

2020

BOULDER

Transportation Report on Progress

1/11/2021



Table of Contents

Introduction

Transportation Master Plan (TMP) Framework	1
Impact of COVID-19	2
Funding	3

Essential Services

Maintenance	4
Maintenance Highlights	5
Project Highlights	6

TMP Measurable Objectives

Introduction	7
Measurable Objectives: 2020 Snapshot	8

Progress Toward the TMP Vision & Goals

Vision	10
Be SAFE	11
Be EQUITABLE	13
Be RELIABLE	15
Provide TRAVEL CHOICES	17
Support Clean Air and Our CLIMATE COMMITMENT	19

What's Next

Appendix

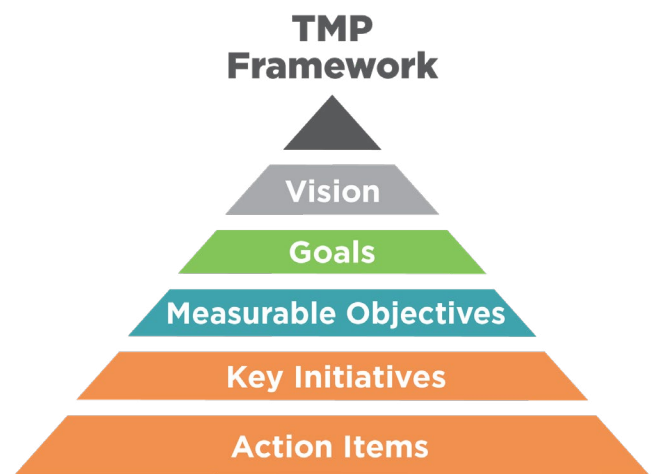
Acronyms	22
----------------	----

This report contains [links](#) to additional information located on city and partner agency web pages. Readers of a printed version of the report are encouraged to visit www.BoulderColorado.gov/Transportation to view a digital version.

Transportation Master Plan (TMP) Framework

Every five years, the city updates the Transportation Master Plan (TMP) which is the Boulder community's transportation blueprint. The TMP outlines our transportation **vision, goals, and objectives** and defines our policies, programs, core services, and investment priorities. A critical element to the successful implementation of the TMP is to track and report on our progress. Every two years, the city produces the Transportation Report on Progress to formally document this assessment. The 2020 report focuses on the **challenges we face and progress we have made** since the 2018 Transportation Report on Progress.

Boulder's transportation vision is to create a **safe, accessible and sustainable** multimodal transportation system connecting people with each other and where they want to go. Boulder continues to be a national leader in the field of transportation. While we have numerous travel options in and around our community, we can do more to enhance our multimodal transportation system for all users. The progress showcased in this report is the culmination of the work of four transportation divisions: **Operations, Maintenance, Capital Projects and Planning**. In early 2020, the City of Boulder's Public Works Department became two different departments to better serve the community: the Transportation and Mobility Department and the Utilities Department.



Centered around five primary goals, this report aims to share the progress that has been made toward our TMP goals with the Boulder community. We evaluate the progress on these broader goals with eight measurable objectives. In line with these goals and objectives, we established 10 key initiatives in the 2019 TMP as well as action items under each initiative that guide the department's work plan. See the [Progress Toward TMP Vision and Goals](#) section for more details.

Subsequent sections of this report include:

- A summary of the department's essential services, with a focus on the maintenance of transportation facilities and key construction projects
- A snapshot of the measurable objectives to assess progress toward targets
- Updates on the various goals, objectives, initiatives, and action items, including highlights of recent projects

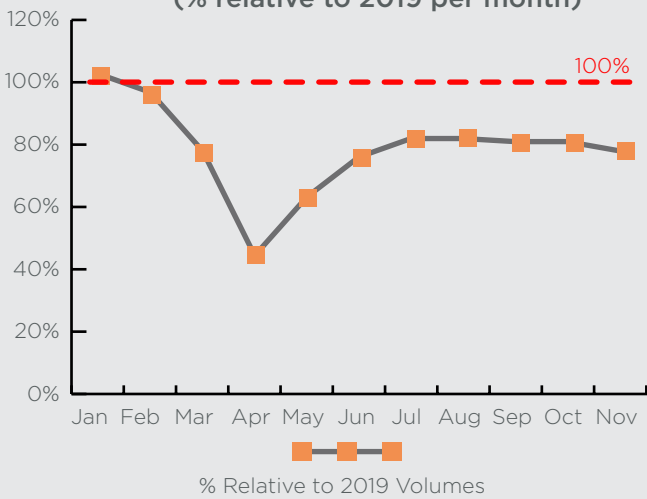


Impact of COVID-19

The COVID-19 pandemic has impacted nearly every aspect of our society, including transportation and mobility. As we highlight accomplishments and challenges in this report, it is important to acknowledge the extent to which the pandemic has affected transportation, ranging from significantly reduced transit service and ridership to reductions in funding for transportation. For the City of Boulder specifically, the Transportation and Mobility Department **lost 20% of its funding** (approximately \$4.5 million) in 2020, as well as several staff positions, as a direct result of the reduction in sales tax revenue due to the pandemic. These budget impacts will continue into 2021. While challenges remain, the city is continually adapting to these disruptions. From creatively morphing roads into “streeteries” for outdoor dining and Shared Streets for recreation, to seeking grants to support older adults’ mobility needs, to focusing on our maintenance and safety priorities, staff are pivoting our services to meet the needs and goals of our community.

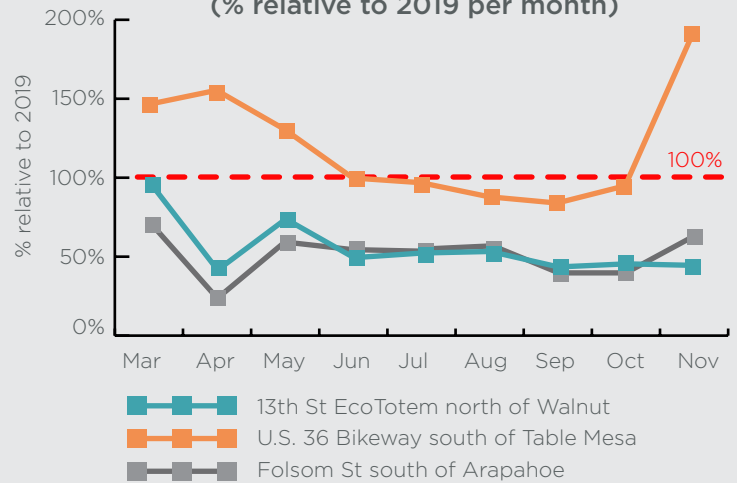
Transportation Data under COVID-19

2020 Motor Vehicle Traffic Volumes
(% relative to 2019 per month)



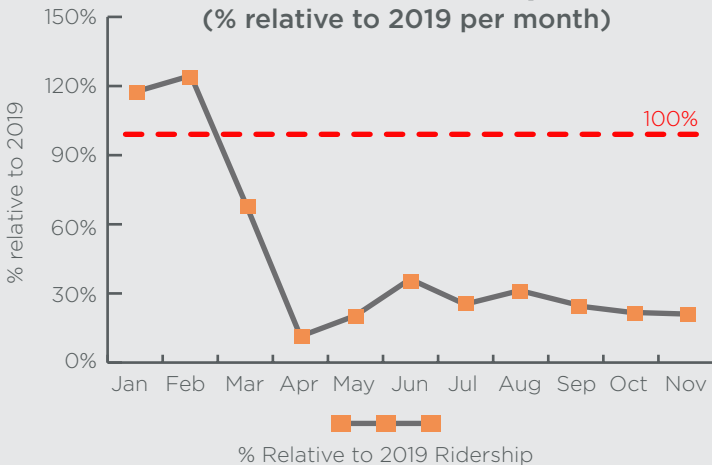
Traffic volumes have decreased overall under COVID-19 conditions. The biggest dip in motor vehicle traffic volumes was in April (44% of 2019 levels), during Stay at Home order. Traffic volumes have generally stabilized around 80% of 2019 levels.

