Centennial
TRANSPORTATION MASTER PLAN

ADOPTED MAY 2, 2022

CITY OF CENTENNIAL,
COLORADO

RESOLUTION NO. 2022-R-23

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF CENTENNIAL, COLORADO RATIFYING THE PLANNING AND ZONING COMMISSION'S APPROVAL OF THE CENTENNIAL 2040 TRANSPORTATION MASTER PLAN

WHEREAS, the City of Centennial, acting through its Planning and Zoning Commission, is empowered pursuant to C.R.S. §§ 31-23-201, *et seq.*, to make, adopt, amend, and/or supplement a master or comprehensive plan for the physical development of the municipality, including any areas outside its boundaries; and

WHEREAS, following the conclusion of a duly noticed public hearing conducted on April 27, 2022, the Planning and Zoning Commission approved the Centennial 2040 Transportation Master Plan pursuant to Resolution 2022-PZ-R-08; and

WHEREAS, pursuant to and in accordance with the procedure set forth in Section 12-14-204 of the Centennial Land Development Code and C.R.S. § 31-23-206(1), the City Council desires to ratify the Planning and Zoning Commission's approval of the 2040 Transportation Master Plan.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Centennial, Colorado, that:

Section 1. The City Council hereby ratifies and approves the decision of the Planning and Zoning Commission adopting the 2040 Centennial Transportation Master Plan, as more particularly set forth in Resolution 2022-PZ-R-08.

Section 2. **Effective Date.** This Resolution shall take effect immediately upon its approval by the City Council.

Adopted by a vote of 9 in favor and 0 against this 2nd day of May, 2022.

By: _____
Stephanie Piko, Mayor

ATTEST:

By: _____
City Clerk or Deputy City Clerk

Approved as to Form:

By: _____
For City Attorney's Office

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PREPARED BY:

FELSBURG HOLT & ULLEVIG

connecting & enhancing communities

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CHAPTER 1.
INTRODUCTION

Purpose of the TMP

Since the development of Centennial's first Transportation Master Plan (TMP) in 2013, the range of mobility options, how transportation is used, and the need for more interconnected and responsive options for moving in and around the City have changed. It is important that the City of Centennial is prepared to adapt with changing transportation needs and priorities and to leverage new transportation technologies to ensure community members have access to a safe and reliable transportation system.

This TMP update will guide the City's investments in transportation over the next 20 years. The TMP aids community members, City staff, and elected officials to make informed decisions about future land use and transportation for the City. The Plan also provides guidance on advancing regional improvements that require federal funding and informs the City's Capital Improvement Program (CIP). The TMP will be updated regularly, at least every 10 years, to reflect changing conditions and emerging transportation solutions.

Alignment with the City's Vision

Adopted in 2019, the City's vision provides a clear and aspirational view of how the community will be known by others.

Transportation relates to and advances all four of the themes within the City's vision. The TMP intentionally aligns with the vision, and implementation of the TMP supports achieving the City's vision.

Regional Partnerships

Located in the southern portion of the Denver metro area, the City of Centennial is a part of the rapidly growing Front Range region. Further, numerous arterial streets traverse the City and serve as important regional corridors.

Centennial will forge ahead on citywide projects and actions, while also exploring strategic partnerships and investments with neighboring communities and regional entities to achieve the citywide vision.

Planning Process

The TMP was developed in three phases intended to provide check-in points with community members and stakeholders to ensure identified gaps and needs, tradeoffs and potential projects. The Plan itself addresses transportation needs and aligns with community values.

The first phase of the planning process focused on understanding transportation and mobility needs and opportunities across the city. Tasks included developing an inventory of current and future conditions (**Appendix A**) and summarizing previous planning documents and studies that have been developed by the City or affect the City's transportation system. This phase also provided an opportunity to ask community members about transportation challenges they experience and how they envision the transportation system could better meet their needs now and in the future.

Phase 2 centered on a discussion of potential projects and strategies to advance in the TMP. Community members and stakeholders were asked to evaluate and provide input on potential projects, consider a series of transportation tradeoffs, and participate in a transportation funding exercise. Input from this phase helped guide project priorities, strategies, and funding recommendations.

The final phase of the planning process involved compiling the data, information, and feedback gathered throughout the year-long planning effort to develop a comprehensive and forward-looking set of recommendations to then advance in the Implementation Plan. Community members and stakeholders were provided the opportunity to review and provide input on the draft TMP.

TMP Organization

The TMP is organized into seven chapters that detail different components of the TMP planning process.

- **Executive Summary**
- **Introduction**
- **Community Engagement**
  Identifies the process and feedback gathered through the comprehensive community engagement.
- **Current & Future Conditions**
  Presents an overview of land use; demographics; safety, roadway, bicycle, pedestrian, and transit networks; and advanced mobility data and analysis.
- **Vision**
  Establishes transportation vision, goals, and performance measures.
- **Corridor Profiles**
  Evaluates the 18 major transportation corridors and documents needs, opportunities, and recommendations.
- **Plan Recommendations**
  Recommends network improvements for roadway, bicycle, pedestrian, and transit modes and establishes transportation demand management (TDM) and advanced mobility recommendations.
- **Implementation Plan**
  Establishes yearly revenue forecasts and presents priority projects and strategies for implementation in the short-, mid-, and long-term future.

CHAPTER 2.
COMMUNITY ENGAGEMENT

Engagement Overview

A comprehensive community engagement approach was used over the year-long planning period to engage key stakeholders and a broad cross-section of the public in the process. Importantly, community engagement was conducted during the COVID-19 pandemic, and online tools were used to engage the community and provide opportunities for input, particularly during the first phase. As COVID-19 restrictions were lifted, more opportunities for tangible, in-person community events were scheduled in the summer of 2021.

The planning process involved three phases of engagement The first phase, focused on values and needs, spanned between early-May to mid-July. Outreach through this initial phase aimed to notify the public about the Centennial TMP update and sought to understand community values and transportation gaps and needs.

The second phase, which extended from early-August to mid-September, presented community members and stakeholders opportunities to evaluate transportation and mobility tradeoffs and provide feedback on initial project ideas.

The third phase of engagement occurred in March/April 2022. This last phase of engagement centered on validation. Community members and stakeholders were asked to review and comment on the draft TMP and to confirm that the Plan reflects the community's stated values and priorities. Detailed results from each phase of outreach are summarized in **Appendix B.**

Phase 1 - Values & Needs

During the first phase of community engagement, community members, visitors, and any user of Centennial's transportation system were asked to share their perspectives on current transportation issues they encounter and offer their insight into how the transportation system could be improved.

Different tools and strategies were used to gather feedback and included both online and in-person options to ensure everyone was able to provide input in the way they felt most comfortable. Tools included an idea wall, a commenting map, and an online survey accessible through the TMP webpage on the City's website. The project team hosted a TMP booth at Brew-N-Que and at a summer social where community members could learn about the Plan and provide input. Additionally, five stakeholder group interviews were conducted and various social media pushes, newsletters, and other engagement techniques were used to encourage participation.

PHASE 1 - ENGAGEMENT BY THE NUMBERS

APPROXIMATELY
200 COMMENTS & SURVEY RESPONSES

IN-PERSON EVENTS
OVER
150 PEOPLE REACHED AT IN-PERSON EVENTS

STAKEHOLDER GROUP MEETINGS
5 STAKEHOLDER GROUP MEETINGS

Idea Wall Input

Through the idea wall tool, community members voiced their opinions on the current state of the transportation system and improvements they would like to see. Approximately 30 comments were received. Nearly a third of the comments were categorized under "Other" and focused on the need for sustainable mobility options and improving streetscape elements in the city. Pedestrian comments (19 percent), roads and traffic comments (19 percent), and bike and trail comments (16 percent) closely followed. Transit and safety comments made up 13 and 6 percent of the comment categories, respectively. Key findings from the idea wall are summarized below.

Comment Map Input

The comment map offered community members an opportunity to identify specific locations where they would like to see improvements. Approximately 130 locations with associated modal or safety improvements were identified. Pedestrian comments made up almost 30 percent of the comments, followed by bike and trail comments at 23 percent. Key findings that emerged from the comment map are provided below.

IDEA WALL KEY FINDINGS	COMMENT MAP KEY FINDINGS
Bicycle comments focused on creating a complete and connected bike network	Bicycle comments focused on improving bike/trail infrastructure to address safety concerns
Community members expressed interest in a connected and safe sidewalk network	Pedestrian comments focused on the need for a connected and accessible sidewalk network
Transit comments focused on more accessible and reliable service	Transit comments focused on more accessible and reliable service and other comments called for improving transit infrastructure and amenities
Roads/traffic comments focused on improving safety and managing congestion	Roads/traffic comments focused on improving safety and managing congestion
Safety comments called for infrastructure improvements that encourage use of different mobility options	Traffic calming infrastructure, intersection and crossing accessibility improvements, and seasonal maintenance of roadways were all noted under the Safety category
Other comments provided input on sustainable mobility options and improving streetscape elements	Other comments focused on the need for streetscape improvements

Public Survey

Community input was also gathered through an online public survey and was promoted both virtually and during in-person events. The public survey asked community members a series of questions that focused on whether the draft TMP goals reflect community values and if they provide the right direction for the future of transportation and mobility for the City. In total, 30 responses were recorded.

The survey responses showed broad support for the transportation goals (see Vision Chapter for details) and suggested the following priority order for the goals:

- SAFETY
- FISCAL RESPONSIBILITY
- EFFICIENCY & RELIABILITY
- REGIONALISM & PARTNERSHIPS
- FLEXIBLE MOBILITY
- INNOVATION
- ECONOMIC & COMMUNITY VITALITY

In-Person Outreach Events

As COVID-19 restrictions lifted, in-person events were held to reach more community members. Outreach was conducted at the City's annual Brew-N-Que event and at a Summer Social event in early July. Through these two in-person events, hundreds of community members were reached and over 50 comments were collected. Common themes and feedback that emerged from the two events are summarized here.

