

2050 Regional Transportation Plan

Executive Summary



EXPRESS

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North Front Range Metropolitan Planning Organization

The North Front Range Metropolitan Planning Organization (NFRMPO) covers around 675 square miles in Larimer and Weld counties, including the cities of Fort Collins, Greeley, and Loveland, 10 additional municipalities, and unincorporated portions of both counties. Every month, elected officials from each of the communities, and representatives from the Colorado Department of Transportation (CDOT) and the Colorado Department of Public Health and Environment's Air Pollution Control Division (CDPHE-APCD) meet to carry out the federal transportation planning process.



The members of the North Front Range Metropolitan Planning Organization include:

- Air Pollution Control Division
- Berthoud
- Colorado Transportation Commission
- Eaton
- Evans
- Fort Collins
- Garden City
- Greeley
- Johnstown

- Larimer County
- LaSalle
- Loveland
- Milliken
- Severance
- Timnath
- Weld County
- Windsor

2050 Regional Transportation Plan

Everyday, thousands of people use the region's transportation system: roadways, trails, sidewalks, transit, and railroads. Whether for freight, commuting, recreation, running errands, or some other reason, people and goods rely on a system that keeps up with demand, and is safe and connected. That demand doesn't show any sign of slowing down as we consider population and job growth in Northern Colorado.

Every four years, the NFRMPO leads an effort to consider what the region looks like today and use data to identify what investments need to be made over the next two decades. The **2050 Regional Transportation Plan** (RTP) is the culmination of nearly two years of outreach, data analysis, modeling, and scenario planning. In addition, the 2050 RTP analyzes transportation improvements for greenhouse gas and ozone impacts in line with federal and state requirements.

The NFRMPO's Planning Council adopted the <u>2050 RTP</u> in September 2023, submitting the plan for approval from the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA). The Colorado Transportation Commission (TC) approves the GHG Transportation Report. The plan will be in place through September 2027 but may be amended as needed.

The 2050 RTP is organized into four key sections with appendices:

1

Planning Context

Explaining the agency, the plan, existing conditions, and legislation impacting the RTP.

2

Trends

Comparing current data to expected growth in populations, jobs, traffic, transit, bicycle and pedestrian facilities, etc.

Visions and Scenario Planning

Reviewing expected and potential investments on the Regionally Significant Corridors (RSCs), Regional Active Transportation Corridors (RATCs), and Regional Transit Corridors (RTCs).



Funding and Financial Plan

Understanding what funding is expected, which projects can be funded, and what priorities can be met with existing and proposed resources.



Appendices

Air quality conformity, Greenhouse Gas Report, and Public Outreach

Regional Corridors

Thousands of miles of roadways, trails, bike lanes, transit routes, and sidewalks crisscross the region. These roads are maintained by a range of agencies, from the local communities to counties, transit agencies to CDOT, and trail authorities in-between. The NFRMPO's role in transportation planning is to focus on corridors that connect across communities and can act as the regional backbone for local connections: **Regionally Significant Corridors** (RSCs), **Regional Transit Corridors** (RTCs), and **Regional Active Transportation Corridors** (RATCs). Interactive maps of these corridors are available at <u>nfrmpo.org/rtp/corridors</u>. Vision Plans were developed for each regional corridor.

Regionally Significant Corridors

RSCs consist of roadways that meet the following criteria:

- The roadway is eligible to receive federal aid,
- The roadway goes through more than one governmental jurisdiction or connects to an activity center by 2050,
- Segments of roadway that do not yet exist or are not currently federal-aid eligible have improvements planned by 2050
- The roadway serves regional traffic as determined by local knowledge.



