



# TRANSPORTATION MASTER PLAN

## EXISTING CITY

DRAFT REPORT

MARCH 20, 2019



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DRAFT

## INTRODUCTION

The mobility framework for the City of Littleton has served the City for more than 100 years, connected to Denver and beyond by the Denver & Rio Grande Railroad and section line road corridors that still make up the major transportation framework today. This well-conceived and planned framework hosts a City of nearly 48,000 and has contributed to the City being recognized as one of the best places to live in Colorado. Littleton has several important and highly-functional transportation assets that contribute to its economic vitality. These include the major arterial network that provides connectivity to the Denver region, light rail service through the heart of the city, and the very popular trail network that connects citizens to the natural beauty within the City and region.

However, recent population growth within Littleton and surrounding areas has placed new burdens on this system. The City's arterials and expressways, and often its collector streets, swell with traffic beyond their physical capacity during the daily rise and fall of regional commuting traffic. The City is also significantly impacted by the regional transit solutions that have been deployed to date. For example, the Regional Transportation District (RTD) park-n-ride lots at the Mineral Avenue and Downtown Littleton Stations fill to capacity by 7am with commuters from Highlands Ranch, Southglenn, Columbine and Ken Caryl. The ability of RTD rail and bus services to meet the local needs of the City are compromised by the undersupply of service.

There are many plans being implemented by CDOT, RTD and adjacent municipalities that will affect traffic and mobility in Littleton over the next several years. There are also tremendous increases in regional growth south and west of Littleton that will increase pressure on the major thoroughfares and transit networks that surround and traverse the City. The implications of these changes will need to be understood and incorporated into our City's plans moving forward.

The purpose of this Transportation Master Plan (TMP) is to develop near term and long range solutions that preserve community character, protect quality of life and create economic opportunity. Creating barriers and redirecting traffic away from the City are not realistic solutions. The TMP should find the balance where streets are vibrant, safe and promote a sense of place while providing multimodal choices for users of all ages and ability. The TMP will serve as the reference for elected leaders and policy makers to advocate for the regional needs of the City and to articulate the City's position on regional projects. The TMP will also inform the Capital Improvement Plan for streets and transportation infrastructure, setting out priorities along a logical and fiscally sound progression that fulfills the Master Plan over a period of years.

## SYSTEMATIC APPROACH

The Transportation Master Plan applies an approach to planning that focuses on providing a transportation system that works for all users. In the context of the City of Littleton and the concurrent update to the Comprehensive Plan, this means the plan maps out a complete network of streets that finds the balance where streets are vibrant, safe and promote a sense of place while providing multimodal choices for users of all ages and ability. Through the Envision Littleton process, two guiding principles were identified that exemplify this approach – Connected and Active. This systematic approach emphasizes the following major themes:

**Community:** No plan or project can truly be successful without engaging the community. This is about returning streets to the community and improving a community's quality of life.

**Choices:** The healthiest and most vibrant communities understand that bicycling, walking and transit are critical components of the transportation system. A complete system not only addresses safety and mobility concerns, but also provides encouragement of active living, ultimately improving community health.

**Capacity:** Although a multimodal approach can increase the overall person capacity of a roadway corridor, the impact on auto capacity is often a concern that must be addressed. A toolbox of analysis techniques and operations strategies to manage roadway capacity has been identified to help balance mobility needs across modes.

**Calming:** Plans and designs should create context-appropriate streets that



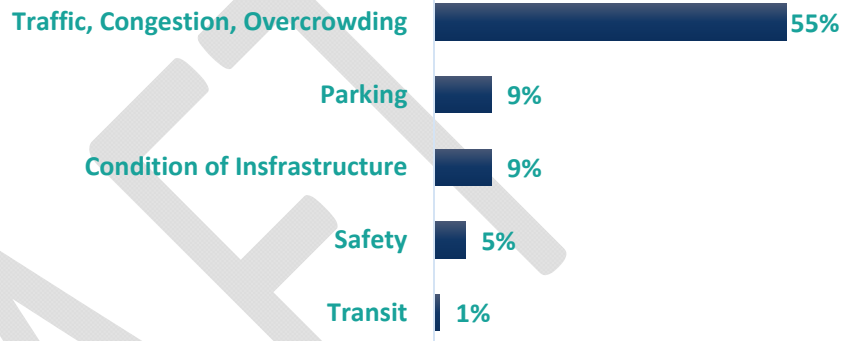
consider the needs of all potential users, encourage appropriate driving behaviors and speed, and provide welcoming environments for non-motorized users.

**Connections:** We know that providing connections between sites, neighborhoods, modes and jurisdictions is crucial to maintaining healthy transportation systems and communities. A systematic approach to providing a complete network can facilitate key connections within the community.

An inventory of the Littleton transportation network was conducted, focused on major user categories: people in autos, people using transit, and people using active transportation modes (including bicyclists and pedestrians). What follows is a summary of the inventory of conditions for these users.

## ENVISION LITTLETON PUBLIC FEEDBACK

Through the Envision Littleton Visioning process, more than 870 people responded to surveys requesting input on what issues are most important to address in the City. Of these, more than half of respondents cited traffic, congestion, or overcrowding as a primary concern. Other mobility concerns included parking, condition of infrastructure, transit, and safety.



*“Maximize walkability and interconnectedness between living and business spaces.”*

- quote from 2018 Resident Survey

*“The amount of traffic caused by too many people is negatively affecting my quality of life.”*

- quote from 2018 Resident Survey

*“Crossing Santa Fe for park, river, or shopping is too much risk.”*

- quote from 2018 Resident Survey

## MODE: AUTO

People who drive their private automobiles (autos) make up the majority of travelers in Littleton. As ride-hailing services have proliferated in the region, an increasing portion of auto travelers are using these services as well. In general, traffic volumes have increased and congestion in Littleton has worsened throughout its recent history as more people have moved to the City and to surrounding communities.