IN-PERSON OUTREACH KEY FINDINGS

Bicycle/trail comments focused on adding bike lanes along specific corridors like Belleview Avenue and Smoky Hill Road and for greater connectivity between green spaces and residential areas like Willow Creek Trail.

Community members expressed that more work is needed to address sidewalk gaps and sidewalk accessibility issues along corridors like Arapahoe Road.

Transit comments were minimal but tended to focus on the need for more accessible transit service in the city.

Comments related to roads/traffic primarily focused on seasonal roadway maintenance, optimized signal timing, and areas of congestion.

Safety comments centered on the need for intersection improvements in areas where there are a high number of crashes.

Community members also expressed a need for more mobility options for older adults, enhanced multimodal options, and landscaped medians.

Phase 2 - Tradeoffs

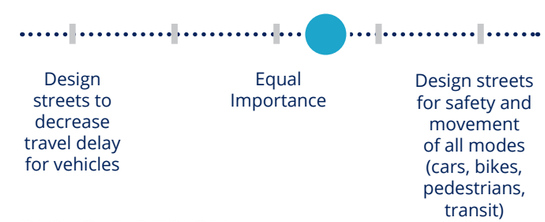
The second phase of community engagement kicked off in early August and closed in mid-September. Community members were asked to interact with and comment on a map with over 300 project ideas. Additionally, a transportation tradeoffs survey encouraged community members to evaluate competing transportation needs. The survey also asked respondents to distribute potential funding across different types of transportation improvements.

In-person public engagement opportunities were held at Centennial Under the Stars and Centennial's 20-Year Celebration event, both high-activity community events that garnered more input on transportation priorities. These events offered interactive versions of the tradeoffs and funding priority activities enabling input to be aggregated across outreach platforms.

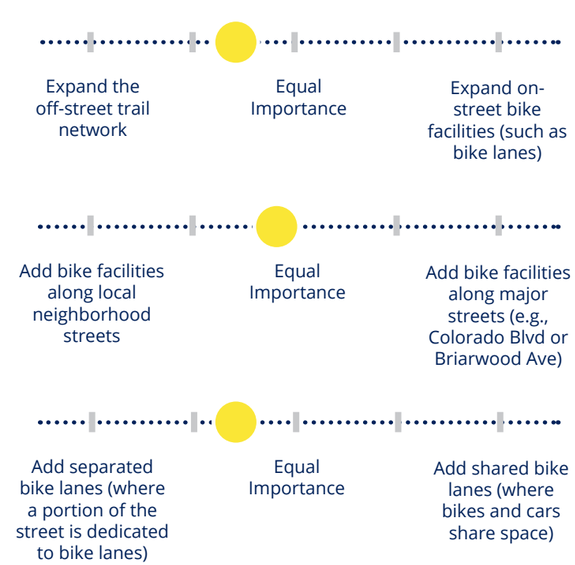
Transportation Tradeoffs

The transportation tradeoffs survey was provided at in-person events and online. Additionally, a live polling version of the survey was presented at a Centennial Senior Commission meeting and Centennial Council of Neighborhoods. Results that emerged from these events have been aggregated and summarized in the following charts. The results of the tradeoffs activity suggest a balanced approach to implementing transportation improvements.

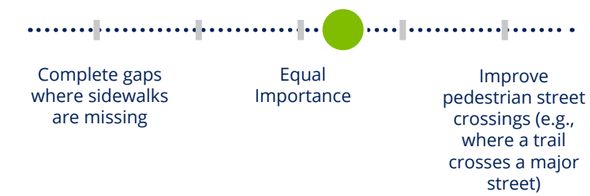
STREET DESIGN



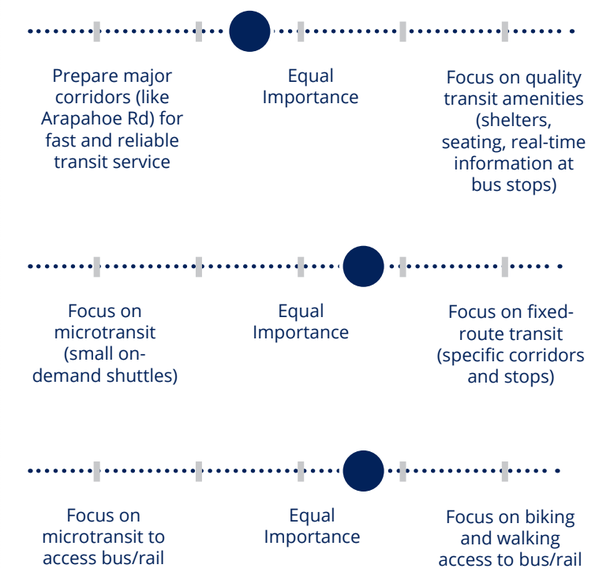
BICYCLE DESIGN



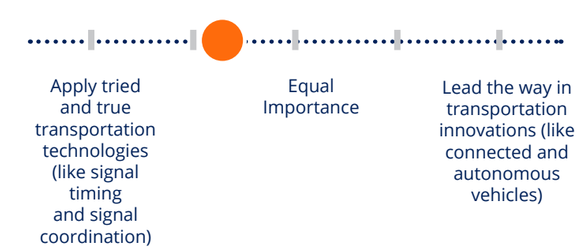
PEDESTRIAN DESIGN



TRANSIT DESIGN

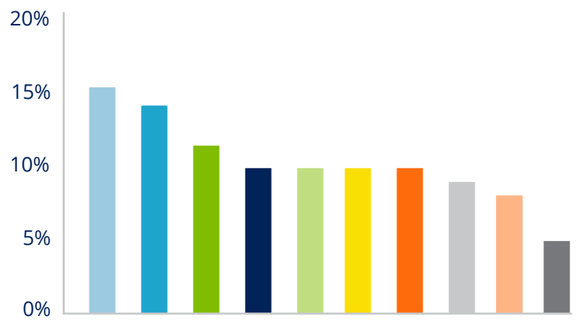


INNOVATION & TECHNOLOGY



Funding Priorities

The input from in-person and online activities was combined to provide a snapshot of overall community sentiment about funding priorities. In total, over 290 community members provided input on the types of improvements Centennial should fund. The two categories that received the highest number of votes were "maintain existing streets and bridges" and "apply technology solutions to reduce congestion." **The combined results show that all improvement types are important and suggest a balanced approach to funding transportation improvements.**



- Maintain Existing Streets and Bridges (15%)
- Apply Technology Solutions to Reduce Congestion (14%)
- Construct New Trails (11%)
- Make Safety Improvements (10%)
- Add and Improve Sidewalks (10%)
- Expand and Improve Transit Service (10%)
- Improve Intersections to Reduce Congestion (10%)
- Improve Bike and Street Crossings (9%)
- Add On-Street Bike Lanes (7%)
- Widen Existing Streets (5%)

Phase 3 - Validation

Have Your Say

908 UNIQUE PAGEVIEWS TO TMP HAVE YOUR SAY AND ASSOCIATED PAGES

213 VISITORS INTERACTED (PLAN DOWNLOADS)

30 VISITORS PROVIDED WRITTEN COMMENTS ON THE PLAN

52 COMMENTS WERE RECEIVED

The third and final phase of community engagement gathered community and stakeholder input on the draft TMP. Themes from the comments received are shown below, and a more detailed list of all comments received is included in **Appendix B**. A summary of the changes to the final TMP, including those revisions made to address community comments, were included in the documentation presented to the City Council for final TMP adoption in May 2022.

Public Comment Themes:

- Request for more emphasis on biking, walking, and transit, less on roadway widening
- Perceived disconnect between the vision, community input, and the implementation plan
- Opposition to widening Arapahoe Road, Smoky Hill Road
- Concern about the impacts of regional growth on Parker Road
- Support for Smoky Hill Road widening
- Complaints about traffic signal operations
- Opposition to bike lanes
- Opposition to growth in Centennial
- Support for sidewalks on Arapahoe Road
- Speed concerns
- Congestion and safety concerns at Arapahoe Road and Jordan Road
- Support for separation of bicyclists from motor vehicles, desire for more off-street bicycle and pedestrian trails
- Appreciation for the public review opportunity
- Support for the TMP

CHAPTER 3.
CURRENT & FUTURE CONDITIONS

Demographics

An assessment of the different communities that make up the City of Centennial is a critical first step in recognizing how and who uses the different elements of the transportation system. Understanding the gaps in the system and community needs indicates how it can be adjusted to better meet the needs of current and future residents.

This chapter provides an overview of Centennial's population composition, including present and anticipated population and employment growth, and a summary of frequently underserved communities such as older adults (65 and older), children (under 18), people with disabilities, communities of color, low-income households, and zero-vehicle households. Providing a focused lens for underserved communities is important in being able to plan for an equitable and accessible transportation system moving forward and will ensure community members of all ages and abilities can use transportation options throughout the city. The demographic information provided in this chapter is sourced from the Census Bureau (American Community Survey 2014-2019 data) and Denver Regional Council of Governments (DRCOG) base year 2020 and forecast year 2040 land use estimates. The DRCOG land use forecasts were adjusted for the Arapahoe County Transportation Master Plan and were further adjusted to align with Centennial's Comprehensive Plan. The growth forecasts shown in the following subsections are within the City of Centennial; however, the travel demand model accounts for growth in the surrounding region, including areas that may be annexed into the city in the future.

Population

The Census Bureau's American Community Survey shows the estimated population of Centennial is a little over 111,000 in 2020. Population trends from 2010 show the City experienced a larger increase in population growth from 2010 to 2015, with approximately 7,900 new residents. From 2015 to 2019 there was a much smaller increase of just over 2,000 new residents.

Household

It is estimated that there are approximately 40,400 households within Centennial. **Figure 1** shows household growth estimates over the next 20 years, displaying the highest rate of growth in small pockets on the eastern- and western-most parts of the city and overall growth of 24 percent by 2040.

Employment

Currently, there are approximately 68,500 jobs in the city. This number is expected to grow substantially (36 percent) over the next two decades as shown on **Figure 2**. The central area between Yosemite Street and Jordan Road is expected to see the highest growth in employment.