| RSC | Name | RSC | Name | RSC | Name |
|--------|---------------|--------|---|--------|-------------------------|
| RSC-1 | I-25 | RSC-11 | SH257 | RSC-21 | WCR27 / 83rd Ave |
| RSC-2 | US34 | RSC-12 | SH392 | RSC-22 | WCR35 / 35th Ave |
| RSC-3 | US34 Business | RSC-13 | SH402/Freedom Pkwy | RSC-23 | WCR74 / Harmony Rd |
| RSC-4 | US85 | RSC-14 | LCR3/WCR9.5 | RSC-24 | 8th St |
| RSC-5 | US85 Business | RSC-15 | LCR5 | RSC-25 | 59th Ave / 65th Ave |
| RSC-6 | US287 | RSC-16 | LCR7 / LCR9 / Timberline Rd | RSC-26 | Crossroads Blvd / WCR66 |
| RSC-7 | SH1 | RSC-17 | LCR17 / Shields St / Taft Ave / Berthoud Pkwy | RSC-27 | Mulberry St |
| RSC-8 | SH14 | RSC-18 | LCR 19 / Taft Hill Rd / Wilson Ave | RSC-28 | Prospect Road |
| RSC-9 | SH56 | RSC-19 | WCR13 | RSC-29 | 4th St |
| RSC-10 | SH60 | RSC-20 | WCR17 | RSC-30 | O Street |

Regional Transit Corridors

RTCs are categorized by type of service and include:

- Premium Transit Analysis (LinkNoCo) corridors recommended by LinkNoCo
- Existing Service additional frequency and improved infrastructure on existing routes
- Local Priorities services that do not currently exist but are important to local communities or do not fit into other categories
- Front Range Passenger Rail potential corridors for the Front Range Passenger Rail

Great Western

Name

RTC

RTC-1



| | | Evicting Science Scien | aprice d" County Poundany | Metropolitan |
|-------|---------------------|--|--|--------------------------|
| RTC-2 | US34 | Front Ran | ge Passenger Rail 🥐 NFRMPO Planning Area | Planning Organization |
| RTC-3 | Loveland to Windsor | RSC-10 | Harmony Road MAX | |
| RTC-4 | FLEX Express | RSC-11 | 34 Business Premier Transit | |
| RTC-5 | FLEX Local | RSC-12 | Front Range Passenger Rail (US287) | |
| RTC-6 | Bustang | RSC-13 | Front Range Passenger Rail—I-25 | |
| RTC-7 | Poudre Express | RSC-14 | US85 Transit Service | |
| RTC-8 | North College MAX | RSC-15 | SH56 Transit Service | |
| RSC-9 | West Elizabeth MAX | RSC-16 | US34 West Loveland to Estes Park | |

Regional Active Transportation Corridors

| RATC | Name |
|---------|---|
| RATC-1 | South Platte/American Discovery |
| RATC-2 | Little Thompson River |
| RATC-3 | Big Thompson River |
| RATC-4 | Great Western / Johnstown / Loveland |
| RATC-5 | North Loveland/Windsor |
| RATC-6 | Poudre River Trail |
| RATC-7 | Front Range Trail (West) |
| RATC-8 | BNSF Fort Collins/Berthoud |
| RATC-9 | Johnstown/Timnath |
| RATC-10 | Eaton/LaSalle |
| RATC-11 | US34 Non-Motorized |
| RATC-12 | Carter Lake/Horsetooth Foothills Corridor |



Demographic Trends



For a range of reasons, individuals and families alike are moving to Northern Colorado. Based on data from the State Demography Office (SDO), developments underway and in the local communities' pipeline, and the NFRMPO's Land Use Allocation Model, the anticipated growth was mapped (shown in the map to the left). Much of the growth is expected along the major regional corridors, including I-25, US34, and US287.

Based on these estimates, Northern Colorado communities are expected to grow from 525,000 in 2019 to 849,000 in 2050. Johnstown, Timnath, and Berthoud have the highest expected growth rate, while Fort Collins, Loveland, and Greeley are expected to have the highest absolute growth.

Alongside the anticipated growth in population, jobs are also expected to grow significantly. Based on data from local governments, the SDO, and the LUAM, the region is expected to grow from around 260,000 jobs to 369,000.

Job growth is more focused than population and household growth, especially considering the opportunities around Centerra at I-25 and US34, and redevelopment of downtown Greeley.