That said, Littleton is characterized by good access to major regional auto corridors, including Santa Fe Drive (US 85), Broadway, Belleview Avenue, County Line Road, Bowles Avenue/Littleton Boulevard, Mineral Avenue, and C-470. These routes have served the residents of Littleton well, providing convenient access to regional job and activity centers.

Internal city circulation is characterized by a network of collector streets that provide access to neighborhoods.

Major issues related to auto travel within the City include:

- **Congestion:** Growth within and surrounding Littleton has resulted in increased congestion on many streets.
- **Barriers:** the city is crossed by multiple barriers limiting connectivity. While some areas of the city have a strong internal grid, barriers like the South Platte River, Santa Fe Drive, the rail corridor, and even some suburban neighborhoods exist that break up the grid and force traffic to use one of only a few major connections, resulting in traffic congestion.
- **Safety:** More than 5,528 crashes occurred in Littleton during the 5-year period from 2011 to 2015 – about three per day. The social and economic impacts of these crashes are vast.
- **Parking:** Downtown parking has been identified as a major issue, and has been cited as a reason for avoiding coming to the downtown retail and commercial district.

## CONGESTION

According to INRIX (a Big Data aggregator), delay on arterials and highways within Littleton have an annual economic impact of:

**\$25 to \$33 million per year.**



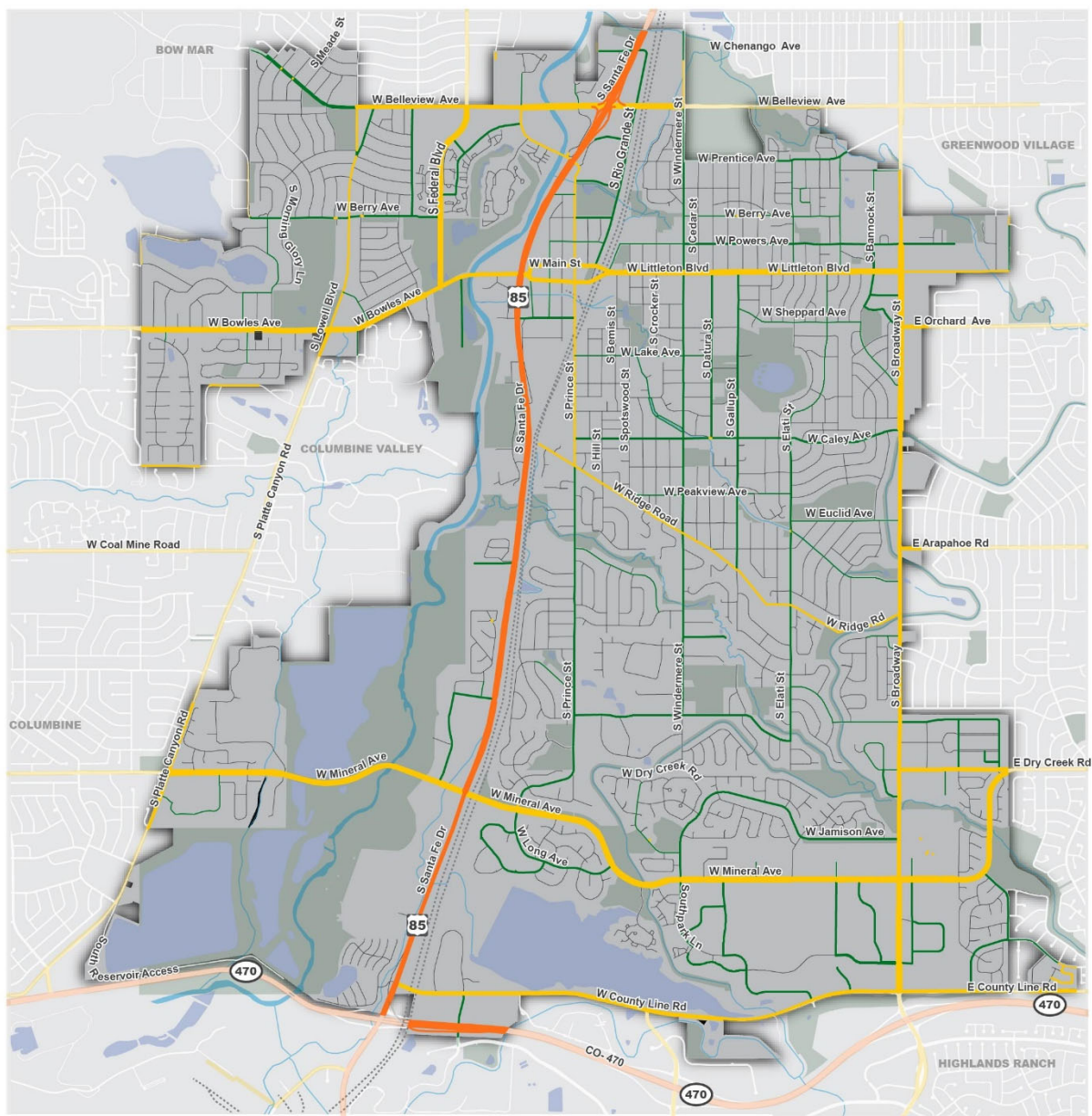
*Congestion at Santa Fe Dr & Mineral Ave.*



*Parking is fully utilized on Main Street.*

# 81.8%

**Percent of Littleton residents who commute to work in a private auto (including those who drive alone as well as those who carpool; 8.4% telecommute)**



## TRAILMARK NEIGHBORHOOD



-  Expressway
-  Ramp
-  Major Arterial
-  Minor Arterial
-  Major Collector
-  Minor Collector
-  Local