Demographics

Planning for a transportation system that addresses community needs requires that historically and frequently underserved communities are given particular attention. A focused approach will ensure the development of an inclusive and universally designed multimodal network.

Historically Underrepresented & Overburdened Communities

Older adults (65+) make up 15 percent of the City's total population, while children (people under the age of 18) make up approximately 23 percent of the City's population. These demographic compositions should be considered to ensure transportation improvements are planned and implemented for people to age in place and safely use alternative modes of transportation to reach schools, community facilities, grocery stores, and other needed destinations.

Adapting a transportation system to be responsive to the needs of community members requires that planned improvements, projects, and studies are equitably considered and implemented. It is vital that there is an understanding of the different communities that are a part of the City of Centennial. People of Color make up approximately 20 percent of the City's population, close to 7 percent of Centennial residents have a disability, and people whose median household income is below the federal poverty guidelines make up 3 percent of the total population. Zero-vehicle households make up 2 percent of the City's population.

It is also important to consider that U.S. census data do not capture how different social identities overlap. Therefore, to create a truly inclusive and accessible transportation network all community members must have equitable access to a wide range of safe mobility options. **Appendix A** provides more detailed information about Centennial's demographic composition.

2020 POPULATION, HOUSEHOLD, & EMPLOYMENT OVERVIEW

111,100 | **40,400** | **68,500**

Household & Employment Growth	2020	2040
Household Estimates	40,400	49,900
Employment Estimates	68,500	106,500

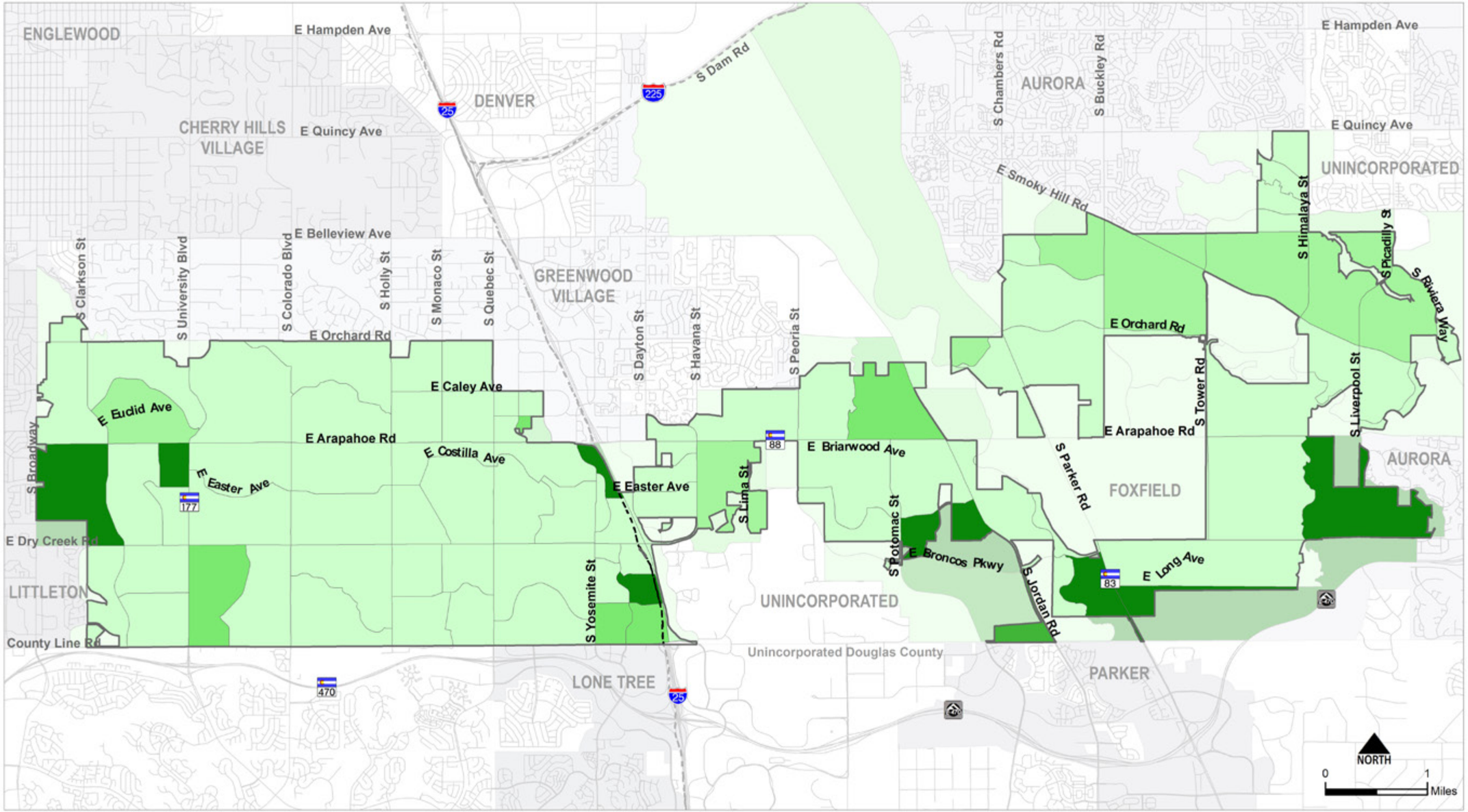
Source: U.S. Census Bureau American Community Survey 2015-2019, DRCOG Focus Model 2.2, 2019

HISTORICALLY UNDERREPRESENTED & OVERBURDENED COMMUNITIES

Population Group	Percentage of Population
Older Adults	15%
Children	23%
Communities of Color	20%
People with Disabilities	7%
Populations with Low-Income	3%
Zero-Vehicle Households	2%

Source: U.S. Census Bureau American Community Survey 2015-2019

FIGURE 1: HOUSEHOLD GROWTH ESTIMATES (2020-2040)



DRCOG Focus Model 2.2, 2019

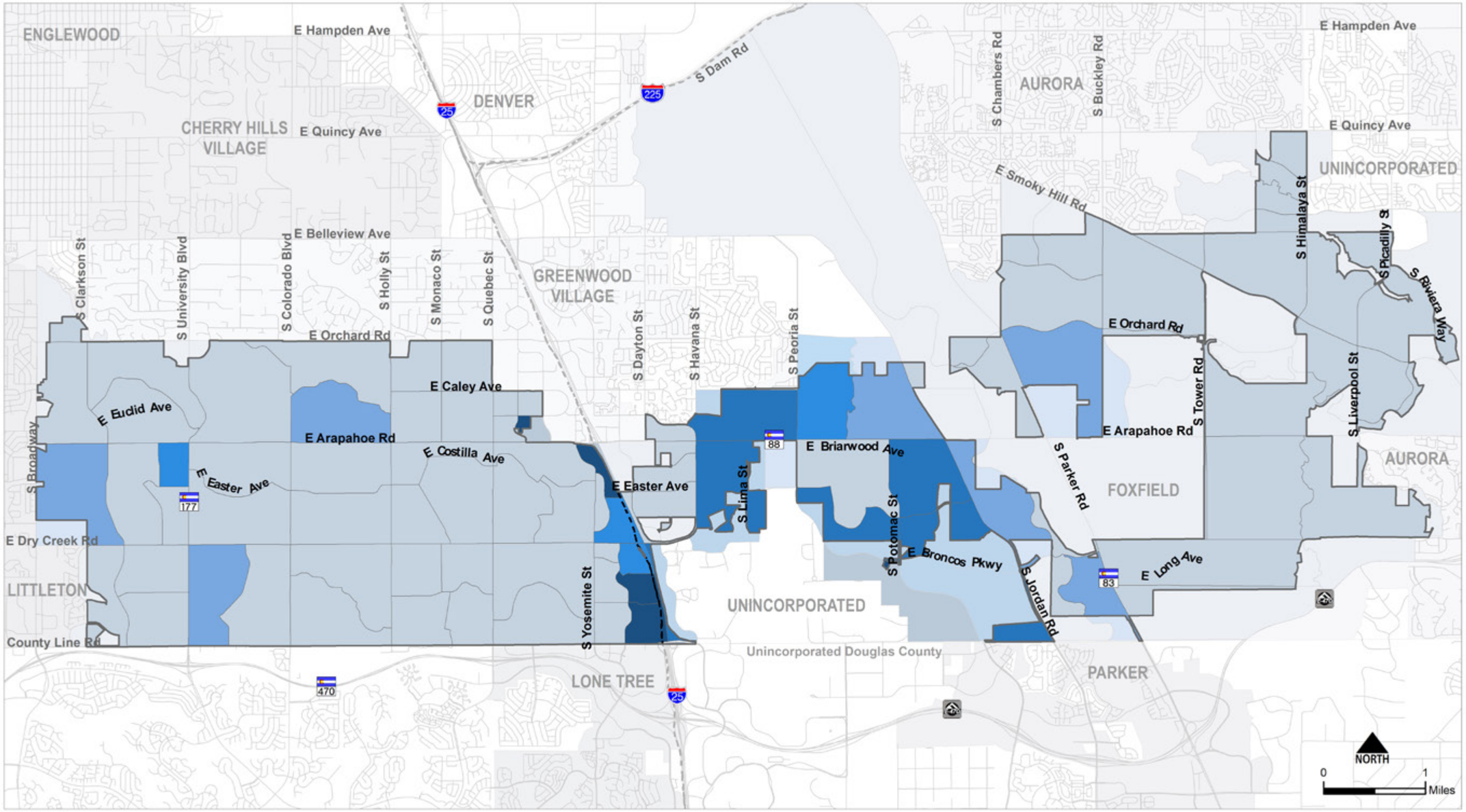
Legend

2020 - 2040 Household Growth Estimates

- 0 - 30 Households
- 31 - 100 Households
- 101 - 300 Households
- 301 - 600 Households
- 601 - 1,243 Households

- Roads
- Light Rail
- Centennial City Boundary

FIGURE 2: EMPLOYMENT GROWTH ESTIMATES (2020-2040)



Legend

DRCOG Focus Model 2.2, 2019

2020 - 2040 Employment Growth Estimates

- 0 - 100 Jobs
- 101 - 500 Jobs
- 501 - 1,000 Jobs
- 1,001 - 2,500 Jobs
- 2,501 - 5,940 Jobs
- Roads
- Light Rail
- Centennial City Boundary

Travel Patterns

Commuting Travel Patterns

The experience community members have with the transportation system in their cities, particularly in how they commute to work, the travel time spent getting to and from destinations, and general travel patterns, tell an important story about the choices, convenience, and accessibility of different mobility options. This subsection provides an overview of how Centennial residents commute to work, to which cities, and the daily changes in the City's population from people commuting in for work. For more detailed data and information about Centennial's travel patterns, refer to **Appendix A**.