2020 Bike Volumes
(% relative to 2019 per month)



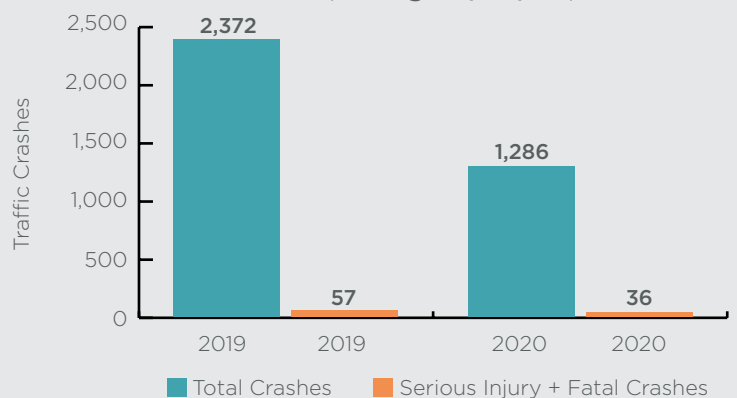
Bike volumes on 13th Street and Folsom Street have declined to about 50% of 2019 levels during COVID-19. US 36 bike volumes have varied from over 80% of 2019 levels to nearly 200%.

2020 HOP Ridership
(% relative to 2019 per month)



Since April, HOP service has been operating at about 75% of pre-COVID-19 service levels, with ridership around 20-25% of pre-COVID-19 levels. RTD has been operating at about 60% of pre-COVID-19 service levels, with ridership trends at 30-40% of pre-COVID-19 levels.

Traffic Crashes
(through 11/30/20)

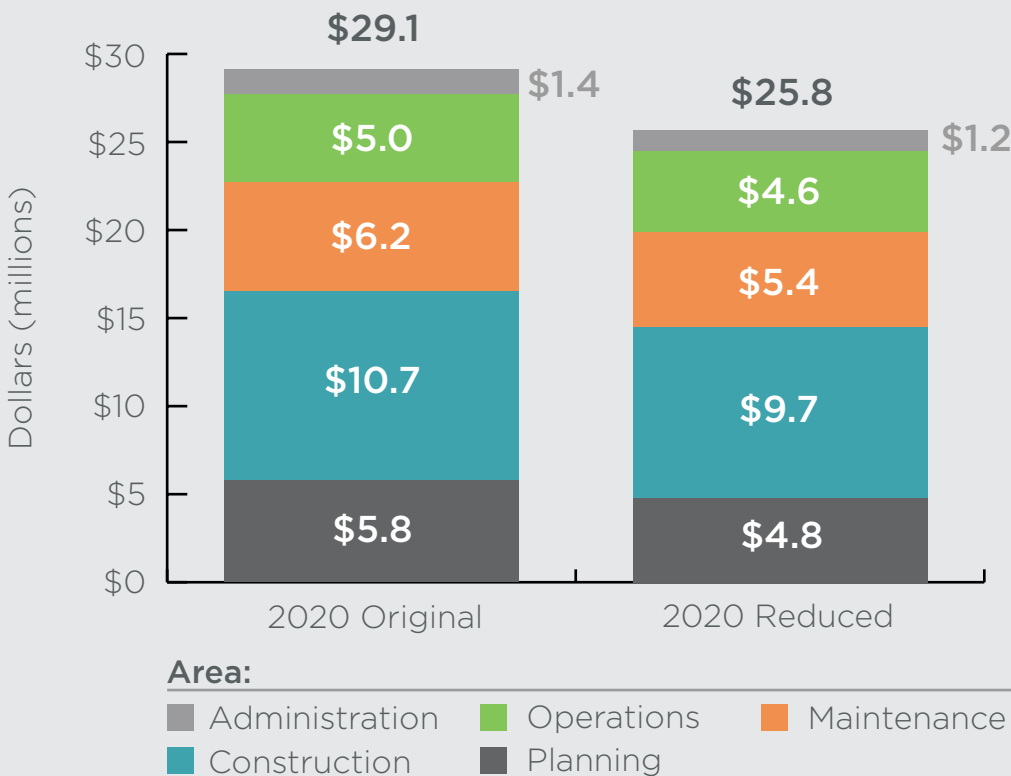


There have been about 45% fewer crashes (total) and 35% fewer severe crashes in 2020 through November compared to the previous year.

Funding

Even before COVID-19 disrupted the world, the TMP documented the funding challenges in transportation. The TMP recommends **diversifying and increasing funding** to meet our goals and objectives. Through a community working group process, led by the Transportation Advisory Board (TAB) and city staff from multiple departments, a tiered and phased approach was developed as part of the TMP to identify potential new funding mechanisms. The first tier (mechanisms that can be implemented in the short-term) had the highest level of consensus between staff and the working group. This tier included a local mobility fee and a county-wide tax. Due to COVID-19, the county-wide tax, which would fund regional multimodal corridor improvements and Bus Rapid Transit (BRT) service, was delayed until 2021. The funding for the required nexus study for the local mobility fee was eliminated in 2020, but work on the local fee will resume in 2021. Staff also continues to explore the next tier of mechanisms including vehicle registration fees, curbside management fees and user fees on regional corridors.

2020 Transportation and Mobility Budget



Due to the impacts of COVID-19, the 2020 Transportation and Mobility budget was reduced by \$4.5M, including almost \$3.5M in workgroup budget reductions and \$1M in savings from underspending in 2019.

Grants

Over the past two years (2019-2020) the Transportation and Mobility Department has brought in \$5.3 million in federal highway grants and \$5.2 million in federal aviation grants. The city has also been granted an additional \$13.4 million in projects to be constructed over the next few years.

Essential Services

The city's Transportation and Mobility Department is responsible for planning, constructing, maintaining and operating Boulder's transportation system. This includes regular maintenance of infrastructure, repair of sidewalks and streets, and other services.

Maintenance

Regular maintenance of transportation infrastructure improves safety, reduces costs and benefits all travelers. Almost 80% of current Transportation and Mobility Department funding is used to operate and maintain the existing transportation system, which includes a wide variety of facilities.



Install and maintain street signs and striping/paint in streets



Upgrade and install new pedestrian curb ramps



Inspect, sweep, maintain and remove snow/ice from multi-use paths



Clean/remove trash and graffiti; remove snow/ice

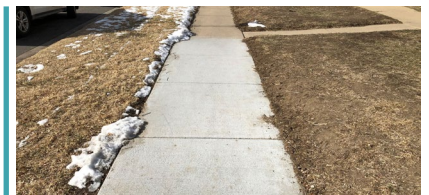


Before



After

Clean/remove graffiti; remove snow/ice



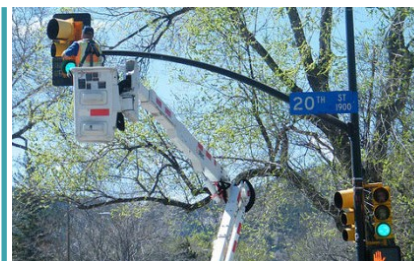
Repair sidewalk segments



Repair potholes



Maintain runway, taxiway and apron pavement



Install, maintain, operate and time traffic signals



Maintain and sweep/clean/spray pavement, curb and gutters; remove snow/ice

Maintenance Highlights

Table Mesa Resurfacing

Table Mesa west of Broadway was resurfaced in 2020. The city leveraged the resurfacing opportunity to restripe the segment based on community feedback and the Low-Stress Walk and Bike Network Plan to provide more comfortable facilities for people biking.



Annual Sidewalk Repair Program

In 2019, the city’s Annual Sidewalk Repair Program upgraded 93 curb ramps to meet Americans with Disabilities Act (ADA) guidelines and ensure that people with disabilities can easily access the sidewalk; the program also repaired sidewalks at several key locations around town.



Boulder Airport Runway Rehabilitation

In October 2020 the Boulder Municipal Airport (BMA) concluded a \$5.5 million runway rehabilitation project ahead of schedule and on budget. Funded entirely by the Federal Aviation Administration (FAA), the project included partial reconstruction of the runway and taxiway system as well as installation of new energy-efficient lighting and signage.



Snow and Ice Removal

In November 2019, Boulder experienced a record winter storm. Snow fell for almost a full day and there was more than two feet of accumulation in parts of the city. Boulder had not seen that much snow fall that quickly since 1997. City snow crews worked around the clock for weeks to clear Boulder’s streets and paths in an effort to ensure safe travel for all modes. The city continues to innovate in our snow and ice removal practices.