0.5 1 Miles



-  City of Littleton  
 Parks and Open Space  
 Water  
 Railroads

## CITY OF LITTLETON EXISTING ROADS

## Traffic Congestion

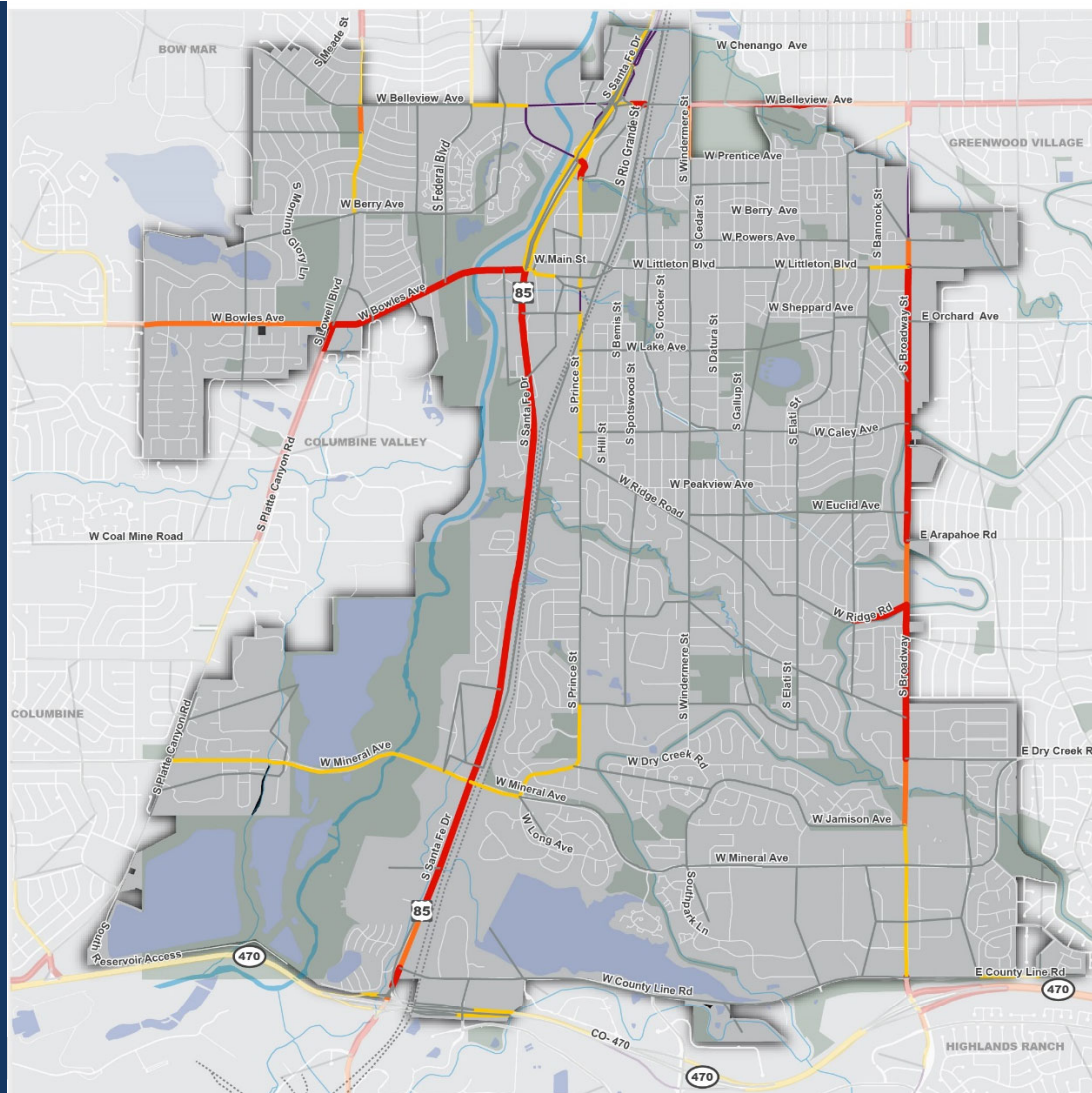
Vehicular delay is common in Littleton, with several major corridors experiencing many hours of delay each day.

The map at right depicts the average number of hours of delay per day. Of note, Santa Fe Drive, Broadway, and Bowles Avenue are congested throughout most of the day.

Other roadways are congested during peak periods, particularly Prince Street and Mineral Avenue, which can experience very severe congestion, albeit during shorter periods.

Bottlenecks occur at several intersections throughout the city as well, notably including intersections along Santa Fe Drive at Mineral Avenue, Bowles Avenue, and Prince Street.

Santa Fe Drive carries as many as 60,000 vehicles per day near Mineral Avenue, well over its intended capacity.



Number of Hours per Day Where Congestion Occurs

- 0
- 0.01 - 2.5
- 2.51 - 5
- 5.01 - 7.5
- 7.5+

0.5 1 Miles

City of Littleton  
Parks and Open Space  
Water  
Railroads

Source: DRGOG  
Regional Travel Demand  
Model (2015)

