQ funds, at which point the unprogrammed FY19 funds will roll into FY20. Staff requests TAC discuss two options for allocating the rolled FY20 funds:</p> <ul style="list-style-type: none"> Option 1 – Distinguish between the funds rolled to FY20 from previous years and the funds originally identified (i.e. non-rolled) in FY20. Allocate rolled FY20 funds to projects from the FY2016-2019 Call and allocate non-rolled FY20 funds to projects from the FY2020-2021 Call. Option 2 – Allocate all FY20 funds, whether they are rolled or not, to eligible projects from the FY2020-2021 Call for Projects. 				
Committee Discussion				
<ul style="list-style-type: none"> None 				
Supporting Information				
<p>Tables 1 and 2 identify projects from the two Calls for Projects that are eligible to receive an additional award. Vehicle projects are considered ineligible for additional funding due to the suspension of the Buy America waiver program.</p>				
Table 1. Eligible CMAQ Projects				
Call	Sponsor	Project Name	Federal Award	Unfunded Request
FY2016-2019	Greeley	GET CNG Bus Replacement	\$4,625,831	\$1,267,102
	Fort Collins	Transfort CNG Buses	\$1,900,000	\$1,460,000
FY2020-2021	Greeley	GET Diesel Bus Replacement	\$1,513,000	\$1,514,834
	Loveland	COLT Diesel Bus Replacement	\$384,000	\$384,000

Supporting Information, Continued

Table 2. Eligible STBG Projects

Call	Sponsor	Project Name	Federal Award	Unfunded Request
FY2016-2019	Greeley	10th Street Access Control Implementation*	\$2,010,958	\$1,089,042
	Fort Collins	US 287 Intersection Improvements*	\$0	\$1,168,000
FY2020-2021	Fort Collins	Timberline Road Corridor Improvements	\$2,202,969	\$491,633
	Loveland	US 34 Widening - Boise Avenue to I-25	\$1,085,418	\$175,507

*As agreed to by the City of Fort Collins and City of Greeley, the FY2018 allocation provided \$512,742 to the City of Greeley's *10th Street Access Control Implementation* project and \$0 to the Fort Collins' *US 287 Intersection Improvements* project even though both projects have the same rank. The sponsors agreed to provide the Greeley project's share of funding to the Fort Collins' project in the subsequent allocation.

Advantages

- Option 1 - Allocating rolled FY20 funds to the FY2016-2019 Call for Projects and non-rolled FY20 funds to the FY2020-2021 Call for Projects allows projects from both Calls to receive additional funding.
- Option 2 - Allocating all FY20 funds, including funding rolled from previous years, to the FY2020-2021 Call for Projects is simpler, and projects from the FY2016-2019 Call may already be complete by the time the allocation is finalized.

Disadvantages

- Option 1 – More complex.
- Option 2 – Projects from the FY2016-2019 Call will not receive an allocation.

Analysis/Recommendation

Staff recommends TAC discuss the two options for allocating additional funds.

Attachments

- None.

AGENDA ITEM SUMMARY (AIS)

North Front Range Transportation & Air Quality Technical Advisory Committee (TAC)



Meeting Date	Agenda Item	Submitted By
June 19, 2019	Draft <u>Freight Northern Colorado (FNC)</u> Plan	Ryan Dusil
Objective/Request Action		
Staff is providing a revised Draft <u>FNC</u> , the region’s first freight plan, for TAC review and discussion.		<input type="checkbox"/> Report <input type="checkbox"/> Work Session <input checked="" type="checkbox"/> Discussion <input type="checkbox"/> Action
Key Points		
<ul style="list-style-type: none"> • <u>FNC</u> is the first regionwide freight plan for the NFRMPO region. • The purpose of FNC is to provide a guide for the improvement of the overall freight system within the NFRMPO region. FNC serves as the freight component of the <u>2045 Regional Transportation Plan (RTP)</u>, providing a holistic view of freight and industry in the region and positions the region to pursue funds for freight-benefitting projects. • Creating a regional freight plan was a recommended action by the Federal Highway Administration (FHWA) in the NFRMPO quadrennial review in 2014. • FNC is organized into five chapters: 1 – Introduction, 2 – Plans, Studies, and Programs, 3 – Existing Conditions, 4 – Emerging Trends and Opportunities, and 5 – Implementation. • NFRMPO staff requests TAC members pay particular attention to the Themes from Local Plans section of Chapter 2, Chapter 4, and the Recommendations in Chapter 5. • The Draft FNC can be found at the following link: https://nfrmpo.org/wp-content/uploads/draft-2019-fnc.pdf 		
Committee Discussion		
<ul style="list-style-type: none"> • This is the second time the TAC is discussing the Draft <u>FNC</u>. 		
Supporting Information		
<ul style="list-style-type: none"> • It is anticipated the <u>Colorado Freight Plan (CFP)</u>, Colorado’s first comprehensive multimodal freight planning effort to integrate policies and strategies across freight modes, will be adopted by the Colorado Transportation Commission (TC) in 2019. • NFRMPO staff anticipates receipt of region-specific data from development of the CFP, including: freight-industry stakeholder survey responses and truck crash “hot spot” analysis results. This data will be incorporated into <u>FNC</u>, accordingly. • The Final <u>FNC</u> will include an improved Cover Page, Acknowledgements, Executive Summary, List of Figures, List of Tables, Acronym List, standardized citations, and standardized table and figure formatting and numbering. • Time permitting, truck travel forecasts from the <u>2045 Regional Travel Demand Model</u> and additional INRIX data from Probe Data Analytics Suite the will be incorporated into the Final <u>FNC</u>. 		
Advantages		
<ul style="list-style-type: none"> • Identifying freight-related needs and constraints as well as potential solutions and action steps allows the NFRMPO and its member agencies to improve their planning processes and remain competitive for freight-related funding opportunities. • <u>FNC</u> allows the NFRMPO and its member agencies to reaffirm the regional importance of recommendations and implementation steps identified in other recent statewide planning efforts such as the <u>Colorado Freight Plan</u> (2019), the <u>Colorado Truck Parking Assessment</u> (2019) the <u>Statewide Freight and Passenger Rail Plan</u> (2018) as well as local agency plans with freight-related components. 		

Disadvantages

- None.

Analysis/Recommendation

Staff requests TAC review the revised Draft FNC and provide comments.

Attachments

- None.