Project Highlights

In the past two years, the Transportation and Mobility Department has designed, sought funding for, and constructed innovative transportation projects that will have a positive impact on the community today and for years to come. These major projects aim to exceed industry standards and meet the transportation needs of the community.

Arapahoe Avenue & 13th Street Underpass

Widened the multi-use path to address conflict zones, improve sight distance and reduce high-water closures of path.



Valmont Road Quiet Zone

Implemented physical infrastructure and warning systems to eliminate requirement for train horn sounds at crossings.



Foothills Underpass

Created a more direct crossing of Foothills Parkway, with less-steep slopes than the previous bridge and improved connections to nearby bike and pedestrian routes.



Boulder Slough Multi-use Path

Aligned with the development goals of Boulder Junction, this 10-foot-wide path includes signage and wayfinding and connects with existing and future multi-use paths.



TMP Measurable Objectives

Introduction

The TMP identifies eight Measurable Objectives to determine if the work we are doing is on track to meet our desired outcomes. Some of the measures were new with the 2019 TMP, others were modified slightly, and others have been tracked consistently over several years. These measures are included in the 2020 Snapshot on the next page. The target year for most outcomes is 2030, though there are some exceptions, as noted. The snapshot includes a description of where we started, where we are now, and where we want to be, with an assessment of whether or not we are on track to meet our target. Areas that are red or yellow likely require a change in approach or additional funding to support meeting the overall goals of the TMP. Additional details on these measures and other measures that are being monitored but that do not have specific targets are included in the subsequent Vision and Goals sections on pages 10-20.

2020 Snapshot Key

Met or on track to meet target

Stable but not on track to meet target

Trending in the wrong direction

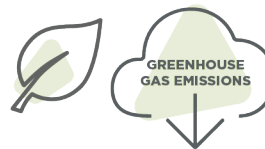
New or updated measure for which don't yet have data to assess a trend

Measurable Objectives

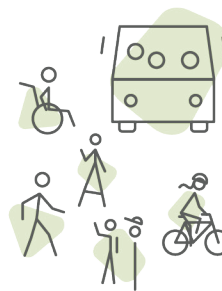
1. Vehicle Miles Traveled (VMT)



3. Climate



5. Vulnerable Populations



7. Travel Time



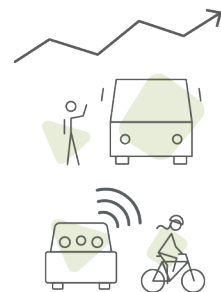
2. Mode Share



4. Safety

VISION
ZERO

6. Transportation Options



8. Walkable Neighborhoods



Measurable Objectives: 2020 Snapshot

Objective	Measure	Where Did We Start?	Where Are We Now?	Where Do We Want to Be?	Trend
1. VMT - Reduce vehicle miles traveled	Daily VMT in Boulder	2.19 Million Miles per Day (1990)	2.49 (2019)	1.90 (2030)	
	Daily VMT per Capita	15 Miles per Person per Day (1990)	12 (2018)	7.3 (2030)	
2. MODE SHARE - Reduce single occupant mode share	Resident SOV Mode Share	44% SOV Trips (All Trips) (1990)	37% (2018)	20% (2030)	
	Non-Resident SOV Mode Share	74% SOV Trips (Work Trips) (2008)	78% (2017)	60% (2030)	
3. CLIMATE - Reduce greenhouse gas emissions (GHG)	GHG Emissions	501,930 MT CO ₂ Emissions (2005)	426,264 (2019)	250,965 (2030)	
	Percent Electric Vehicles	5.5% Municipal 2.7% Community	5.5% Municipal 2.7% Community	100% Municipal (2030) 30% Community (2030)	New Metric - No Trend Yet
4. SAFETY - Eliminate serious injury and fatal crashes	Serious Injury and Fatal Crashes	52 Crashes (2009)	61 (2019)	0 (2030)	
5. VULNERABLE POPULATIONS - Increase access to comfortable walkways & bikeways and local/regional transit	Percent of Population with Access to Comfortable Walkways and Bikeways	89% (2019)	89% (2019)	100% (2030)	New Metric - No Trend Yet
		88% (2019)	88% (2019)		
	Percent of Population with Access to Local/Regional Transit	87% (2019)	87% (2019)	100% (2030)	New Metric - No Trend Yet
6. TRANSPORTATION OPTIONS - Increase transit service hours, bike system miles at least as much as employment grows	Transit Service Hours	374,757 Hours (2016)	378,032 (2018) (1% increase)	4% Increase (between 2016 and 2018)	
	Bike System Miles	179 Miles (2016)	190 (2019) (6% increase)	4% Increase (between 2016 and 2019*)	
7. TRAVEL TIME - Maintain 1994 levels	Auto Travel Time	7.1 - 15.4 Minutes (1994, 1995, 2006, 2007)	8.1 - 16.7 Minutes (2018, 2019)	Generally within about one minute of baseline travel times	
8. WALKABLE NEIGHBORHOODS - Increase share of residents in walkable 15-minute neighborhoods	Percent of Population living in a Walkable Neighborhood	43% (2019)	43% (2019)	80% (2030)	New Metric - No Trend Yet

Green = Met or on track to meet target

Yellow = Stable but not on track to meet target

Red = Trending in the wrong direction

Gray = New or updated measure for which don't yet have data to assess a trend

• Only those measure with specific targets are included in this table

*2018 data not available

Full data from baseline to where we are now

Trendline

Progress Toward the TMP Vision & Goals

The following section introduces the vision for Boulder’s transportation system and then provides an overview of progress made toward each of the five TMP goals, including how we measure progress and what initiatives and actions we are taking to meet each goal.

Vision

Goal

How We Measure Progress

Measurable Objectives

What We Are Doing

Initiatives



Project/Program Highlight
(Action Item Number)

Action Item Links

The 10 Initiatives:

1. Making Travel Safe in Boulder
2. Making Travel Comfortable through a Low-Stress Walk and Bike Network
3. Providing Mobility Options
4. Prioritizing the Pedestrian
5. Shaping Innovation and New Forms of Mobility
6. Delivering Transit in New Ways
7. Connecting to the Region
8. Managing Demand on our System Together
9. Ensuring Equity
10. Funding the Transportation System

The 5 Goals:



Boulder's transportation vision is to create a **safe, accessible** and **sustainable multimodal** transportation system connecting people with each other and where they want to go.

Initiative 10: Funding The Transportation System

Identifying and pursuing appropriate funding is essential in working toward the TMP goals, which is why this key initiative is highlighted separately from the other key initiatives. Each of the TMP goals detailed in this section is dependent upon appropriate funding. To achieve this vision with limited resources, the department needs to **prioritize its investments**. To ensure efficient use of existing travel corridors, the city will prioritize investments in improvements to safety and maintenance for all modes of the existing transportation system while developing creative solutions for the future. Prior to COVID-19, identifying funding solutions for the transportation system was a high priority. Now it is even more imperative.

Select funding sources that are predictable, reliable, and tied to use (10.B)

Due to COVID-19 budgetary impacts, the funding for a local transportation mobility fee study was removed from the 2020 budget. However, staff will be reconvening the community Funding Working Group to prepare to restart study of the local mobility fee in 2021, which will directly address social and economic equity issues.

Implement funding mechanisms for regional travel that enhance performance and raise revenue (10.D)

As part of the design work for our multimodal regional corridors of SH 119 and SH 7, managed lanes and dynamic pricing are key components to operate and maintain the BRT system and multimodal components.