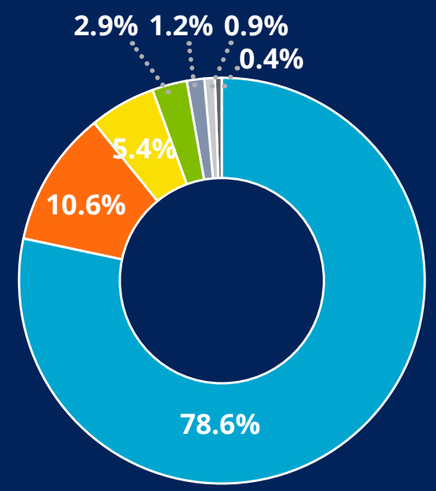
Transportation to Work (Mode Share)

Almost 80 percent of Centennial residents drive to work alone. A substantial number (10.6 percent) of community members work from home. This number has significantly increased over the past year due to COVID-19 restrictions and is likely to remain higher than the 2019 numbers in the coming years as employers allow more flexibility in remote working. Other transportation options such as carpooling (5.4 percent) and public transportation (2.9 percent) had much smaller utilization rates. Walking and other means, like bicycling, were the least used modes for getting to work.

Vehicle Ownership

In 2020, approximately 27 percent of Centennial households owned zero or one vehicle. While this percent was decreasing for several years, it increased significantly in 2020, likely due to the economic and work from home impacts of the COVID-19 pandemic. This recent trend represents an opportunity for increasing bicycling, walking, and transit use and should be monitored in the coming years.

HOW CENTENNIAL RESIDENTS COMMUTE TO WORK



Source: U.S. Census Bureau American Community Survey, 2019 5-Year Estimates

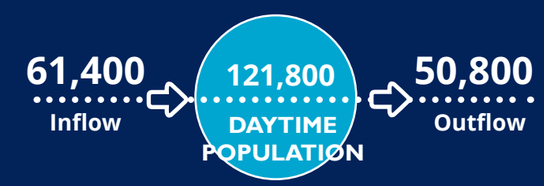
26 minutes

MEAN TRAVEL TIME TO WORK

Source: U.S. Census Bureau American Community Survey, 2019 5-Year Estimates

COMMUTER INFLOW/OUTFLOW DAILY POPULATION CHANGE

TOTAL POPULATION: 111,100
DAILY INCREASE: 10,700



Source: U.S. Census Bureau American Community Survey, 2019 5-Year Estimates, Longitudinal-Employer Household Dynamics Program

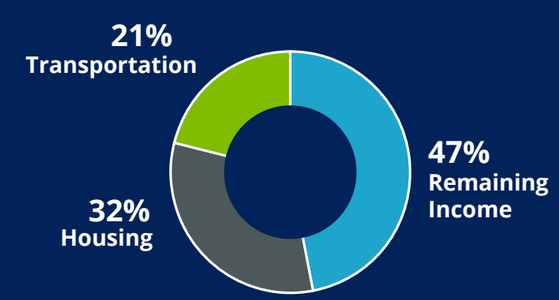
In 2020

27%

OF CENTENNIAL HOUSEHOLDS OWNED ZERO OR ONE VEHICLE

53%

H+T AFFORDABILITY INDEX



Source: The Center for Neighborhood Technology H+T Affordability Index, 2017

$13,622 in Annual Transportation Costs

Travel Time

Congestion during commutes to/from work is shaped by the number of travelers attempting to use the same roads at the same time. For Centennial residents, the average commute time is a little over 26 minutes. Although Centennial's average commute time aligns with the statewide average, there are aspects of the commute that could be improved for residents. The TMP identifies transportation recommendations that will help improve the efficiency and reliability of the street network and transportation options.

Commuter Inflow/Outflow

Inflow and outflow travel patterns show that Centennial experiences a daily population increase as a result of people commuting in, out, and through the city. In total, almost 51,000 people commute out of Centennial, and over 61,000 people commute in from neighboring communities. This results in a daily population increase of approximately 10,700 people. Consistent traffic patterns such as these, and the growth seen in both population and employment in the city, demonstrate the need for thoughtful planning and investment and regional collaboration to ensure transportation infrastructure and mobility options meet current and future needs.

Housing & Transportation (H+T) Affordability Index

The Housing and Transportation (H+T) Affordability Index presents information regarding the often overlooked expenditures that come with driving and owning a vehicle or using public transportation. This information provides a clearer picture for how housing and transportation interact and ultimately impact the affordability of a community.

The H+T Index measure defines affordability as both housing and transportation costs totaling no more than 45 percent of household income. Centennial residents, on average, spend 32 percent of their household income on housing and 21 percent of their household income on transportation. Combined the H+T Index is 53 percent, 8 percent higher than what is considered affordable by the Center for Neighborhood Technology (CNT). Owning a personal vehicle is the single biggest transportation cost factor for households, followed by insurance and repairs. Typically, the annual transportation cost for a Centennial resident is $13,622.

Safety

Crash History

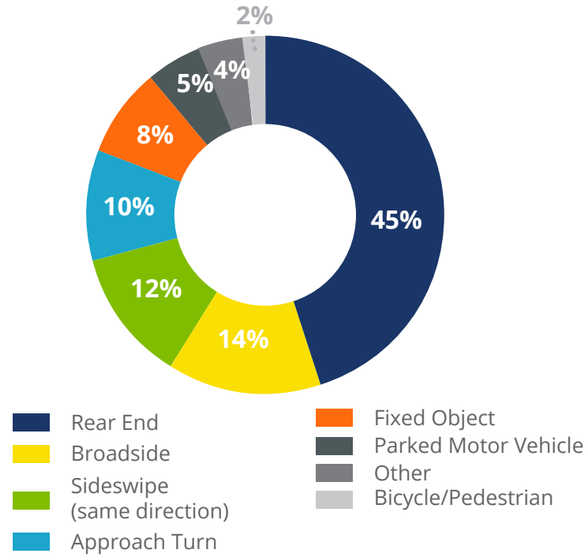
Roadway safety can be characterized by the ability of a person to travel along a roadway network freely without injury or death. It is usually assessed through a qualitative and quantitative evaluation of crash histories by mode of travel. This evaluation sheds light on crucial information such as locations with an overrepresentation of crashes, crash types, and crash severity issues. Under programs such as Vision Zero, safety concerns involving vulnerable users are of special concern and are often subject to formal safety evaluations such as Road Safety Audits after the initial identification of areas of concern.

Crash patterns in the COVID-19 period have changed significantly when compared to the pre-COVID period, with a marked increase in crash severity despite a decrease in the total number of crashes. To eliminate such crash data outliers, only pre-COVID crash data (2015 through 2019) are presented in this section.

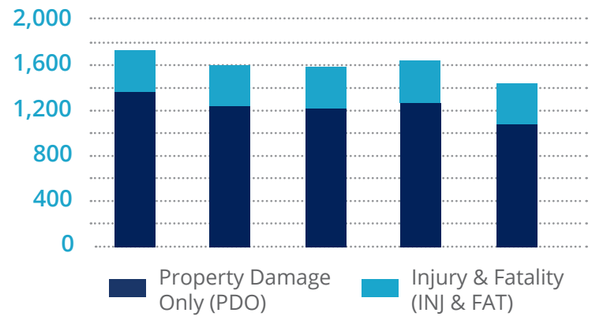
During the five-year period of 2015 through 2019, there were 8,019 crashes reported on streets and highways, including I-25, within the City of Centennial. The yearly distribution and severity of crashes are presented in the charts here. Over the five- year period, there is a general downward trend in total crashes.

Crash patterns suggest a high number of congestion-related crashes, such as Rear End and Sideswipe crashes. Broadside and Approach Turn crashes constitute a high percentage of crashes at intersections during both peak and off-peak periods. Vulnerable user crashes (bicycles and pedestrians) constitute 2 percent of the total crashes but 33 percent of the fatalities. **Appendix A** provides more information regarding crash history, high crash locations, and bicycle and pedestrian involved crashes in Centennial.

CRASH TYPES



CRASHES PER YEAR



Source: City of Centennial, 2021

Crash Locations

A citywide crash picture is provided on **Figure 3**, the crash heat map. It provides insight into the corridors with safety issues and possible correlation with high-speed segments of major arterials. Intersections of concern, discussed later in this section, are also highlighted on this map.

Table 1 further breaks down these crashes with an emphasis on severity, specifically, Killed and Severely Injured (KSI) crashes. Reducing KSI crashes is a priority for Vision Zero (see page 25 for more about Vision Zero), which is a strategy and safety approach that seeks to eliminate all traffic fatalities and severe injuries through a safe systems approach, while increasing safe, healthy, equitable mobility for all road users.

TABLE 1: PROPERTY DAMAGE ONLY, INJURED, SERIOUSLY INJURED, OR FATALITY CRASHES BY YEAR (2015-2019)

Year	Property Damage Only	Injured	Seriously Injured	Fatality	Total Crashes
2015	1,372	339	27	1	1,739
2016	1,243	315	31	4	1,593
2017	1,228	324	32	3	1,587
2018	1,275	333	35	3	1,646
2019	1,088	325	40	1	1,454
Total	6,206	1,636	165	12	8,019

LEVEL OF SERVICE OF SAFETY (LOSS) reflects a roadway segment's or an intersection's safety performance compared to similar segments or intersections.