## CITY OF LITTLETON ROADWAY CONGESTION

**TRAFFIC:** *#1 public concern* \$25m to \$33m annual economic impact

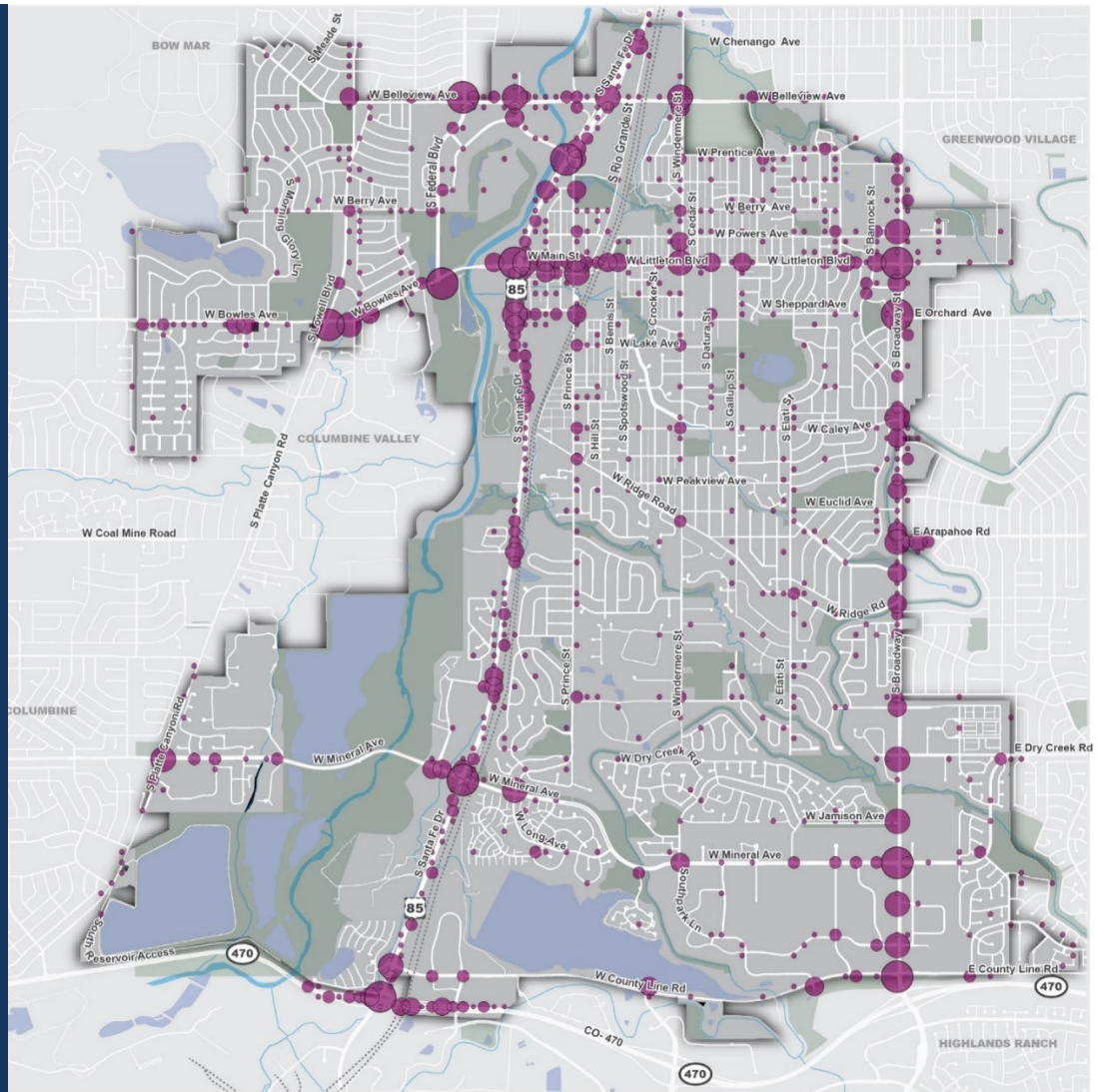
## Auto Safety

Over a 5-year period from 2011 through 2015, 5,528 crashes occurred in Littleton. During that same time period, 359 people were injured in automobile crashes.

Crash concentrations exist at the following locations:

- The length of the Broadway corridor
- Santa Fe & Mineral
- Santa Fe & Church
- Santa Fe & Bowles
- Santa Fe & Prince
- Federal and Bowles
- Bowles and Platte Canyon

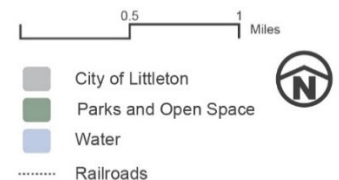
In general, where congestion occurs, crashes follow. Congestion-related crashes (such as rear-ends) make up by far the highest proportion of crashes in the city. Between 2011 and 2015, rear-ends accounted for 47% of all crashes.



Crashes  
(2011-2015)

- 1-5
- 6-15
- 16-35
- 36-85
- 86-182

Source: DRCOG



### CITY OF LITTLETON VEHICULAR CRASHES

**SAFETY:** #4 public concern 1,000+ CRASHES PER YEAR

## MODE: TRANSIT

Littleton is within the Regional Transportation District (RTD) service area. RTD operates fixed route and demand-response service in Littleton. Major transit routes include:

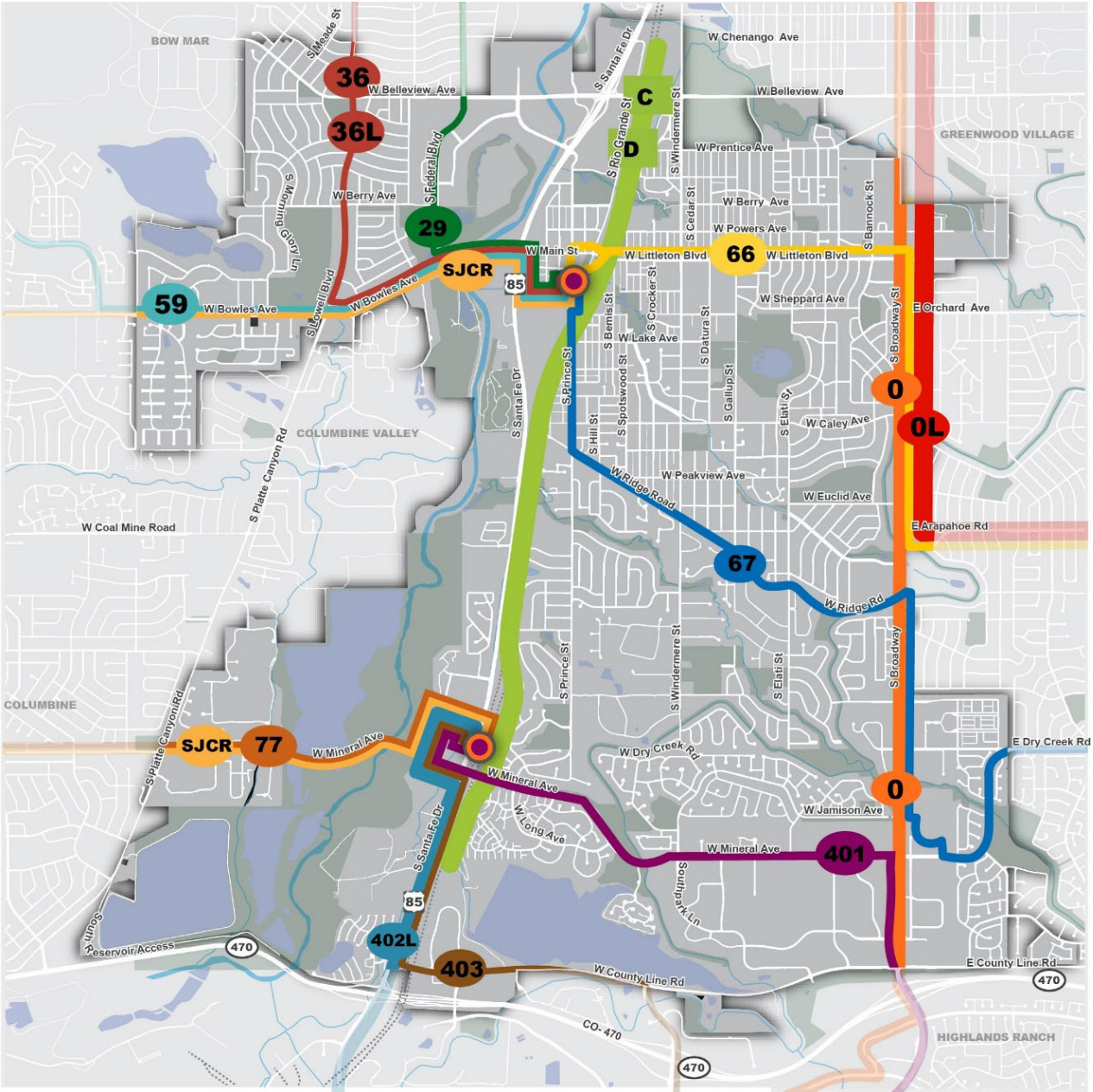
- C-line and D-line Light Rail: These two routes interline through Littleton but serve different destinations in Downtown Denver, with the C-line terminating at Denver Union Station and the D-line terminating in Central Downtown at the 18<sup>th</sup> & California Station.
- Bus routes serve the following corridors:
  - Broadway
  - Federal Boulevard
  - Bowles Avenue/Littleton Boulevard
  - Ridge Road
  - Mineral Avenue
  - South Santa Fe Drive
  - County Line Road
- RTD operates the FlexRide demand-response service. In addition, the City operates OmniBus and Shopping Cart demand-response services.

While 72% of respondents to the city's recent traveler survey perceive transit service positively, several challenges have been identified:

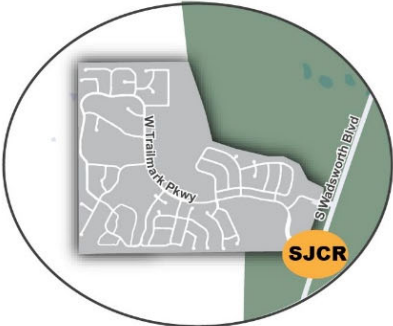
- Parking: The Littleton Downtown and Mineral Park-n-Rides fill to capacity early in the morning and demand for parking at these stations exceeds their capacity.
- Connectivity: Auto, pedestrian, and bicycle connectivity is poor at the Mineral station.
- 30-minute peak period service for most bus routes does not meet a typical Level of Service standard that makes taking transit attractive to “choice riders” – those who can choose another mode of travel.



**6.4%** Percent of Littleton residents who commute to work via transit



TRAILMARK NEIGHBORHOOD



Approximate Frequency

- 30 - 60 minutes
- 15 - 30 minutes
- 15 or better

Light Rail Station

0.5 1 Miles

- City of Littleton
- Parks and Open Space
- Water
- Railroads
- Bus Line Number
- Light Rail Route