Initiative 10 - Action Item Links

[10.A - Identify Funding Mechanisms that Decisionmakers Support](#)

[10.B - Select Funding Sources that are Predictable, Reliable, and Tied to Use](#)

[10.C - Ensure Lower-Income Residents and Employees are not Disproportionately Impacted by Fees and Taxes](#)

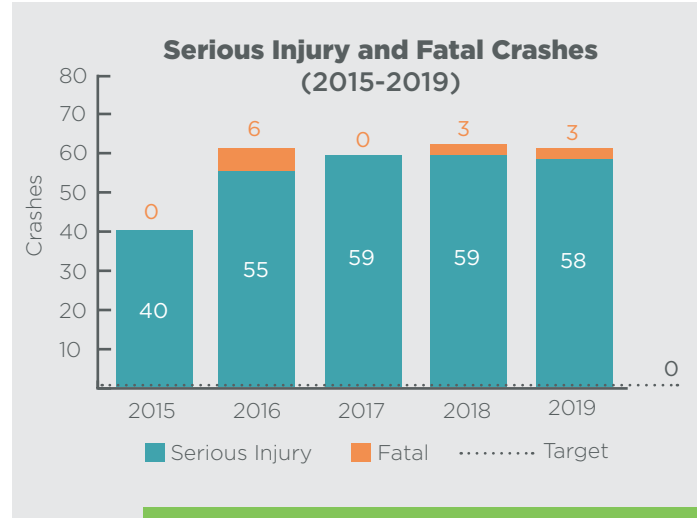
[10.D - Implement Funding Mechanisms for Regional Travel that Enhance Performance and Raise Revenue](#)

How We Measure Progress

Measurable Objective 4: Safety

The **Vision Zero Action Plan (VZAP)** was completed last year and includes action items to make progress toward our community's Vision Zero goal to eliminate all serious injuries and fatalities caused by traffic crashes in Boulder. The VZAP addresses both system-wide safety issues and specific locations with identified crash trends. Progress on these action items has continued over the past year. An evaluation of current and future crash data will assess the effectiveness of location-specific and system-wide changes.

Staff will continue to implement the VZAP with a focus on **major streets, vulnerable users (people walking, biking and on motorcycles), intersections, speed, and permissive left turns**. In 2021, additional emphasis will be placed on education/outreach and enforcement elements of the action plan. Progress to date indicates that additional funding and actions will be required to meet our Vision Zero goal of eliminating all serious injuries or fatalities caused by traffic crashes.



The crash trend seen for the past several years has continued through 2019 (~60 severe crashes per year)

What We Are Doing

Initiative 1: Making Travel Safe in Boulder

Upgrade Signal System (1.B)



In 2020, the City of Boulder received a \$1.35 million grant from the Denver Regional Council of Governments (DRCOG) to fund upgrades to the city's traffic communication infrastructure through 2022. The benefits of these upgrades include:

- 1. Less traffic congestion** - Advanced traffic monitoring equipment and real-time performance metrics will allow for enhanced management of traffic flows to reduce congestion and, as a result, greenhouse gases emitted by vehicles.
- 2. Enhanced ped and bike monitoring** - Transportation staff will be able to access more detailed information on pedestrian and bicyclist travel patterns to improve signal timing and safety for non-vehicular travel.

3. Improved incident response - The existing traffic signals communication system will be upgraded to fiberoptic, improving signal communication and reliability, as well as supporting incident management and crash response.

4. Future multimodal technologies - The system upgrades will lay the groundwork for the installation of future adaptive technologies to improve multimodal travel and safety, such as Transit Signal Priority and pedestrian-protected signal timing at intersections.

Implement 20 is Plenty (1.D)

After research, discussion with the community and approval by City Council, the new default speed limit in the city was lowered to 20 mph in June 2020 from the previous speed of 25 mph. This lower speed limit on local, residential streets is intended to make residents feel safer and reduce speed-related crashes, both of which are Vision Zero goals for the community. Staff is continuing to explore lowering speeds on other street types. Additionally, the department has expanded the Neighborhood Speed Management Program (NSMP), which helps neighborhoods access speed mitigation resources, such as speed humps installation and safety signs.



Initiative 1 - Action Item Links

- 1.A - Vision Zero - Green Pavement Markings
- 1.B - Low-Stress Network
- 1.C - Intersection and Corridor Treatments

- 1.D - Vision Zero Innovation Program
- 1.E - Traffic Safety: Education and Enforcement
- 1.F - Safety Education Programs

Vision Zero - What's New?



Vision Zero is the Boulder community's goal to reduce the number of traffic-related fatalities and serious injuries to zero. At its core, this goal is inspired by the belief that traffic collisions are preventable, and even one fatality is too many. Travel safety is at the core of everything we do, and the city takes a comprehensive travel safety approach with 4 "E"s:

- **Engineering:** Infrastructure and the rest of the built environment
- **Education:** Information about safe travel behavior
- **Enforcement:** Monitoring to ensure people are traveling safely
- **Evaluation:** Tracking how we are doing

Part of "Evaluation" is doing a detailed analysis of crashes and making recommendations for improvement. These are documented in the Safe Streets Boulder Report (SSBR) and companion Vision Zero Action Plan (VZAP). Some of the highlights of progress since completion of the SSBR and VZAP include:

Engineering

Pedestrian Head Starts (also called Leading Pedestrian Intervals, or LPIs) allow pedestrians to start crossing before motor vehicles can start moving. Staff implemented LPIs at 35 crossings in 2019-2020, bringing the total number of LPIs in the city to 78.

Pedestrian-Protect is a new traffic signal timing approach that turns a signal to protected-only left-turns when a pedestrian pushes the button to cross the street. One intersection has had this implemented so far, and the signal system upgrade (described on the previous page) will make it easier to add this at other intersections.

Green Bike Lane Pavement Markings make biking facilities more prominent with an emphasis on highlighting potential conflict points with motor vehicles. Recent installations include 30th Street (Diagonal to Baseline) and Folsom Street (Iris to Colorado) in 2019 and Pine Street (Folsom to 28th) and Table Mesa Drive (Vassar to Broadway) in 2020 with more to come in the Folsom corridor 2020-2021 during the pavement resurfacing.

Education

Education, largely through social media, focused on the new 20 mph default speed limit (20 is Plenty) and the impact of speed on crashes, particularly with vulnerable users such as pedestrians and bicyclists. Future outreach efforts will address unsafe behaviors.

Enforcement

In addition to traffic enforcement by police officers, two automated enforcement efforts are key to reducing unsafe travel behavior: photo speed vans and red-light cameras. In 2019 **photo speed enforcement vans** were deployed for 3,572 hours at 53 locations, monitored 943,474 motorists, and observed 13,496 speed limit violations. The city's **Red Light Violation Photo Enforcement Program** started as a demonstration in 1998 with four approaches and now has 10 enforced approaches. The intersections where the city has posted red light cameras have seen a sharp drop in violations since the program first started in 1998 and a 70% decrease in the annual number of collisions caused by running red lights.

Evaluation

Staff performs ongoing monitoring of treatments being implemented to understand the impact of changes.

Neighborhood Speed Management Program (NSMP)

In 2019 and 2020, the NSMP installed 17 projects, including six designed to meet the new 20 mph speed limit that went into effect in June 2020. Some highlights include:



Through bilingual community engagement with the residents of Boulder Meadows and a strong collaboration with the Transportation Advisory Board, installed 17 speed humps in the neighborhood



Installed a chicane on Upland Avenue as a pilot—innovation in both traffic calming design as well as project delivery

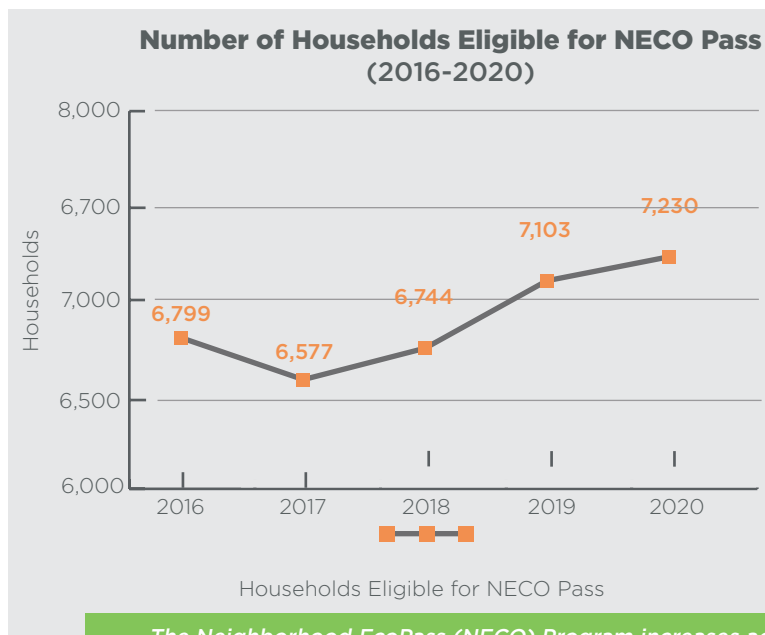


Worked with Boulder Arts and StreetWise to deliver a street mural as a traffic calming experiment on 34th Street in the San Juan del Centro neighborhood, as part of a study for a CU-Denver Masters in Urban and Regional Planning (MURP) capstone project