The citywide crash heat map (**Figure 3**) shows crash experience as a combination of the following:

1. Most crashes occur at intersections; many of which are along Arapahoe Road.

2. Some roadway segments show clustering of crashes associated with congestion and high speeds (Arapahoe Road, Smoky Hill Road, University Boulevard).

3. There are KSI crash clusters on Arapahoe Road east of University Boulevard and in the central segment (between Havana Street and Potomac Street). There are additional clusters along the Dry Creek Road to Havana Street segment and the University Boulevard segment near Dry Creek Road.

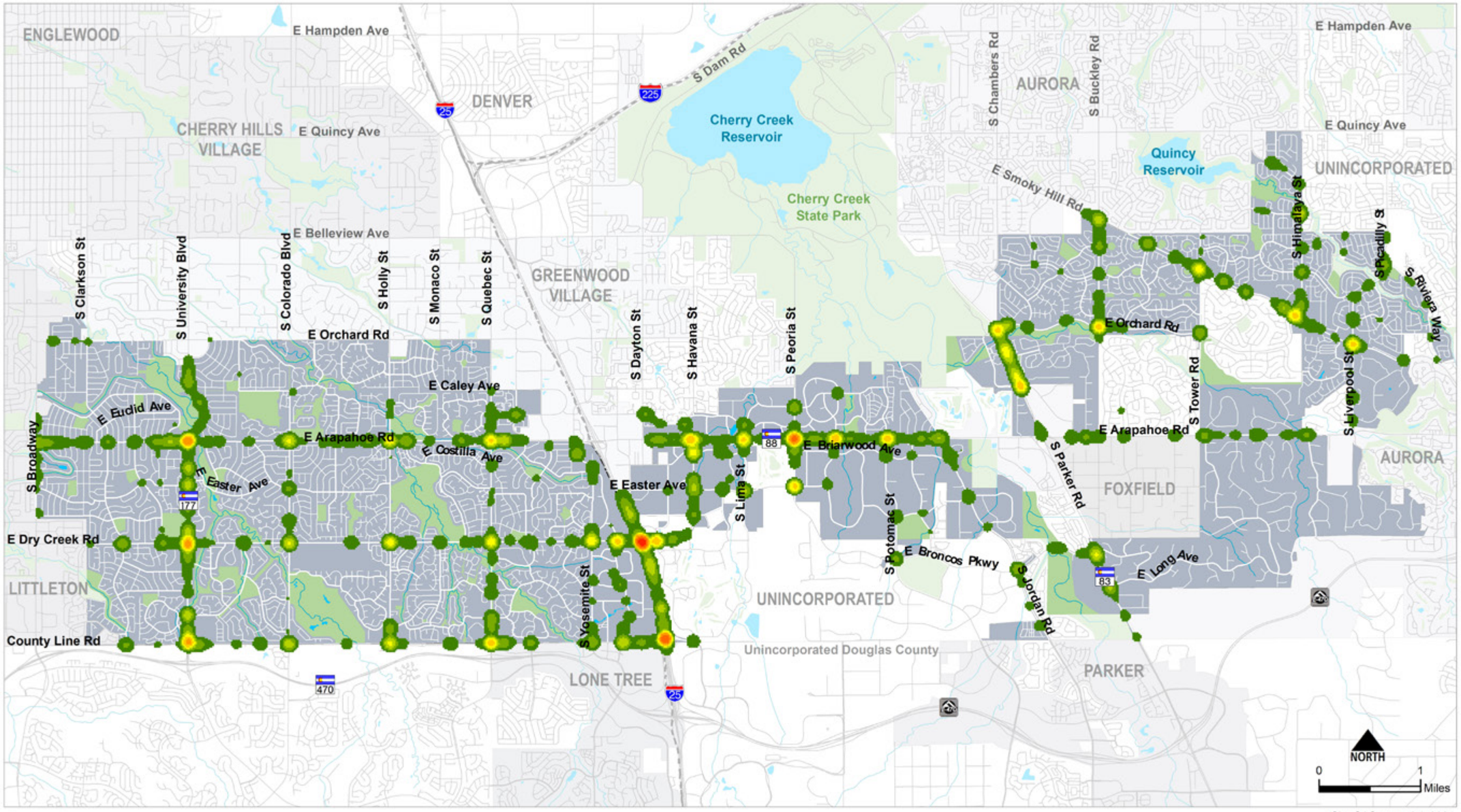
4. Vulnerable user (pedestrian and bicycle) crashes are mostly high severity crashes with over 80 percent of such crashes resulting in injuries or fatalities.

Bicycle & Pedestrian Involved Crashes

There were 163 vulnerable user crashes between 2015 and 2019, of which 128 were injury and 4 were fatal crashes, the remainder were property damage only. The number of crashes and level of severity are divided nearly equally between bicyclists and pedestrians through the city. It should be noted that even though bicycle and pedestrians constitute only 2 percent of the total crashes, they represent 33 percent of the fatalities in the city. This is a familiar nationwide trend that has led to the emphasis on vulnerable user safety.

Bicycle and pedestrian trips are expected to increase as more people are expected to choose active transportation options in the region. This growth emphasizes the critical importance of assessing safety issues for vulnerable users and the application of strategies such as crosswalk visibility, lighting, pedestrian refuge, reduced crossing distances (where possible) and reduced speeds in support of safe, comfortable, and connected facilities.

FIGURE 3: CRASH LOCATION HEAT MAP (2015-2019)



City Of Centennial, 2021

Legend

- Highest Crash Density
- Lowest Crash Density
- Roads
- Light Rail
- Rivers/Streams
- Lakes
- Parks
- Centennial City Boundary

Roadway Network

Current Conditions

Functional Classification

Streets generally provide two important functions: access and mobility. Each street type is designed to operate with certain characteristics based on adjacent land uses, connections to other facilities, transportation modes served, and proximity and connections to other facilities. The functional classification of a street describes these characteristics and reflects its role in the street network and its relationship with adjacent land use. Centennial's street classifications are shown below.

Local Streets serve the highest level of access, providing direct driveway access to adjacent properties and carrying traffic to collector streets. **Collectors** gather traffic from local streets and connect travelers to the arterial network. **Minor Arterials** provide trips of moderate length and offer connectivity to streets of higher functional classification. **Major Arterials** provide a high degree of mobility and serve corridor movements with longer trip lengths. **Interstates** have the highest level of mobility, with the goal of providing unimpeded high-speed regional and interstate connections and are under the jurisdiction of the Colorado Department of Transportation (CDOT).

Future Conditions

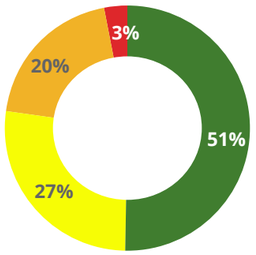
As Centennial and the region experience residential and employment growth over the next 20 years, traffic volumes are expected to increase. The analysis of future travel in Centennial is based on the DRCOG 2040 regional travel demand model. The model accounts for anticipated population and employment growth and multimodal transportation infrastructure available in the Denver metro region and associated cities.

The DRCOG model was used to develop a 2020 and 2040 refined street network within the City of Centennial to help inform the development of TMP recommendations and projects. Within the City of Centennial, only those roadway projects with committed funding are included in the 2040 model:

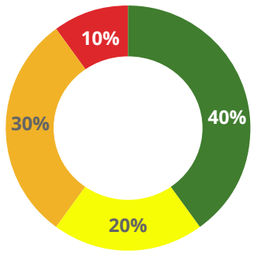
- Arapahoe Road bridge replacement over Big Dry Creek
- County Line Road widening to 4 lanes from Broadway to University
- Orchard Road widening to 3 lanes (and new sidewalk) from Franklin Street to the High Line Canal

Comparing current daily traffic volumes with planning level capacities (volume to capacity [V/C] ratio) can help to identify congestion levels on the roadway network. The planning level capacities used for this analysis vary depending on the street's functional classification, the area type, and the number of through lanes. Because the V/C analysis uses planning-level capacities and daily traffic volumes, it does not explicitly account for delays or congestion that may be experienced at a particular intersection during shorter intervals of time (i.e., peak hours).

2020 VOLUME TO CAPACITY RATIOS



2040 VOLUME TO CAPACITY RATIOS



Uncongested | Approaching Congested | Near Capacity/ Congested | Over Capacity/ Highly Congested

2040 Traffic Forecasts

Currently, over half of Centennial's arterial streets are uncongested, while only 3 percent are over capacity. The 2040 traffic forecasts are based on the future baseline street network and the household and employment growth in Centennial and the surrounding region. By 2040, 10 percent of the arterial streets are expected to be highly congested, and another 30 percent are expected to be near capacity (congested). **Appendix A** provides more detail and information on 2040 traffic forecasts.