CITY OF LITTLETON  
EXISTING TRANSIT FACILITIES

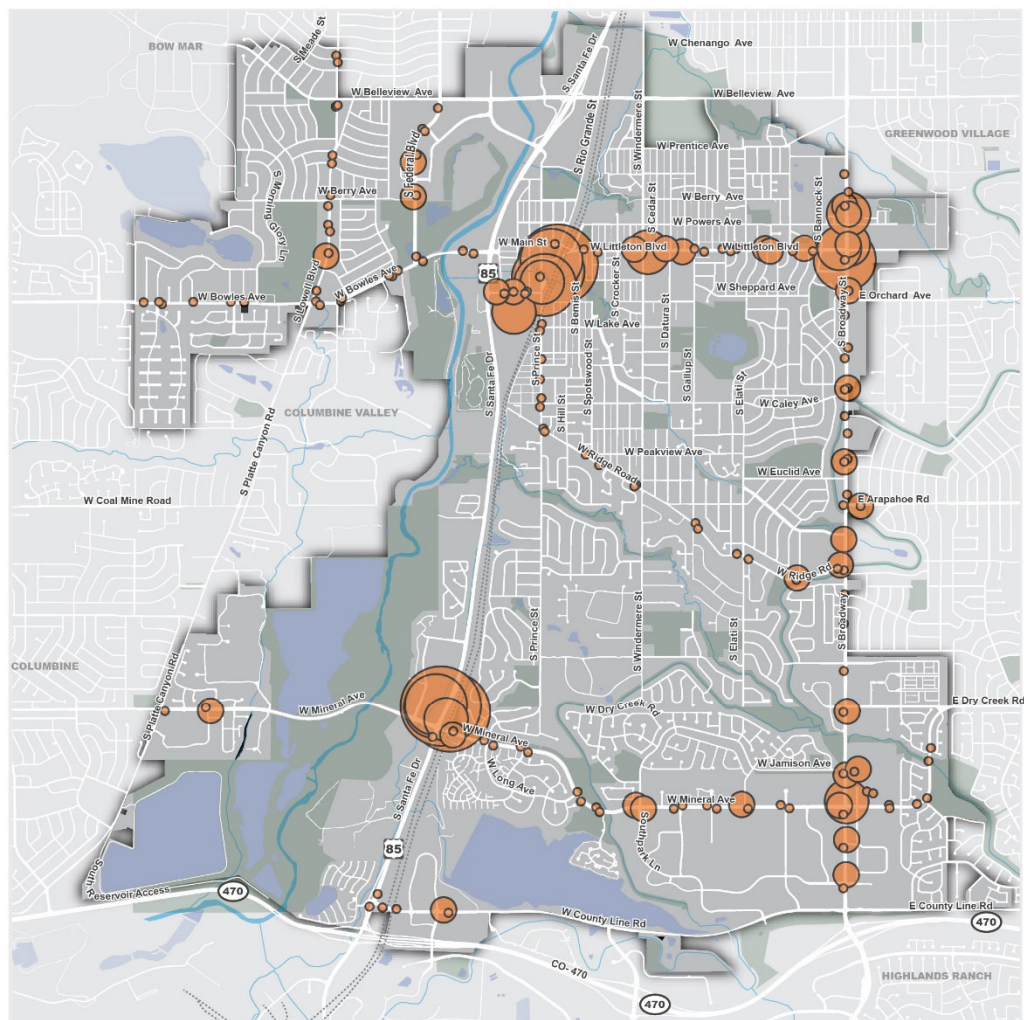
## Transit Usage

Transit ridership in Littleton is highest on bus service along Broadway and Littleton Blvd (especially downtown) as well as light rail. The map at right depicts the average number of boardings at each transit stop each day. Average weekday ridership for each route:

Route	Ridership
0	340
0L	170
29	170
36	420
36L	360
59	160
66	570
67	150
77	90
401	150
402L	120
403	110
C (light rail)	2000
D (light rail)	2300

According to RTD and INRIX, it can take anywhere from 33 to 57 minutes to drive from the Mineral Station to downtown Denver, depending on traffic. By comparison, the same trip using light rail service takes between 29 and 33 minutes.

Route 67 along Ridge Road has been identified by RTD as struggling to meet ridership standards. This route remains in service because of the lack of transit alternatives in the area.



**TRANSIT: 2 Light Rail Lines 1,800+ DAILY BUS RIDERS**

## MODE: WALK

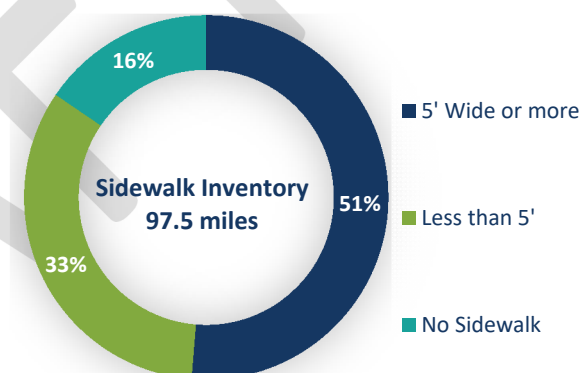
Littleton is a diverse city when it comes to pedestrian activity and infrastructure. On one hand, Littleton has active pedestrian-friendly areas like downtown Littleton, and the city is home to an extensive trail system. On the other hand, Littleton is crisscrossed by auto-oriented arterials that prioritize motorized travel modes. This dichotomy means that the City faces challenges and has real opportunities to address pedestrian comfort, convenience, and safety. Major challenges identified through the inventory of the pedestrian system include:

- **Safety:** Over the 5-year period from 2011 to 2015, 121 crashes that involved pedestrians occurred, a rate of about 2 per month. People walking are vulnerable to serious injury when involved in a crash with an auto. Of particular concern is the Broadway corridor, where 17 such auto-pedestrian collisions occurred during the study period.
- **Connectivity:** The freight and RTD rail corridor represents a major pedestrian barrier. The rail corridor and the Santa Fe Drive corridor stand between the majority of Littleton residents and the South Platte River and adjacent trails – a wonderful pedestrian amenity.
- **Transit Access:** While walking to the Littleton Downtown station is possible, access to the Mineral Station is difficult for pedestrians. In addition, many of Littleton's bus stops are not well served by pedestrian facilities.
- **Accessibility:** People with disabilities encounter challenges throughout Littleton. The city has nearly 4,000 locations that have been identified in a self-assessment as needing improvements for accessibility. These upgrades will take place as community improvements are constructed over forthcoming years

Littleton can build upon the following amenities:

- **Trail Network:** 51 miles of regional and local trails provide excellent pedestrian facilities throughout Littleton.
- **Downtown Littleton:** Walking in and around Downtown Littleton is generally comfortable and convenient. The Downtown Littleton station can be accessed from the surrounding neighborhood.

Adopted in November 2011, Littleton's Bicycle & Pedestrian Master Plan was developed through a grant from tri-county health and focuses on short term, implementable improvements to the on-street system for walking and biking in Littleton.



*Streets designated as collector or arterial*



*Littleton contains 51 miles of trails.*



*Typical auto-oriented neighborhood street with narrow sidewalk.*

**1.8%** Percent of Littleton residents who walk to work



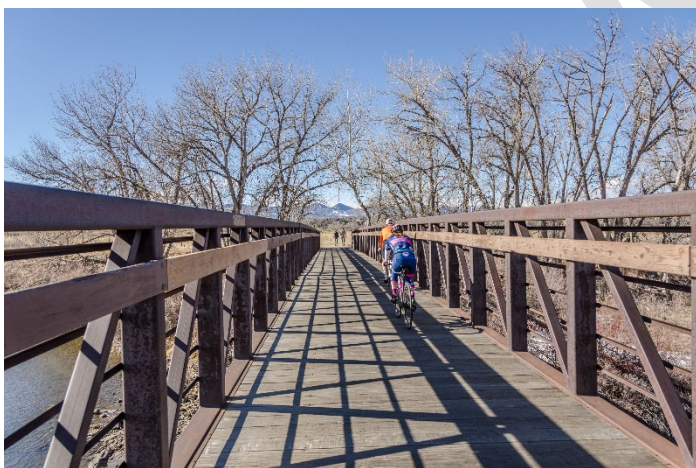
## MODE: BIKE

As with walking in Littleton, biking is well-served by the regional facilities, but can be impeded by barriers and the design of infrastructure. Major challenges include:

- **Safety:** Over the 5-year period from 2011 to 2015, 77 crashes that involved bicyclists occurred. People biking are vulnerable to injury when involved in a crash with an auto. Again, the Broadway corridor has been a hazardous place to bike.
- **Connectivity:** The freight and RTD rail corridor represents a major barrier. The rail corridor and the Santa Fe Drive corridor stand between the majority of Littleton residents and the South Platte River and adjacent trails – a wonderful amenity for bicycling.
- **Transit Access:** Access to the Mineral Station is difficult for bicyclists, and the station itself represents a barrier for access to the Mary Carter Greenway.