How We Measure Progress

Measurable Objective 5: Vulnerable Populations

- Providing comfortable facilities for walking and biking makes it easier for people to choose these travel options. A comfortable walkway is wide enough so that two people can walk next to each other, are separated from traffic, and have few commercial driveways to cross. A comfortable bikeway often has vertical separation from vehicle traffic (adjacent to a roadway or as an off-street multi-use path) or is on a street with lower vehicle volumes. The geographic data shows that **89%** of Boulder residents have access to (i.e., live within 200') **comfortable walkways** and **88%** to **comfortable bikeways**.
- Providing comprehensive access to transit for Boulder residents is another new—and important—measure identified in the TMP. Data shows that **87%** of Boulder residents **live within a 1/4 mile of a local or regional transit stop**.
- City financial contributions to senior transportation and paratransit services including **Access-a-Ride** and **FlexRide** continued to increase from **\$160,000** in 2002 to **\$327,154** in 2020. Expected increases in Boulder's elderly population requires additional attention and funding for ensuring local and regional mobility. The city also invests in capital improvements to meet Americans with Disabilities Act (ADA) design guidelines through its annual sidewalk repair and street pavement maintenance programs.



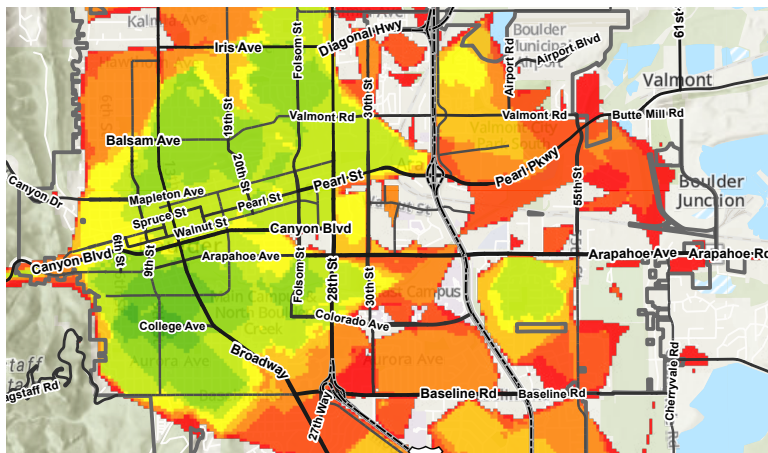
The Neighborhood EcoPass (NECO) Program increases access to transit, lowers single-occupant vehicle use, saves money and enhances community relations. It is an annual transit pass purchased by residents or a neighborhood organization for all members of participating households.



- **Reducing vehicle trips to and from school** is a primary goal of the city and the Boulder Valley School District (BVSD). The TMP called for a new measure to track how many students walk, bike and take a bus to school. BVSD is exploring consistent and comprehensive ways of collecting this data, as well as specific targets for each school level, for future reports.

Measurable Objective 8: Walkable Neighborhoods

Walkable (pedestrian-friendly) neighborhoods mean that people walking, pushing strollers and in wheelchairs can access destinations within a 15-minute trip. The 2019 TMP introduced a new methodology for evaluating the share of walkable neighborhoods in Boulder and found that **43%** of Boulder residents **live in walkable neighborhoods**.



High Walkshed Score (Green) Low Walkshed Score (Red)

What We Are Doing

Initiative 2: Making Travel Comfortable through a Low-Stress Walk and Bike Network



Implement Neighborhood GreenStreets (2.A)

In 2019, 13th Street became the first Neighborhood GreenStreet. Neighborhood GreenStreets are low-traffic streets prioritized for walking and biking, where people of all ages and abilities feel safe and comfortable. The city installs safety signage, crossings, paint markings and other treatments to these streets to improve pedestrian and bicyclist safety. Creating GreenStreets is part of our Vision Zero goals to improve safety and comfort for walking and bicycling. For 2020-21, staff is focused on implementing high-priority GreenStreet corridors in the Goss-Grove Neighborhood.

Initiative 2 - Action Item Links

- 2.A - Implement Neighborhood GreenStreets
- 2.B - Incorporate Multimodal Design into Corridor Projects
- 2.C - Enhance Low-Stress Bike Network
- 2.D - Continue Path System Build Out
- 2.E - Recommend Improvements in Pedestrian Improvement Areas

Initiative 4: Prioritizing the Pedestrian



Increase Winter Safety for Pedestrian Facilities (4.C)

The City of Boulder is committed to multimodal transportation, including year-round access to bus transit. The current snow and ice removal budget supports contractors hired by the city to clear approximately 40 high-ridership bus stops after snowfalls resulting in at least two inches of accumulation. With support from the Pedestrian Action Committee, the city's Shovel-a-Stop Program is a new effort to increase the number of bus stops cleared after each snow event through community volunteer support. Clearing bus stops helps prevent slips and falls and increases safety and accessibility for bus riders of all ages and abilities.

Initiative 4 - Action Item Links

- 4.A - Improve Safety as Identified in Vision Zero Action Plan
- 4.B - Implement Low-Stress Walk Network
- 4.C - Refine Snow and Ice Removal Practices
- 4.D - Update Pedestrian Crossing Treatment Guidelines
- 4.E - Implement the ADA Self Evaluation and Transition Plan

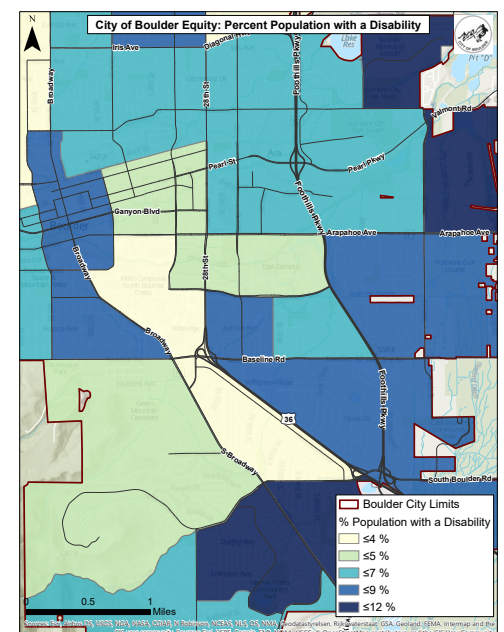
Initiative 9: Ensuring Equity

Create Community Wide Equity Index (9.A)

Staff is working on a statistically accurate and reliable way to create a mapped equity index--including populations of color, disability status, income levels and other factors--to ensure we are meeting the needs of the entire community. This effort is still in progress and will be incorporated into the prioritization of projects and programs.

Initiative 9 - Action Item Links

- 9.A - Incorporate Community Wide Equity Index
- 9.B - Pursue Fare Free Transit
- 9.C - Implement the ADA Self Evaluation and Transition Plan
- 9.D - Require Mobility Providers Offer Low-Income Fare Products



How We Measure Progress

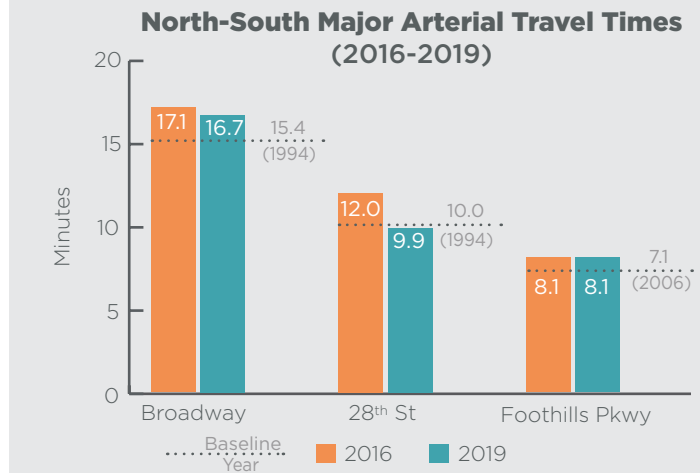
Measurable Objective 7: Travel Time

The 2019 TMP has the goal of maintaining 1994 travel times on Boulder arterial streets, as well as improving travel time reliability and predictability. The travel time of a vehicle depends on both the number of other vehicles on the roadway and the signal timing*. Keeping travel times consistent requires continued shifts in travel modes. Transit travel time advancements such as the managed lanes on US 36, the planned BAT (business access and transit) lane expansion on 28th Street and traffic signal priority on Arapahoe Avenue all improve reliability for transit riders and make transit a more viable option, which reduces the number of single-occupant vehicles on our roadways. Planning also continues for advancing regional BRT service along SH 119 (via 28th Street) and SH 7 (via Arapahoe Avenue). The city regularly counts vehicles on key arterial roadways in the city, as well as on roadways entering the city. In addition, travel time data is now being collected on three east-west arterials and three north-south arterials every three years. In general, travel times have remained within about one minute of the baseline travel times (1994 and later).