VISION ZERO

DRCOG, in partnership with jurisdictions, agencies, and advocates, is developing a regional Vision Zero Action Plan to create a shared regional vision, implementable action plan, and strategies needed to move the region toward zero deaths and serious injuries. Centennial is one of a number of agencies throughout the region participating on the Vision Zero Stakeholder Committee to help inform the development of a plan that will:

- Reduce and eventually eliminate fatalities and serious injuries in the Denver region
- Support DRCOG's safety performance measures and targets
- Increase awareness of Vision Zero to influence safer behaviors on streets
- Provide tools and strategies to local jurisdictions and other stakeholders to encourage safety in planning and design of the regional transportation system

Vision Zero is a transportation safety approach with the core principle that "it can never be acceptable that people are killed or seriously injured when moving within the road transport system." Vision Zero switches safety from being solely the responsibility of street users to a shared responsibility of system designers and street users. (Source: DRCOG)

DRCOG VISION ZERO NETWORK

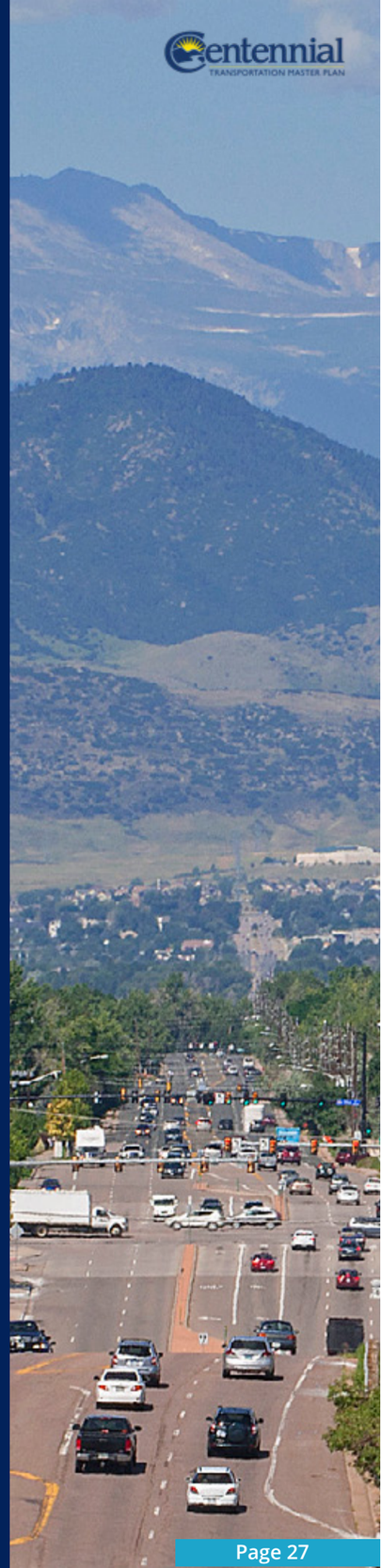
DRCOG's Taking Action on Regional Vision Zero initiative identifies Regional High Injury Network and Critical Corridors with the highest density of KSI crash cases. Corridors within the City of Centennial that were highlighted in the Vision Zero Network include:

CRITICAL CORRIDORS

- County Line Rd: Quebec St to I-25
- I-25: County Line Rd to Dry Creek Rd

HIGH INJURY NETWORK

- Broadway
- University Blvd
- Quebec St: County Line Rd to Dry Creek Rd
- I-25
- Peoria: North of Arapahoe Rd
- Parker Rd
- Chambers Rd: North of Parker Rd
- Buckley Rd: North of Arapahoe Rd
- Smoky Hill Rd
- Himalaya St: North of Smoky Hill Rd
- Picadilly Rd: North of Smoky Hill Rd
- County Line Rd: University Blvd to Colorado Blvd
- Dry Creek Rd: University Blvd to Quebec St
- Arapahoe Rd: Broadway to Buckley Rd



Bicycle Network

On-Street Bike Facilities & Trails

The City of Centennial has been gradually building a network of on-street bike facilities that is integrated with a robust network of local and regional trails. Currently, there are 11 miles of shared lanes, 15 miles of bike lanes, and 64 miles of trails. Most of the City's existing on-street bike facilities are west of I-25 – Easter Avenue and Clarkson Street are the two longest continuous stretches of striped bike lanes and/or signed bike routes in the city. East of I-25, there are only a handful of street segments with either striped bike lanes or signed bike routes; the irregular city boundaries in eastern Centennial are a significant challenge to establishing a continuous bicycle network, making it particularly important to integrate with bike facilities in Aurora, Greenwood Village, and unincorporated Arapahoe County. The City's street network west of I-25 also more closely represents a typical grid system, providing more alternative routes to arterials and major collectors for bicyclists looking to ride outside a single neighborhood area.

Centennial has a well-established network of off-street trails. Numerous major regional trails pass through the city, including the High Line Canal, Big Dry Creek, Willow Creek, Cherry Creek, and Piney Creek Trails. The High Line Canal Trail is primarily soft-surface, while the others are concrete and/or asphalt trails. All are generally wide enough to comfortably accommodate both bicyclists and pedestrians. In addition to these, the City has many local trails that provide local recreation opportunities and connectivity to the regional network. Many of Centennial's on-street bike facilities, particularly those west of I-25, provide direct connections to and between the regional trails.

Level of Traffic Stress

To attract bicyclists of a wide range of ages and abilities, a bicycle network needs to include safe, low-stress, and high-comfort facilities that limit the interaction with motor vehicles on streets. The bicycle Level of Traffic Stress (LTS) assesses the comfort level associated with bicycling on different types of on-street bicycle facilities and is useful in identifying where gaps in a community's low-stress network exist.

LEVEL OF TRAFFIC STRESS (LTS)

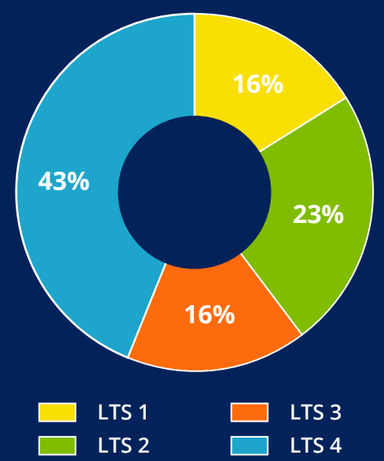
LTS 1: Little traffic stress; suitable for most all bicyclists, including children

LTS 2: Minimal interaction with traffic; suitable for most adult bicyclists

LTS 3: Exclusive riding zone or shared lane with low speeds; comfortable to many current bicyclists

LTS 4: High traffic stress; only suitable for "strong and fearless" bicyclists

CENTENNIAL LTS



CENTENNIAL SIDEWALK REQUIREMENTS

6 LANE ARTERIAL:

10' detached sidewalk with 9' landscape area

4 LANE ARTERIAL:

6' detached sidewalk with 10' landscape area

MAJOR COLLECTOR:

6' detached sidewalk with 8' landscape area

MINOR COLLECTOR:

5' detached sidewalk with 8' landscape area

LOCAL STREET:

5' sidewalk with 8' landscape area preferred

BIKE SCORE

47

BIKE SCORE

Bike Score is a measure that assesses the bikeability of a community based on four components: presence of bike lanes, topography, connectivity to major destinations, and bicycle mode share for commuting. Centennial has a Bike Score of 47 out of 100, indicative of a somewhat bikeable community with minimal bike infrastructure.

WALK SCORE

36

WALK SCORE

Walk Score, a nationally recognized metric for pedestrian accessibility, awards scores from 0-100 based on the number and type of amenities that can be reached in a 5-30 minute walk. Centennial earns a Walk Score of 36. This score is defined as car-dependent, where most errands require a vehicle.

Pedestrian Network

Centennial's Roadway Design and Construction Standards (updated 2018) specify the sidewalk requirements for different street types in the city. All public streets require sidewalks, with collector and arterial streets requiring a landscape area between the sidewalk and curb to allow separation between pedestrians and traffic traveling at higher speeds. The landscape area also provides an opportunity for street beautification. While a landscape area is preferred on local streets, it is not required.

Sidewalk Gaps

Approximately 67 percent of collector and arterial streets in Centennial have sidewalks on both sides of the street. While sidewalks exist on the majority of streets, some do not meet current standards. Sidewalks in poor condition or that do not meet standards can limit the ease of mobility of pedestrians, including persons with disabilities. Examples of sidewalk deficiencies include:

- Gaps in the sidewalk
- Missing accessible curb ramps at street crossings
- Poor sidewalk condition
- Missing or inadequate crossings
- Narrow widths and/or lack of buffer between sidewalk and street

Walk Access to Recreation and Schools

A 10-minute walkshed analysis was conducted to identify the percentage of residences within Centennial that are within a 10-minute walk (approximately a half mile, using the existing sidewalk and trail network) of a park or open space that offers an outdoor recreational experience within the City of Centennial. The areas within a 10-minute walk of a park or open space include 50 percent of households in Centennial. That is, 19,697 households have access to a park or open space within a 10-minute walk.

A similar analysis was conducted to identify walksheds associated with each school in Centennial. Neighborhoods that are proximate to a school, but in which residents cannot walk to the school within 10 minutes, were investigated for improvements to enable walking access, such as street crossing improvements, completion of missing sidewalks, or trail connections.

Transit

Bus & Rail Service

Regional Transportation District

The Regional Transportation District (RTD) serves eight counties in the Denver metro region. Specific RTD service within the City of Centennial includes fixed- route bus and complementary paratransit service, FlexRide, and light rail transit (LRT) service.

Bus Service

RTD operates 14 bus routes in Centennial on major arterials including Broadway, Arapahoe Road, University Boulevard, Parker Road, and Smoky Hill Road. Service frequencies for the majority of the routes in Centennial are either 30- or 60-minutes. Service changes put in place as a response to the COVID-19 pandemic have affected service hours for Routes 0 (South Broadway), 0L (Broadway), 66 (Arapahoe Road), 67 (Ridge Road), 139 (Quincy Avenue), 169 (Buckley Road), and 483 (Parker Road).

FlexRide Service

FlexRide service offers on-demand bus service in specific areas of the Denver metro region and provides first- and last-mile connections to RTD Park-n-Rides, transit stations, and medical centers. This service is offered to the general public on a first-come, first-served basis. The Orchard, Dry Creek and Arapahoe service areas make up the three FlexRide options available in Centennial; they are all centrally located and are in close proximity to I-25.

Light Rail Transit Service

RTD also operates several LRT lines that connect residents to regional destinations in the Denver metro region. The E and R Lines serve the City of Centennial.

Bustang

CDOT's interregional bus service, Bustang, offers service connecting into the Denver Tech Center from Colorado Springs.

Walk Access to Transit

An analysis was completed to evaluate Centennial's walk access to transit. The analysis showed that 34 percent of neighborhoods in Centennial are within a 10-minute walk to a bus stop. Neighborhoods where residents cannot walk to a bus stop within 10 minutes may be investigated for improvements to enable walking access, such as street crossing improvements, completion of missing sidewalks, or trail connections.

Transit Facilities

Bus Stops

Pre-COVID-19 numbers show bus stops with the highest number of boardings and alightings were located along the 0L, 66, and 67 routes near the intersections of University Boulevard and Easter Avenue and Easter Avenue and Race Street.

Transit Stations

The Dry Creek Station is the only LRT station located within city limits. The station provides 235 parking spaces and on average, in 2019, had 12 percent availability.