Littleton can build upon the following amenities:

- **Trail Network:** 51 miles of regional and local trails provide excellent bicycle facilities throughout Littleton.
- **On-street Bike Facilities:** Littleton has 24 miles of on-street bike facilities, covering 15% of the city's roads. These facilities include sharrows, signed bike routes, shared parking/bike lanes, and separate marked bike lanes. On most minor arterial and collector streets, these bike facilities provide convenient access for most of the city. Improvements to the design of these lanes and expansion of the network

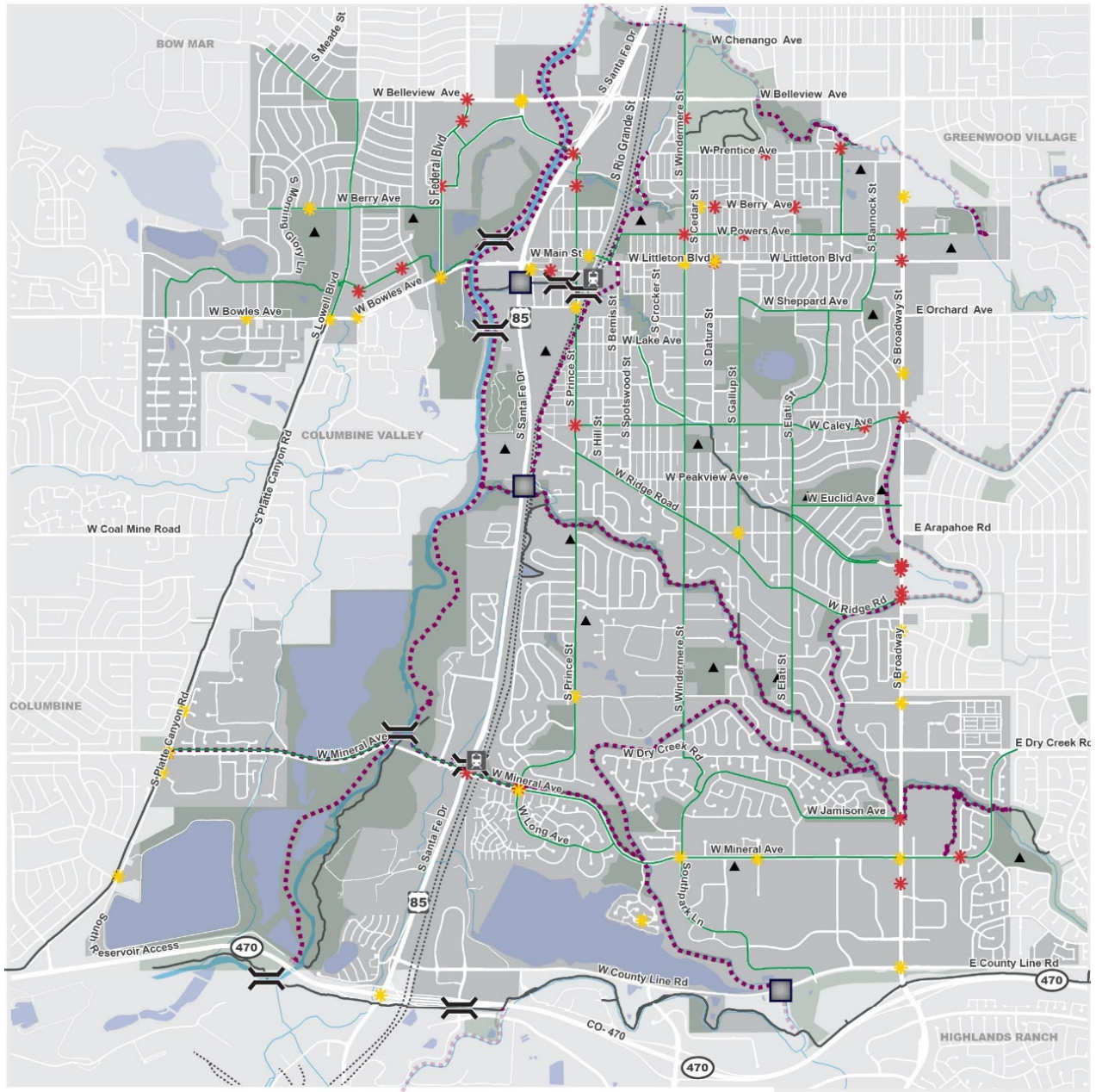


*Many of Littleton's trails are bike-friendly.*

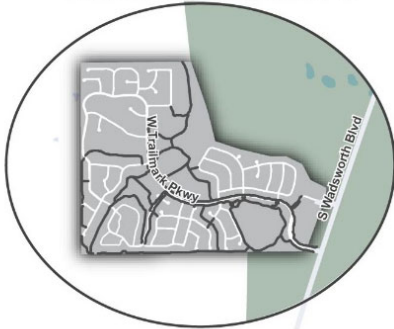


*Typical bike lane, striped and signed, but no markings.*

**0.4%** Percent of Littleton residents who bike to work



TRAILMARK NEIGHBORHOOD



- Regional Trail
- Local Trail
- Bike Facilities
- Bike/Pedestrian Bridge
- Bike/Pedestrian Underpass
- Bicycle Related Crash (2011-2015)
- Bicycle Related Crash (Injury) (2011-2015)
- City of Littleton
- Parks and Open Space
- Water
- Railroads
- School
- LRT Station

0.5 1 Miles



## CITY OF LITTLETON BIKE CHALLENGES AND OPPORTUNITIES

## POLICY

Through the creation of this Transportation Master Plan, the City of Littleton is establishing a first set of overarching transportation policies. Building on guidance from existing planning efforts and finding areas of alignment with regional programs will allow Littleton to maximize funding opportunities and work toward realizing the community's vision.