Severance, Milliken, and Johnstown are expected to add significant jobs compared to the 2019 number, while Fort Collins, Greeley, and Loveland are still anticipated to add the most absolute number of jobs.



Performance Management

To better guide where the region spends its limited transportation funding, the NFRMPO tracks how projects impact the regional and federal performance measures. Specific targets and benchmarks are explored in the full <u>2050 RTP</u>. For the 2050 RTP, the NFRMPO adopted the State's targets for PMs 1, 2, and 3.

| | Number of Fatalities | | ⊗ | | Percent—Good Interstate pa | avement | 0 |
|------------------------------------|--|---|-------|-------------------------|---|---------------|--------------|
| | Rate of fatalities per 100M VMT | | ⊗ | | Percent—Poor Interstate pa | ivement | ⊗ |
| PM1: | Number of serious injuries | | 8 | PM2: Bridge and | Percent—Good non-Intersta | ate pavement | ⊗ |
| Highway Safety | Rate of serious injuries per 100M VMT Number of non-motorized fatalities and serious injuries | | 8 | Pavement Condition | Percent—Poor non-Intersta | te pavement | |
| | | | | | Percent—Good NHS Bridges Percent—Poor NHS Bridges | 5 | |
| | Percent of person-miles traveled on Interstate system that are reliable | | | | Population within paratransit and demand response service area within the NFRMPO boundary | | • |
| | Percent of person-miles traveled on non-Interstate system that | | | | Fixed-route revenue hours within service areas | per capita | ⊗ |
| | are reliable | | | | Non-motorized facility miles | | 0 |
| РМ3: | Truck travel time reliability index | | | Regional Performance | Percent of non-single occupant vehicle | | 0 |
| System Performance | | | | Measures | Daily VMT per capita | | |
| | CO Reduction | | | | Projects requiring more than one | | |
| | NOx Reduction | | | | extension | | \checkmark |
| | Non-single occupant vehicle travel | | 0 | | Travel time index on RSCs | | |
| | Annual hours of peak hour excessive delay per capita on the NHS system | | | | Percent—devices connecte RSCs | d by fiber on | |
| F Transit Asset Management (TAM | | Percent Rev Benchmark | venue | Vehicles Meeting | g or Exceeding Useful Life | | _ |
| performance mea | asures are set by | Percent Service Vehicles Meeting or Exceeding Useful Life | | | | | |

performance measures are set by agency and vehicle type, not the NFRMPO)

Percent Passenger and Maintenance Facilities Rated Below Condition 3

Status Key:

Achieved

Benchmark



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Scenarios

To better understand how different investment levels, priorities, and land uses impact the transportation system, the NFRMPO developed various scenarios based on guidance from a Model Steering Team. NFRMPO staff used the Land Use Allocation Model (LUAM) and the Regional Travel Demand Model (RTDM) to test these scenarios against the baseline scenario, which is the fiscally constrained plan.

Land Use Scenario

High Density Land Use: Households



High Density Land Use: Jobs



One land use scenario was prepared for the <u>2050</u> <u>RTP</u> to compare it to the baseline scenario. The scenario increased allowable densities within certain zoning districts and manual increases in population by growing the 2050 numbers by 25 percent. 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.

In this scenario, block groups were able to absorb more population and jobs, providing for more infill development. Fundamentally, denser block groups can better support transit, walking, and bicycling by having more people in a smaller area. At the same time, traffic may become worse as more vehicles try to use existing resources.

Compared to the baseline scenario, the highdensity scenario forecasts more and denser development within the core. Development in the rural area is located predominantly along major highway corridors, while the influx of new development and jobs is along major corridors. Outputs from the High-Density Land Use Scenario were used as an input for the High-Density Land Use – Fiscally Constrained Projects scenario, explained on the next page.

Travel Demand Scenarios

The 2019 RTDM builds upon the outputs from the LUAM to identify how the region's transportation system will perform in 2050, including traffic volume, congested travel speeds, and transit ridership. The 2019 RTDM uses a base year of 2019 and a combination of destination choice and gravity modeling to forecast travel choices by trip purpose.