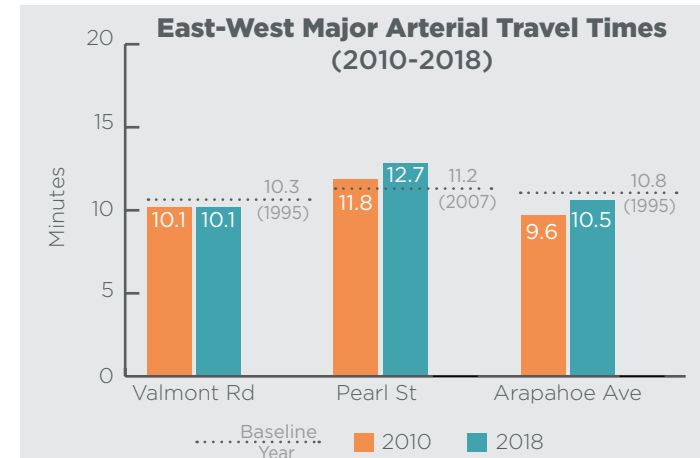
→ Traffic volumes on key arterial roadways internal to the city have increased by approximately **5%** between **2014 and 2019** but are approximately **9%** lower than the peak seen in 2001.

→ Traffic volumes on roadways entering the city have increased by approximately **11%** between **2014 and 2019** and now exceed the previous peak experienced in 2003 by **4%**.

*See also Signal System Upgrade (2.B) under Be SAFE



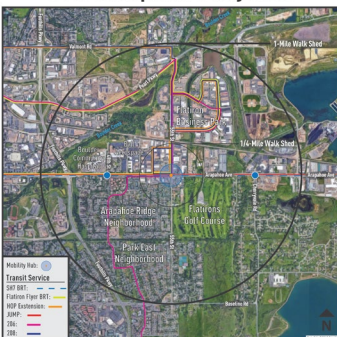
Travel times for the Broadway and Foothills corridors are slightly higher than the baseline travel times. Broadway travel times have decreased slightly over the past few years, while Foothills travel times have remained constant. The most recent 28th Street travel time is slightly lower than the baseline travel time.



Travel times for the Valmont and Arapahoe corridors are slightly lower than the baseline travel times. The most recent Pearl travel time is higher than the baseline and has increased slightly over the past few years.

Initiative 5: Shaping Information and New Forms of Mobility

55th & Arapahoe Study Area



Develop Mobility Hubs (5.F)

The 55th Street and Arapahoe Avenue area is identified in city plans as a future mobility hub with transit-oriented development. Mobility hubs typically combine key transit stations with secure bicycle parking as well as bike sharing and carsharing access to seamlessly integrate a range of transportation options. For instance, riders can use smartphones and smartcards for reservations and fare collection. In 2019, the city received federal funding for planning and design for this area, complementing the ongoing work of the East Boulder Subcommunity Plan. The resulting Station Area Master Plan is expected to be complete in 2021 and will provide a blueprint for future development with a mix of housing types and land uses in proximity to transit options, including the future SH 7 Bus Rapid Transit corridor (see also 7.F).

Initiative 5 - Action Item Links

- 5.A - Develop Dynamic Pick-Up and Drop-Off Zones
- 5.B - Include Smart Street Elements in All Future Projects
- 5.C - Partner with TNCs to Support Shared & Electric Vehicle Trips

- 5.D - Explore Dynamic Pricing for Curbside Management
- 5.E - Modify Parking Code to Promote Mixed-Use Development
- 5.F - Enhance First and Final Mile Connections Near Mobility Hubs

Initiative 7: Connecting to the Region

Promote & Support Vanpool and Rideshare Services (7.D)

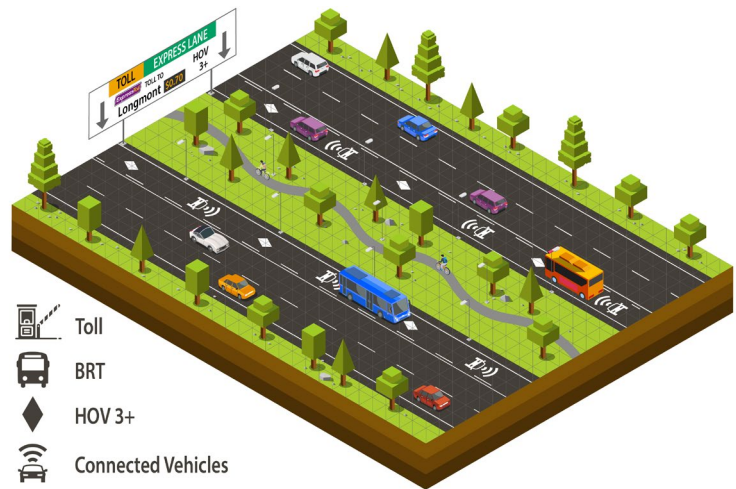


Vanpools are meeting an important service need as RTD continues to suspend and/or reduce frequency of routes. The city has been collaborating with our vanpool partners, Enterprise, Denver Regional Council of Governments (DRCOG), and the North Front Range Metropolitan Planning Organization (NFRMPO), to develop creative, safe and reliable transportation solutions for employee commutes. With the recent suspension of the Regional Transportation District (RTD) GS bus route between Boulder and Golden, these partners have been key in supporting essential workers accessing their workplaces. The city currently provides a \$20 per month subsidy for all residents and employees who utilize vanpools for their commute.

Implement High Quality, Reliable Transit (7.F)



Implementation of BRT corridors is important for providing high quality, reliable transit, particularly connecting Boulder to nearby communities. Recently Boulder has worked with regional partners to advance two corridors: **SH 119 to Longmont** and **SH 7 to I-25/Brighton**. The SH 119 corridor will include BRT, express/managed lanes, and a commuter bikeway that will result in improved multimodal access and faster and more reliable travel times to address growing congestion, improve safety, and support economic vitality in the Northwest area transportation network. Limited segments of SH 119 corridor improvements, such as the 28th Street Business Access Transit Lanes, are expected to be constructed beginning in 2022. The SH 7 corridor will include regional BRT, a regional bikeway, pedestrian improvements, first and final mile connections, and future innovative transportation modes that will result in improved safety, multimodal access and faster and more reliable travel times. Preliminary engineering for corridor improvements is expected to begin in 2021-22.