Transportation policy development starts with the guiding principles established by Envision Littleton. While decisions about transportation can help Littleton achieve the future described in all five principles, the "Connected" principle is particularly relevant. This principle emphasizes the importance of regional connectivity across all transportation modes.

### Funding Sources

Littleton spends the vast majority of its annual transportation budget on maintenance and operations of the existing system. Significant improvements to the system will require securing additional funding.

Littleton funds its transportation projects through a mix of revenue generated at the local, state, regional, and federal levels. The primary source of this revenue is Colorado's Highway Users Tax Fund (HUTF), which currently disperses approximately \$1.4 million to Littleton each year<sup>i</sup>. Statutorily, HUTF funds must be spent only on transportation improvements.

The growth of the city and aging infrastructure has placed an increased burden on highway and street maintenance in recent years. The available funds are currently inadequate to support ongoing maintenance needs, and no funding exists for capacity improvements.

As Littleton clarifies its vision for transportation, new sources of funding (such as grants and partnerships) could become more readily accessible. The U.S. Department of Transportation (USDOT) offers several merit-based grants (most notably BUILD and INFRA). The State of Colorado awards funding to support local agency projects that support broader state-wide goals (such as Safe Routes to School [SRTS]). By clearly defining its transportation priorities, Littleton is positioned to capitalize on these opportunities where there is alignment.

Littleton can also bolster its ability to fund transportation improvements by committing to the regional perspective articulated in Envision Littleton's "Connected" principle. DRCOG's Transportation Improvement Program (TIP) allocates funds through an application process that rewards concurrence with the regional goals articulated in MetroVision<sup>ii</sup>.

The TMP will focus on long-term capital improvement projects on the City's transportation network, such as capacity, operational, and safety needs. Routine maintenance projects such as pavement management, traffic signal repairs, and other projects will be addressed separately as part of the City's Capital Improvement Plan. The TMP planning process will focus on engaging the community to develop near term and long range transportation solutions,

## ONGOING AND PAST PLANNING EFFORTS

This Transportation Master Plan represents an alignment of previous and ongoing plans, guidelines, and reports conducted by the City of Littleton and regional partners. In a review of 37 such documents, several common themes emerged (meaning they appeared in at least 3 previous planning efforts). Note that these themes, which are listed below, do not necessarily represent the top priorities for the City of Littleton's transportation policy; instead, they suggest likely starting points for the discussion.

### Common Themes from Existing Plans

- Make Littleton pedestrian friendly by extending pedestrian network, adding pedestrian bridges, extending sidewalks and improve existing sidewalks.
- Improve connections between downtown/river corridor/parks/trails.
- Complete streets/road diet/traffic calming where appropriate.
- Improve traffic flow on arterials.
- Improve bike facilities.
- Decrease cut-through traffic in residential areas.
- Improve multimodal connections between commercial locations/residential developments.
- Improve trail network for transportation around and out of city.
- Improve intersection crossings.
- Improve connections to light rail.
- Improve road connections to key destinations but not through natural areas/build fewer cul-de-sacs/promote grid street network.
- Improve parking downtown, implement parking structures, consider parking restrictions.
- Implement traffic calming strategies in neighborhoods.

## Littleton Plans & Studies

- Citywide Plan (2014)
- Bellevue Avenue Corridor Vision (2018)
- Bicycle and Pedestrian Master Plan (2011)
- Broadway Corridor Study (2009)
- Downtown Neighborhood Plan (2011)
- Littleton Downtown Design Standards (2006)
- Mineral Station Area Framework (2018)
- Neighborhood Plans and Corridor Plans (2016)
- Three Mile Plan (2015)
- Amended Columbine Square Urban Renewal Plan, City of Littleton (2015)
- Arapaho Hills Historic Preservation Guidelines, City of Littleton (2016)
- Resident & Business Surveys (2018)
- City of Littleton Parks, Recreation, and Trails Master Plan (2016)
- Downtown Littleton Historic Preservation Guidelines (2011)
- Landscape Design Criteria Manual (1992)
- Louthan Heights Historic District Design Guidelines (2017)
- South Platte River Corridor Development Design Guidelines (2000)
- Mineral Station ULI Advisory Services Report (2006)
- Mineral Avenue TAP Final (2014)
- Littleton Housing Report (2017)
- Neighborhood Traffic Management Program (not dated)
- Storm Drainage Design and Technical Criteria Manual (2018)

## Relevant Regional Plans and Studies

- South Platte River Corridor Vision, Arapahoe County, (2013)
- South Suburban Parks and Recreation Master Plan (2017)
- Arapahoe County Bicycle/Pedestrian Master Plan (2017)
- High Line Canal Conservancy Vision Plan (2017)
- RTD (Regional Transportation District) 2015-2020 Strategic Plan (2015)
- RTD Regional BRT Feasibility Study (2018)
- RTD Quality of Life Study (2017)
- RTD TOD Strategic Plan (2010) and Status Report (2013)
- DRCOG (Denver Regional Council of Governments) Metro Vision 2035 (2017)
- DRCOG (Denver Regional Council of Governments) Active Transportation Plan (Draft) (2018)
- DRCOG (Denver Regional Council of Governments) Regional Transportation Plan 2040 (2017)
- Arapahoe County 2035 Transportation Plan (2010)
- Jefferson County Bicycle and Pedestrian Plans (2012)
- Jefferson County Countywide Transportation Plan (1998)
- Douglas County 2030 Transportation Plan (2009)

<sup>i</sup> <https://www.colorado.gov/pacific/treasury/hutf-distributions>

<sup>ii</sup> <https://drcog.org/sites/default/files/resources/Adopted%202020-2023%20TIP%20Policy.pdf>