Four transportation scenarios were developed using the 2019 RTDM, including the baseline scenario and three specific scenarios. The baseline scenario forecasts the transportation system using the fiscally constrained priority transportation projects and guidance from local communities. The alternative investment scenarios test the following investment options:

- Baseline—the Fiscally Constrained Plan with anticipated land use
- **No Build**—No additional transportation investments from 2023 through 2045, beyond what is already under construction.
- Fiscally Unconstrained—All identified projects regardless of available funding
- **Fiscally Constrained and Higher Density Land Use**—Projects with anticipated funding based on a higher density scenario

| | Baseline | No Build | Fiscally Unconstrained | High Density/ Fiscally Constrained |
|------------------------------------|------------|------------|---------------------------|--|
| Vehicle Miles Traveled (VMT) | 19,020,700 | 19,537,644 | 19,546,470 | 18,519,574 |
| Vehicle Hours Traveled (VHT) | 570,784 | 605,562 | 559,419 | 552,488 |
| Vehicle Hours of Delay | 103,612 | 125,374 | 83,011 | 93,338 |
| Percent of RSCs with TTI >= 1.5 | 12.3% | 16.9% | 5.8% | 8.1% |
| Percent of RSCs with LOS F | 30.7% | 35.9% | 23.1% | 27.8% |
| Person Miles Traveled (PMT) | 23,914,430 | 23,976,599 | 24,014,940 | 22,611,887 |
| Person Hours Traveled (PHT) | 729,226 | 758,498 | 702,604 | 691,216 |
| Average Speed (MPH) | 33.3 | 32.3 | 34.9 | 33.5 |

Regional Travel Demand Model Outputs by Scenario



Fiscally Constrained Plan

The 2050 RTP is a fiscally constrained plan, which means the total estimated cost of operating, maintaining, and improving the transportation system does not exceed the forecasted revenue over the horizon of the Plan (2050). Costs were estimated with input from local communities, CDOT, and NFRMPO staff:

- The estimated costs for operating and maintaining the transportation system were developed by extrapolating • current operations and maintenance costs.
- The cost of improving the system is based on the roadway, transit, and active transportation project costs identified by member communities and in local plans.
- The forecasted revenue represents the amount of public and private funding for transportation that is reasonably anticipated from 2024 through 2050.

The chart to the right shows revenue estimates by the entity that controls the funds. While most entities control their own funding, both the NFRMPO and the State control funding from other sources. The NFRMPO controls and awards funds from federal sources and the state controls and awards funding from both state and federal sources. Two-thirds of the funding is controlled by local entities, with the next highest share controlled by the State at 29 percent. The Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) control four percent of the funding. Developers and the NFRMPO both control three percent of the funding.

The majority of the revenue for the 2050 RTP is flexible, meaning it can be spent on a variety of project types. Approximately 17 percent of revenue is from funding programs that fund roadway operations and maintenance while 11 percent is from funding programs for transit systems. Three percent of revenue is dedicated to bike and pedestrian projects, with one percent dedicated to intersection projects.

Bike & Ped

Transit

Flexible



Revenue Estimates by Controlling Entity in Year

of Expenditure (YOE) Dollars, 2024-2050





10

| Expenditure Category | Cost | Dedicated Funding | Flexible Funding | Total Funded | Unfunded |
|--|-------------|----------------------|---------------------|--------------|------------|
| Roadway Operations & Maintenance | \$6,510.17 | \$2,327.31 | \$4,182.87 | \$6,510.17 | \$0.00 |
| Intersection Improvement Projects | \$787.93 | \$119.12 | \$668.81 | \$787.93 | \$0.00 |
| RATC: Operations, Maintenance, and Expansion | \$435.38 | \$347.32 | \$88.06 | \$435.38 | \$0.00 |
| RTC Local: Operations, Maintenance, and Local System Expansion | \$2,790.97 | \$1,463.65 | \$1,327.33 | \$2790.97 | \$0.00 |
| RTC Regional: LinkNoCo & Bustang | \$631.47 | \$9.04 | \$622.43 | \$631.47 | \$0.00 |
| RSC: Capacity Projects | \$3,214.27 | \$0.00 | \$1,419.05 | \$1,419.05 | \$1,795.22 |
| Non-RSC Capacity Projects | \$1,081.96 | \$0.00 | \$621.00 | \$621.00 | \$460.96 |
| GHG Reduction Category Improvements | \$91.00 | \$0.00 | \$91.00 | \$91.00 | \$0.00 |
| Total | \$15,543.15 | \$4,266.44 | \$9,020.54 | \$13,286.98 | \$2,256.18 |