SH 119 BRT Concept

Initiative 7 - Action Item Links

- 7.A - Advance Designs and Secure Funding for Regional Corridor Projects
- 7.B - Improve Regional Transit Service in US 36
- 7.C - Expand FLEX Service Between Fort Collins and Boulder

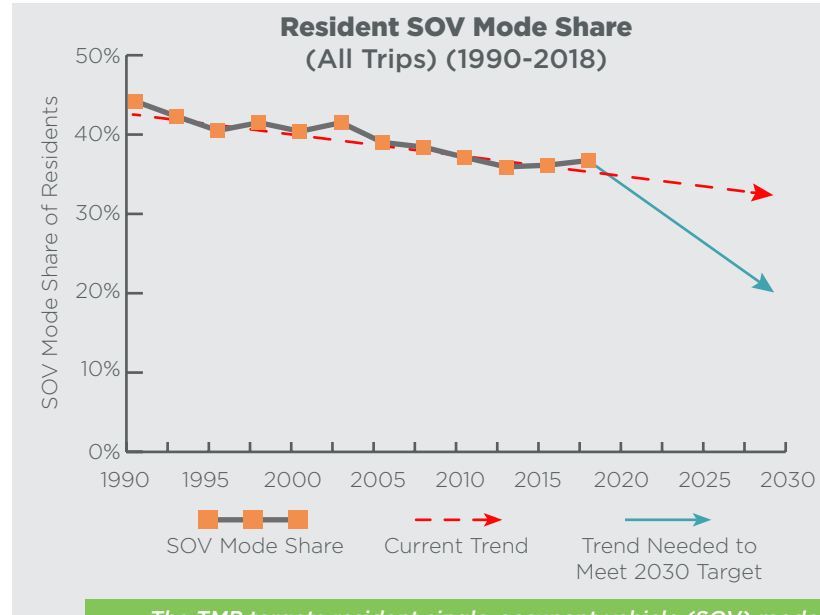
- 7.D - Promote Regional Vanpool and Ridesharing Services
- 7.E - Actively Participate in Regional Partnerships and Coalitions
- 7.F - Plan, Design, and Implement High Quality BRT

How We Measure Progress

Measurable Objective 2: Mode Share

→ The 2019 TMP focuses on reducing the share of single-occupant vehicle (SOV) trips, as they cause the most congestion and contribute to greenhouse gas emissions. The TMP includes different targets: SOV trips by residents (all trip types) and SOV trips by non-residents (work trips). Data for **resident SOV mode share** is shown in the chart to the right. For residents, the **TMP targets SOV mode share to be no more than 20% of all trips by 2030**; it is currently hovering around 36%.

→ For **non-residents**, the **TMP targets SOV mode share to be no more than 60% of all work trips by 2030**. Recent data shows the non-resident SOV mode share to be hovering around 80%. Similar to the residential mode share, unless substantial reductions to SOV work trips by non-residents are made over the next few years, we are not on track to meet our target.



The TMP targets resident single-occupant vehicle (SOV) mode share to be no more than 20% of all trips by 2030. Recent data shows the mode share currently hovering around 36%. Unless substantial reductions to SOV trips are made over the next few years, we are not on track to meet our target.

Measurable Objective 6: Transportation Options

The 2019 TMP strives to have transportation options grow at least as quickly as employment grows. Based on employment data from the State of Colorado, the number of jobs grew **4%** between 2016 and 2018, while the number of transit service hours grew **1%**, and the number of bike system miles grew **6%**.

What We Are Doing

Initiative 3: Providing Mobility Options

Explore Shared Micromobility (3.C)



With an aim of increasing options for moving around town, staff have explored shared micromobility opportunities in recent years. This has resulted in new city ordinances and pilot programs including the following:

- In July 2020, city council adopted Ordinance 8398 which allows staff to explore a dockless e-bike share service in the city. In September 2020, City Council adopted Ordinance 8423 which allows staff to also explore a shared e-scooter service.
- Both dockless e-bikes and e-scooters will be folded into a comprehensive Shared Micromobility Program. In 2021, shared micromobility operator(s) will be selected to provide safe and equitable micromobility services throughout the City of Boulder.

Initiative 3 - Action Item Links

- 3.A - Implement the Renewed Vision for Transit
- 3.B - Expand the High-Frequency HOP Service
- 3.C - Explore Shared Micromobility and Expand Access to Shared E-Bikes

- 3.D - Explore Incentives for Residents to Purchase E-Bikes
- 3.E - Identify Locations, Policies, and Regulations to Support Mixed Land Use

Initiative 6: Delivering Transit in New Ways



Electrify & Expand HOP Services (6.B)

Refinement of the HOP expansion plan continues, which will feature four HOP routes radiating throughout the community. Three electric buses are planned for delivery in 2021 to support HOP services, and city and Via Mobility Services continue to partner in securing the additional capital funding necessary for the electrification of the entire HOP fleet and related charging infrastructure. Expanded HOP service is anticipated when ridership levels and economic conditions rebound from the effects of COVID-19.

Initiative 6 - Action Item Links

6.A - [Expand City Role as Transit Provider](#)
6.B - [Electrify and Expand HOP Services](#)

6.C - [Explore Formation of Boulder County Transit Agency](#)
6.D - [Seek Additional Funding Sources for Local and Regional Transit](#)

Initiative 8: Managing Demand on Our System Together

Expand Transit Pass and Ticketing Programs (8.A)

While staff supported and welcomed additional Neighborhood EcoPasses and Business EcoPasses to the program in late 2019 and early 2020, transit service and ridership was significantly reduced due to COVID-19. Staff are currently conducting two pilot programs in Boulder communities with the aim of providing better access to transit in low-income neighborhoods while utilizing RTD's existing pass programs. A focus for 2021 will be providing transit access for Boulder residents and employees in a more equitable manner.



Conduct Clean Energy and Shared Mobility Pilots (8.C)



The City of Boulder and Fermata Energy are studying how the batteries in electric vehicles can help reduce the city's building energy costs with an innovative pilot at the North Boulder Recreation Center. Typically, electric vehicle chargers provide energy in one direction: from the energy grid or building to the car. In this pilot, a charging station has been installed that enables two-way electricity: from the building to the car and from the car back to the building. This technology, called vehicle-to-building, can provide the city new ways to manage its energy load and reduce energy costs. In the pilot, Boulder will connect one of its electric fleet vehicles to the vehicle-to-building charging system. The system then connects to the

recreation center's electricity system. The fleet car will charge at night, when building energy demand is low, and discharge the battery to the recreation center during the day, when the building's demand peaks. The goal is to reduce peak demand which in turn can reduce the monthly bill. Further, if the city can reduce peak demand and save funds through this project, it may unlock new use cases for expanding the city's electric vehicle fleet. Not only can electric vehicles help meet our climate goals and reduce air pollution, but they could also be a strategy to reduce operation costs and enhance resilience.

Initiative 8 - Action Item Links

8.A - [Expand Transit Pass and Ticketing Programs](#)
8.B - [Expand the Access District Approach](#)
8.C - [Conduct Clean Energy and Shared Mobility Pilots](#)

8.D - [Implement TDM and Parking Strategies that Use Land Efficiently](#)
8.E - [Grow Partnerships with Boulder Chamber](#)
8.F - [Partner with Local TMO's to Enhance Commute Solutions](#)

How We Measure Progress

Measurable Objective 1: Vehicle Miles Traveled

- After peaking in 2002, **vehicle miles traveled (VMT) in Boulder has generally stabilized at just under 2.5 million vehicle miles per day**. Until 2013 the target was to maintain levels at 2.44 million VMT per day. The new target for 2030 is a 20% reduction. Based on current trends we are not on track to meet that target.
- The TMP also includes a measure for **VMT by residents only**, targeting **7.3 miles per day per resident by 2030**. Resident VMT has been generally declining since 1990; however, we are still not on track to meet the 2030 target.
- For non-residents **who work in Boulder**, the **average commute distance** is hovering around **18 miles one-way**.

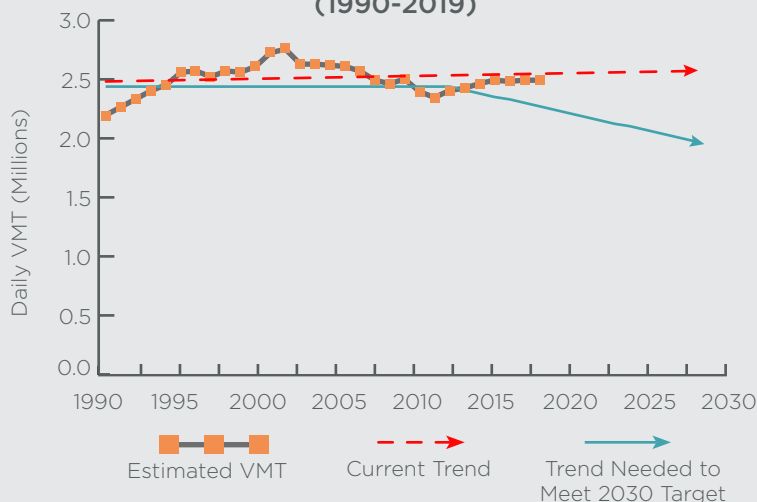
Measurable Objective 3: Climate

The transportation sector has historically generated just under **30% of total emissions** in Boulder (with commercial and industrial buildings generating over half of all emissions). Transportation-related emissions are dependent on the number of miles traveled (VMT), as well as the type of fleet. Although VMT has stabilized, the fleet mix has changed, particularly with more electric vehicles (EVs) on the road such that GHG emissions have declined; however, the trend is not decreasing enough to meet the target of reducing GHG emissions 50% over 2005 levels by 2030.