Park-n-Rides

Although many nearby Park-n-Rides are located throughout central Arapahoe County, there is just one Park-n-Ride within the City of Centennial. The Smoky Hill and Picadilly Park-n-Ride is located on the northeast side of the City and provides connections to Routes 135 (Smoky Hill Road) and 139 (Quincy Avenue).

Human Services Transportation

Different organizations such as RTD, Via Mobility Services, and Midtown Express offer specialized transportation services to aid community members in getting to and from essential services and other important destinations. These services provide vital support for freedom of choice and mobility for different communities.

Local Coordinating Council

Transportation Solutions Arapahoe County provides resources and support for older adults, people with disabilities, and people with low incomes. The organization serves as a local coordinating council under the Denver Regional Mobility and Access Council. In 2021, the organization obtained its non-profit 501(c)3 status.

IDENTIFIED BUS RAPID (BRT) TRANSIT NETWORK ROUTES

1. **BROADWAY**
2. **UNIVERSITY BOULEVARD**
3. **ARAPAHOE ROAD**

Source: RTD BRT Feasibility Study, 2019

TRANSIT SCORE

25

TRANSIT SCORE

Transit Scores are developed by assessing how well a location is served by public transit based on two measures: distance and the type of nearby transit service. Overall, Centennial has a transit score of 25, characterized as having minimal transit and/or access. The City's score is significantly lower than those of neighboring communities.

MICROMOBILITY OPTIONS

SMALL SHUTTLES/ VEHICLES

STATION-BASED BIKES

DOCKLESS BIKES/E-BIKES

ELECTRIC SCOOTERS

Advanced Mobility & Mobility Hubs

Mobility hubs, emerging transportation technology, and connected and thoughtfully planned infrastructure that support healthy, accessible, and inclusive mobility options will all play a significant role in shaping transportation in the coming years.

Additionally, a growing population and expanding employment sector, alongside increasing levels of emissions and pollution, demonstrate the urgent need for innovative and effective transportation solutions.

Centennial is poised to be at the forefront of these statewide and local efforts, given the number of important connective corridors like I-25, Arapahoe Road, and University Boulevard that link the Denver metro region. The City's willingness to pursue new transportation solutions will be leveraged to meet the mobility needs of current and future residents of Centennial.

Electric Vehicle Charging Stations

Electric Vehicle (EV) charging stations are mostly located in central Centennial and tend to be located near major north-south corridors, including I-25, Parker Road, and Smoky Hill Road. The distribution of charging stations shows that 85 percent are public stations, while 15 percent are for private use. Most charging stations have one or two ports. The highest concentration of ports within one station is located at the IKEA Store and near the Dry Creek Station.

Micromobility

Different transportation solutions will be required to address the growing need to connect to educational, employment, medical, and social/recreational destinations. Micromobility includes a variety of transportation options such as small shuttles/ vehicles, station-based bikes, dockless bikes and e-bikes, and electric scooters. These modes of transportation provide ways to address first- and last-mile connections, short trip travel, and other mobility needs. Currently, there are no micromobility options available in the City of Centennial.

CHAPTER 4.
VISION

The TMP is based on a set of seven goals that support the transportation needs, community values, and the City's vision. The seven goal areas include:

1. Safety
2. Flexible Mobility
3. Innovation
4. Fiscal Responsibility
5. Efficiency & Reliability
6. Regionalism & Partnerships
7. Economic & Community Vitality

VISION

"The City of Centennial is a connected community, where neighborhoods matter, education is embraced, businesses are valued, and innovation absolute."

The four tenets of the City's vision guide the TMP and provide a foundation for the transportation goals.

NEIGHBORHOODS MATTER

Multimodal connections within and between neighborhoods are an important aspect of the TMP. The Safety and Economic & Community Vitality goals are strongly aligned with this tenet of the City's vision.

EDUCATION IS EMBRACED

The TMP supports safe and convenient access to schools. The Flexible Mobility goal emphasizes the provision of travel mode choices, such as walking and bicycling, to access community destinations including schools.

BUSINESSES ARE VALUED

Transportation infrastructure and access to convenient transportation options are cited as important factors in locating businesses. The Economic and Community Vitality goal envisions a transportation system that effectively supports Centennial's business community.

INNOVATION IS ABSOLUTE

The Innovation goal directly aligns with this tenet of the City's vision. The TMP builds on Centennial's history of innovation and positions the City for continued integration of advanced mobility options.

Transportation Goals & Performance Measures

Performance-based planning affords a structure for the Centennial TMP to ensure scarce resources are used effectively and equitably. The community values around transportation are woven into the goals, performance measures, and project evaluation criteria (as described in Chapter 7) used to identify high-priority transportation projects.

Goals are the foundation for performance-based planning; the seven goals articulate the desired end state, while the performance measures are linked to the goals and measure system-wide progress over time toward achieving the stated goals. Performance measures aid in planning, developing policy, prioritizing investments, and measuring progress. Several characteristics are common to good performance measures:

- **Available Data** – Measures are most effective when they use easily available data that are collected on a regular basis.
- **Trackable over Time** – Measures should be based on consistently tracked data that can be compared annually or semiannually.
- **Relationship to Goals** – In performance-based planning, performance measures should track progress toward stated goals.
- **Storytelling Potential** – Measures should be meaningful and help to weave a storyline around system performance. They can be an effective communication tool for requesting funds and garnering public support.

SAFETY

Goal

Transportation-related fatalities and injuries are rare, and people feel safe walking, bicycling, driving, riding public transportation, or using a mobility device.

Performance Measures

1. **Number of injury and fatal crashes**
2. **Number of bicyclist or pedestrian involved crashes**

What does this look like in my neighborhood?

Parents take their kids on evening walks and bike rides without stressing about which streets and intersections are okay and which should be avoided – they are all safe and comfortable.

FLEXIBLE MOBILITY

Goal

People of all ages, abilities, and social identities have convenient and affordable mobility options and freedom of choice to use the travel mode that best meets their needs.

Performance Measures

3. **Mode split**
4. **Total miles of on-street bicycle facilities and trails**
5. **Number of completed sidewalk and crossing improvement projects**
6. **Percent of households within a 10-minute walk of a transit stop or station**
7. **Percent of households within a 10-minute walk of a school**

What does this look like in my neighborhood?

In a typical work week, a Streets at SouthGlenn worker who shares one car with their partner regularly alternates between biking, driving, and taking the bus to commute depending on each of their daily schedules and the weather – all are convenient and reliable options for reaching the shopping center.

INNOVATION

Goal

Transportation infrastructure and policies prepare for mobility technologies that enhance the user experience and reduce transportation-related emissions and environmental impacts.

Performance Measures

8. **Number of signalized intersections with communications connectivity**
9. **Annual greenhouse gas emissions per household (source: CTN H+T)**

What does this look like in my neighborhood?

A high school student rides an e-bike to school and to their after-school job along routes that include bike detection at all major intersections; the school has ample secured bike parking for students and faculty.

FISCAL RESPONSIBILITY

Goal

Transportation infrastructure is designed and maintained to optimize public benefit, and investments leverage funding opportunities and demonstrate good stewardship of public funds.

Performance Measures

10. **Percent of City streets with Good pavement condition**
11. **Annual federal, state, and other grant money received for transportation projects**

What does this look like in my neighborhood?

A retiree drives to the Civic Center to serve on the Senior Commission without concern for damage to their car from poor road conditions because all surfaces are smooth and well-maintained.

EFFICIENCY AND RELIABILITY

Goal

The transportation network is optimized to minimize congestion and offer reliable travel times for people traveling in and through Centennial.

Performance Measures

12. **Average travel time to work**
13. **AM Peak Period Mobility (average speed over base free flow speed)**
14. **PM Peak Period Mobility (average speed over base free flow speed)**

What does this look like in my neighborhood?

A Denver Tech Center employee who commutes along Arapahoe Road from east Centennial leaves their home at the same time every morning and always reaches the office on time.

REGIONALISM AND PARTNERSHIPS

Goal

Centennial is a leader in working with neighboring communities and regional partners to build cohesive regional networks for all modes of transportation.

Performance Measures

15. **Dollars invested in projects with regional significance**

What does this look like in my neighborhood?

A mobility device user living in west Centennial and working in Littleton has high-quality sidewalk connections to reliable and convenient transit service on both ends of their commute.

ECONOMIC AND COMMUNITY VITALITY

Goal

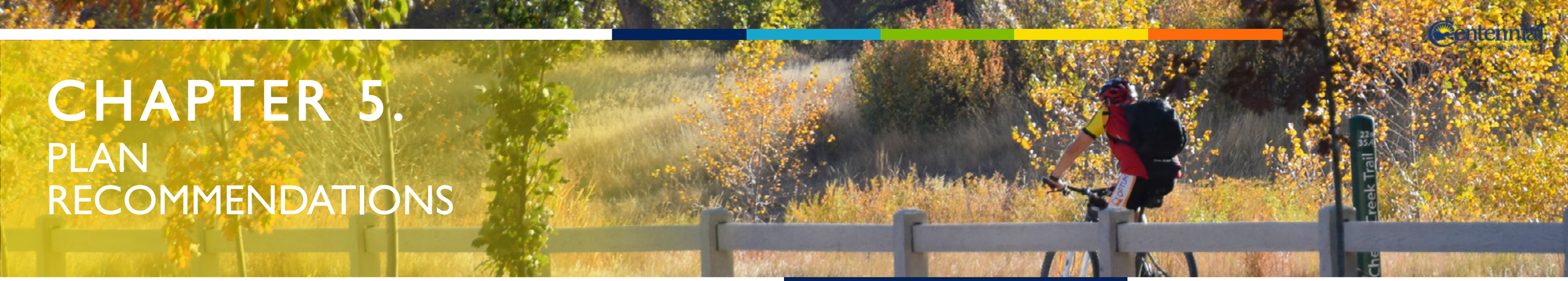
The City's streetscapes and transportation system support economic vitality, connect neighborhoods, and promote a vibrant community identity.

Performance Measures

16. **Percent of households within a 10-minute walk of neighborhood retail**

What does this look like in my neighborhood?