Fiscally constrained roadway and transit projects are shown in the maps below. These projects are anticipated to receive funding through at least one of the sources identified in the plan. Specific project costs are identified in the full <u>2050 RTP</u>. A regional Equity Analysis was completed for the projects, but each project will need to go through final design and approvals prior to construction.

Fiscally Constrained RSC Capacity Projects, 2024-2050

Fiscally Constrained RTC Projects, 2024-2050



Fiscally Unconstrained Plan

Additional projects were provided by NFRMPO local agencies which do not have funding identified to be reasonably available within the timeframe of the <u>2050 RTP</u>. These projects are considered unconstrained. Projects on the Unconstrained Plan Projects list may be funded should additional funding become available. All RTCs are considered fiscally constrained except for the two potential alignments for the Front Range Passenger Rail (FRPR) corridor.



Fiscally Unconstrained RSC Capacity Projects, 2024-2050

NFRMPO Priority Corridors

In early 2020, the Colorado Department of Transportation (CDOT) developed a 10-Year Strategic Pipeline of Projects to create a list of the State's top transportation priorities. The NFRMPO's Regional Transportation Plan (RTP) is a corridor-based plan with only air-quality significant projects included. The Planning Council wanted to provide CDOT with the region's priorities for two reasons:

- To identify which corridor(s) with their associated projects are most important for funding
- To provide a cohesive voice from Planning Council to CDOT on their priority

The six corridors prioritized by the Planning Council include:

- I-25 US287
- US34 SH14
- US85 SH392

The most current version of the list may be found here: <u>https://nfrmpo.org/wp-content/uploads/nfrmpo-priorities-list.pdf</u>.

Air Quality

The NFRMPO must complete a conformity determination because it is located within the Denver Metro/North Front Range (DM/NFR) Nonattainment Area (NAA). The conformity determination report demonstrates the transportation programs and plans in the Northern Subarea meet air quality requirements per the federally prescribed transportation conformity process. Specifically, the programs and plans meet the requirements for the 2008 8-Hour Ozone National Ambient Air Quality Standard (NAAQS), the 2015 8-Hour Ozone NAAQS, and the 1971 Carbon Monoxide (CO) NAAQS.

This demonstration is based on the regionally significant projects in the <u>2050 Regional Transportation Plan</u> (RTP), with which the FY2024-2027 Transportation Improvement Program (TIP) projects are consistent, along with the regionally significant projects in the <u>2045 RTP</u> for the Upper Front Range (UFR), and the FY2024-2027 Statewide TIP (STIP).



Denver Metro/North Front Range 8-hour Ozone Nonattainment Areas and Subareas

8-Hour Ozone Conformity for Denver Metro-North Front Range Northern Subarea (Emission Tons per Day)

| Northern Subarea | Ozone Precursor | Moderate SIP Budgets (2008 Ozone Standard) | 2026 | 2030 | 2040 | 2050 | Pass/Fail |
|---------------------|--|---|------|------|------|------|-----------|
| 2008 Ozone NAAQS | Volatile Organic Compounds (VOC) | 8 | 4 | 3 | 3 | 4 | PASS |
| | Oxides of Nitrogen (NOx) | 10 | 3 | 2 | 2 | 2 | PASS |
| 2015 Ozone NAAQS | Volatile Organic Compounds (VOC) | 8 | 4 | 3 | 3 | 4 | PASS |
| | Oxides of Nitrogen (NOx) | 10 | 3 | 2 | 2 | 2 | PASS |