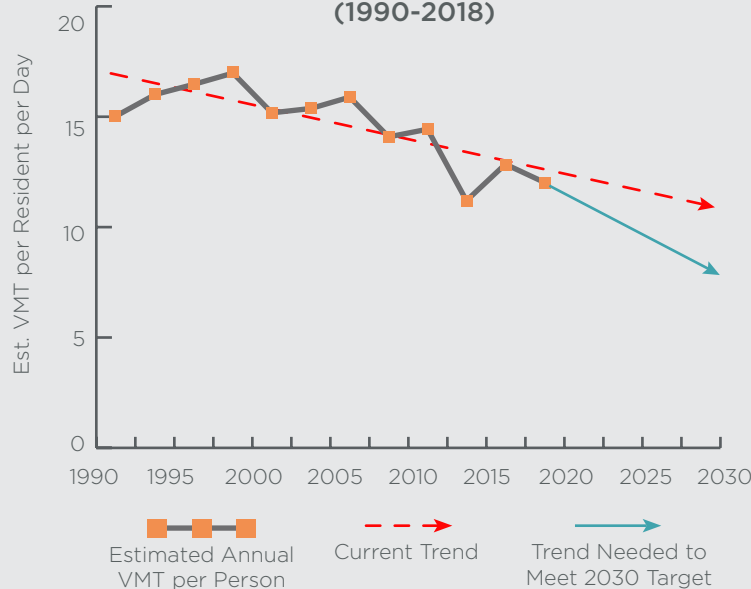
The TMP also includes tracking of electric vehicles:

- The **City of Boulder** has over 25 EVs/hybrid vehicles currently in its fleet with plans to increase over time. The GO EV City resolution passed in September 2020 established a 100% electric or zero-emission vehicle goal (as technology and budgets allow). The city is working with other municipal partners and with shared fleets such as taxis, rideshare and carshare companies to transition shared fleet vehicles to full electric fleets by 2030.
- The **HOP** currently has a fleet of 15 buses; one of the 15 has been converted from diesel to electric. Three battery electric buses are also on order for delivery in early 2021 (two are new buses, one is a replacement). The total fleet will grow to 17, and EVs will comprise 17.6% of the total fleet.
- Within **Boulder** there were **2,559 EVs** registered (2.7% of all registrations) in 2019.
- The GO EV City resolution also sets the goal of transitioning **30%** of all vehicles within the city to zero emissions by **2030**, and **100%** of all vehicles by **2050**.

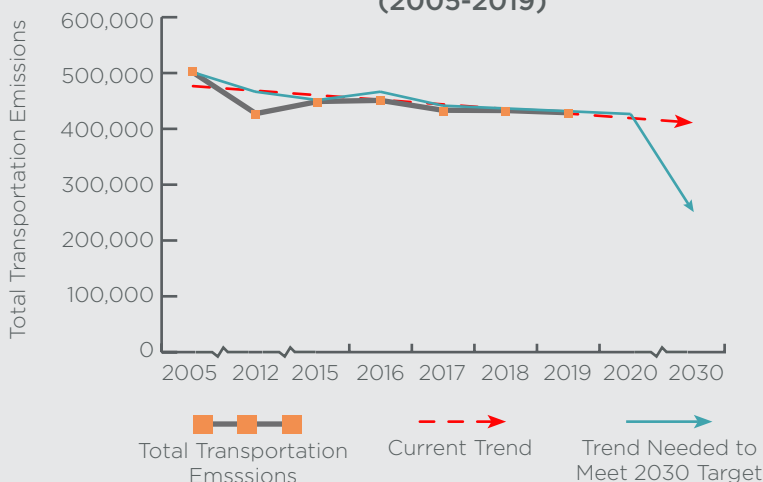
Total Daily VMT (1990-2019)



Estimated VMT per Person per Day (1990-2018)



Total Transportation Emissions (2005-2019)



What We Are Doing

Initiative 5: Shaping Innovation and New Forms of Mobility

Create a Dynamic Curbside Management Strategy (5.A)



In 2020, the Transportation and Mobility Department and the Community Vitality Department kicked off the project Revitalizing Access in Boulder, a deliverable of the Access Management and Parking Strategy (AMPS), which seeks to measure and appropriately value public space for vehicle storage. The creation of a new dynamic pricing approach will align with community priorities as well as commercial and visitor needs. The pricing approach will be applied to city-maintained on-street and off-street parking spaces, including adjustments to fees for parking permits and fines for parking violations.

Initiative 5 - Action Item Links

5.A - Create a Dynamic Curbside Management Strategy
5.B - Include Smart Street Elements in All Future Projects
5.C - Partner with TNC's to Support Shared and Electric Vehicle Trips

5.D - Explore Dynamic Pricing for Curbsides
5.E - Modify the Parking Code to Promote Mixed Use Developments
5.F - Utilize Advanced Mobility to Address First and Final Mile Connections

Initiative 7: Connecting to the Region

Advance Design of and Secure Funding for Regional Corridor Projects (7.A)

The City of Boulder continues to partner with local, regional and federal partners to advance planning, design and implementation of regional corridor projects, with recent major advancements for the Diagonal/SH 119 and East Arapahoe/SH 7 corridors ([see also 7.F](#)):

- The city worked with local partners to secure funding for the SH 119 corridor. Planned regional BRT, express/managed lanes, and a commuter bikeway will result in improved multimodal access and faster and more reliable travel times to address growing congestion, improve safety and support economic vitality in the Northwest area. Near-term improvements within the city of Boulder include the final design and construction of Business Access and Transit lanes along 28th Street between Valmont Road and Iris Avenue.
- In 2019, the city was awarded Denver Regional Council of Governments (DRCOG) funds to complete missing links on the multi-use path system along East Arapahoe. Longer term, the city is engaged with the SH 7 Coalition to advocate for regional corridor funding.



Initiative 7 - Action Item Links

7.A - Advance Designs and Secure Funding for Regional Corridor Projects
7.B - Increase RTD Service Along the US 36 Corridor
7.C - Maintain and Expand the FLEX Service to Fort Collins

7.D - Promote Existing and New Ridesharing Services
7.E - Participate in Regional Partnerships and Coalitions
7.F - Plan, Design, and Implement High-Quality BRT

What's Next

The 2020 Snapshot of Measurable Objectives shows that while the City of Boulder has made significant progress in some areas, work remains to meet our transportation goals. One of the biggest challenges to meeting these goals is limited funding, including in regional transit service.

Moving into 2021 and beyond, the Transportation and Mobility Department will implement the action items outlined in the 2019 TMP to meet our goals and continue to explore additional funding opportunities to help accelerate progress toward them. Some of the key initiatives already in progress include:

- Implementing the Vision Zero Action Plan
- Partnering on regional multi-modal corridors
- Improving transit fare and pass options, including the EcoPass
- Pursuing additional funding options
- Construction of key projects, including improvements on North Broadway, the 30th Street/Colorado Underpass and 19th Street

We recognize the need to develop innovative solutions as we take into account the changing landscape of how people will travel in a post-pandemic world. As a city, we are resilient in the face of adversity. And as staff, we will continue to maintain and improve our existing system, working diligently to make the built environment safer and more equitable for all residents.



Appendix

Acronyms

AMPS - Access Management and Parking Strategy

BAT - Business Access and Transit

BECO - Business EcoPass

BRT - Bus Rapid Transit

COB - City of Boulder

CU - University of Colorado

DRCOG - Denver Regional Council of Governments

EV - Electric Vehicle

GHG - Greenhouse Gas

NECO - Neighborhood EcoPass

NFRMPO - North Front Range Metropolitan Planning Organization

NSMP - Neighborhood Speed Management Program

RTD - Regional Transit District

SH - State Highway

SOV - Single-Occupant Vehicle

TAB - Transportation Advisory Board

TMP - Transportation Master Plan

VMT - Vehicle Miles Traveled

VZAP - Vision Zero Action Plan

VZ - Vision Zero