Greenhouse Gas Emissions

A Greenhouse Gas Transportation Report was completed that demonstrates the <u>2050 RTP</u> and the FY2024-2027 TIP complies with Colorado's greenhouse gas (GHG) Transportation Planning Standard ("GHG Planning Standard") specified in the Code of Colorado Regulations (<u>2 CCR 601-22</u>). The demonstration is based on analysis of all trips conducted using the NFRMPO's 2019 RTDM and the Environmental Protection Agency's (EPA's) <u>Motor Vehicle</u> <u>Emission Simulator</u> (MOVES3) air quality model. The NFRMPO is not relying on GHG Mitigation Measures to demonstrate compliance with the GHG Planning Standard, and as such, this report does not include a Mitigation Action Plan (MAP).

| | 2025* | 2027* | 2030 | 2040 | 2050 | | |
|--|-------|-------|------|------|------|--|--|
| Baseline Plan: 2045 RTP | 1.55 | 1.52 | 1.40 | 1.01 | 0.64 | | |
| Updated Plan: 2050 RTP | 1.47 | 1.45 | 1.28 | 0.90 | 0.56 | | |
| Reduction | 0.12 | 0.07 | 0.12 | 0.11 | 0.08 | | |
| Required GHG Reduction Level | 0.04 | 0.06 | 0.12 | 0.11 | 0.07 | | |
| Pass/Fail PASS PASS | | | | | | | |
| *All values for 2025 and 2027 are interpolated. Note: Some numbers in this chart may not add correctly due to rounding. | | | | | | | |

GHG Emissions Results, Million Metric Tons (MMT) per Year

The GHG analysis includes the roadway, transit, and non-motorized facility improvements, along with other GHGreducing strategies. The <u>2050 RTP</u> relies on four categories of strategies for achieving GHG Reductions. The table below describes improvements based on categories and funding sources. How these projects are incorporated into the modeling is explained in the GHG Transportation Report, and additional detail on these strategies is also available in the <u>2050 RTP</u>.

Modeled Improvements and Funding Sources

| Category | Improvement | Funding Source | | |
|--------------------------|--|---------------------------------|--|--|
| Transit | Updated transit network to match local plans and efforts Acknowledgment of additional funding opportunities LinkNoCo recommendations | CDOT 10-Year Plan, FTA, MMOF | | |
| TDM | TDM program based on local plans and efforts Impact of Council setting aside TMO funding Increase in work from home in all compliance years | MMOF, IIJA | | |
| Operations | Operations • Arterial signal timing improvements by 2030 and additional signal timing improvements through 2050 | | | |
| Active Transportation | Expansion of the local bicycle and pedestrian network by 2030 and increasing to 2050 Completion of Regional Active Transportation Corridors (RATCs) by 2045 | IIJA, MMOF, Local Funds | | |

Public Outreach

Outreach Strategy

The NFRMPO developed the <u>2050 RTP Outreach Strategy</u> in October 2021. The Strategy outlined four phases of the <u>2050 RTP</u> planning process.

Phase 1: Goals and Problem Statement

- Set specific transportation-related goals
- Identify the priorities of communities, elected officials, and stakeholders
- Explain the purpose of the <u>2050 RTP</u> process

Phase 2: Visioning

- Discuss and identify potential projects
- Create vision plans for corridors based on potential projects and existing plans

Phase 3: Scenario Planning

- Create scenarios for the NFRMPO to run through the Regional Travel Demand Model
- Evaluate logic and success of scenarios based on community input

Phase 4: Closing the Feedback Loop

- Follow up with participants with draft 2050 RTP
- Evaluate the final plan to expectations at beginning
- What We Heard

The top themes we heard:



Safety

Transit



Traffic Congestion

4

Multimodal (Bike and Ped)



18 Presentations



204 Map Comments

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* CAUTION! * STEPS MAY BE SLIPPERY USE HANDRAILS WATCH YOUR STEP