An 8-year-old can safely get somewhere to buy ice cream and then make it home before the ice cream melts.



CHAPTER 5.
PLAN RECOMMENDATIONS

The street network in Centennial has historically been designed to prioritize the efficient movement of vehicles as a transportation mode rather than to balance multiple modes of travel including vehicles, transit, bicycles, and pedestrian activities. Roadway widening was used in Centennial (and throughout the United States) as the primary means to mitigate congestion. However, in recent years, there has been a considerable shift in how congestion is addressed while considering the safety for all users – including bicyclists and pedestrians, the most vulnerable users in the transportation system – and recognizing the significant costs associated with roadway widening and the decreasing buying power of transportation funding.

This Transportation Master Plan represents a more balanced and equitable approach to planning Centennial's streets. The philosophy is to maximize the existing system's capacity, making it function as efficiently as possible for moving people, while addressing critical safety issues and dedicating space for transit, bicycle and pedestrian travel modes. This includes an increased emphasis on technology such as traffic signal timing coordination, intersection congestion and safety issues, and accommodation of all travel modes, while allowing construction of critical capital projects (in some cases, roadway widening).

Multimodal Roadway Plan

Development of the Roadway Plan was informed through technical analysis, community input, project feasibility, and existing projects and plans (including recent corridor studies like the Colorado Boulevard Multimodal Corridor Study and the Smoky Hill Corridor Study). Key corridors in Centennial were evaluated for their existing conditions and the proposed improvements for other modes. A needs assessment and opportunities analysis were completed for each key corridor (documented in Chapter 6) with considerations including how vehicles interact with other modes, right-of-way (ROW) width, safety, technology, and street operations. The Multimodal Roadway Plan, shown on **Figure 4**, provides an overview of the recommendations for Centennial's roadway network.

The Multimodal Roadway Plan represents a mix of solutions to address the varied travel needs of the community. Many of the projects included in the plan are multimodal and will improve the safety and mobility for motor vehicles, transit riders, bicyclists, and pedestrians. The Multimodal Roadway Plan includes:

STREET RECONFIGURATIONS: that repurpose travel lanes to improve bicycling and walking, add medians, and provide intersection improvements for all travel modes along corridors.

INTERSECTION IMPROVEMENTS: to address localized safety and/or operational needs and improve bicycle and pedestrian crossings.

BRIDGE REPAIRS: to either repair or replace bridges with functional or structural deficiencies.

TRAFFIC SIGNALS: installation where signal warrants are met to improve vehicle, bicycle, and pedestrian movements.

SIGNAL COORDINATION: improvements, such as adaptive signal timing, to optimize the flow of traffic and reduce travel delays.

ROADWAY WIDENING: of critical corridors to address congestion and improve travel times.

Capital Projects

Specific projects that constitute the Roadway Plan are listed in **Appendix E** and are also shown by corridor in Chapter 6. Due to Centennial's location within the Denver metro area, many of the capital projects will be designed and constructed in partnership with others. The capital projects are categorized as follows:

In Progress Project

As of February 2022, the design and/or construction for these projects are underway, and funding is committed. These projects are anticipated to be complete in the near future.

Centennial Project

The City of Centennial will design and construct these projects, and funding will likely come from City revenue sources.

Centennial Led Project with Partner(s)

The City of Centennial will lead the design and construction of these projects, but they will be done in partnership with another agency or private entity. Funding will likely come from a combination of City and other revenue sources.

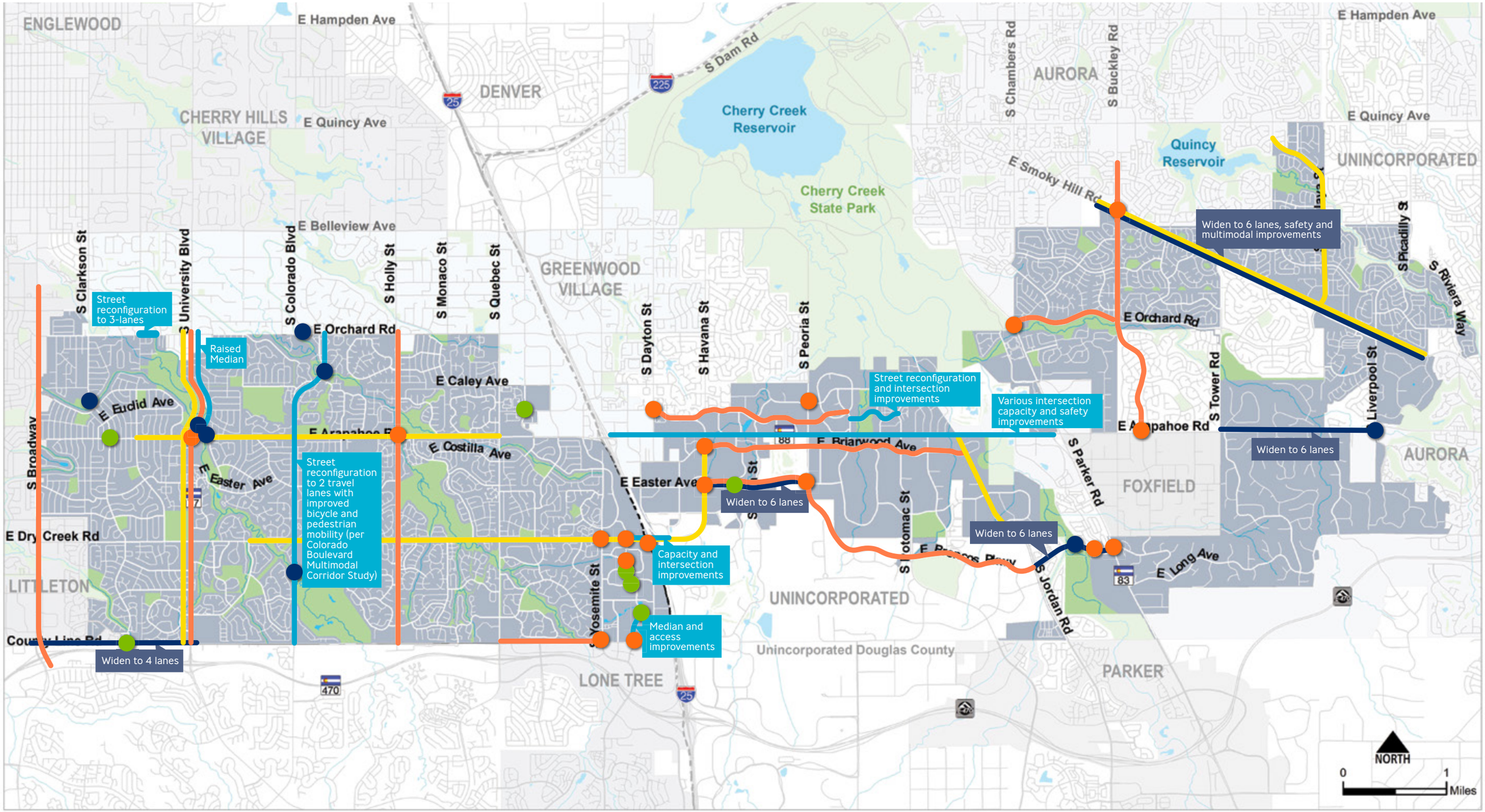
Partner Led Project with Centennial

Another agency will lead these projects and Centennial will be a partner, likely contributing financially to the project.

Other Stakeholder Project; Centennial Supports:

Another agency will design and construct these projects. While the City of Centennial supports these projects, a financial contribution is not anticipated.

FIGURE 4: MULTIMODAL ROADWAY PLAN



Legend

- Intersection Capacity and/or Safety Improvement
- Structure Replacement or Repair
- Traffic Signal
- Street Reconfiguration
- Roadway widening
- Adaptive Signal Timing
- Corridor Study
- Centennial City Boundary

NOTE: The projects that constitute the Multimodal Roadway Plan will be completed over time as funding is available. Some projects will be completed by the City of Centennial, some in partnership with others, and some entirely by others.

Traffic Program

The City's Traffic Engineering Services provides a wide range of transportation operations, infrastructure maintenance and improvements including pavement markings, traffic signals, and traffic signs. The City's Traffic Management Center (TMC) is used for live monitoring and management of traffic operations. Locations for new traffic signals must meet signal warrant criteria documented in the federal Manual on Uniform Traffic Control Devices (MUTCD). The City regularly studies intersections that are likely candidates for signalization or that the community has raised as concerns. Traffic Engineering Services installs new traffic signals after warrants are met and when funding is available. However, meeting warrants does not necessarily lead to installation. Traffic Engineering Services may determine not to install a signal as soon as warrants are met, to do other improvements, to continue evaluating, or to wait due to anticipated changes. In addition to new traffic signals, Traffic Engineering Services improves existing signals by:

- Converting span wire signals to mast arms
- Optimizing the signal timing at individual signals
- Making minor signal modifications, often to improve safety, such as protecting left turns
- Installing signal coordination, such as adaptive signal control, along corridors to improve traffic flow and progression

Neighborhood Traffic Management Plan

Centennial has a comprehensive Neighborhood Traffic Management Program (NTMP). The intent is to create solutions for responding to neighborhood traffic mitigation requests. The program's primary objectives are to:

- Improve traffic safety on neighborhood streets by reducing speeding and cut-through traffic
- Foster pedestrian safety
- Efficiently allocate the use of public resources
- Encourage citizen involvement in solutions to neighborhood traffic problems

NTMP complements the recommendations of the TMP, and specific recommendations for neighborhood streets are subject to the NTMP.

Corridor Beautification, Branding, and Street Lighting

The City of Centennial is undergoing a branding process concurrently with the TMP to help communicate who we are as a community. The recommendations from that effort are expected to address street beautification through landscaping treatments, and wayfinding and City branding through entry monumentation. The TMP does not include specific recommendations about corridor beautification. The corridor profiles (Chapter 6) identify corridors that could benefit from these treatments. Similarly, the TMP does not include specific street lighting recommendations, but the corridor profiles identify key corridors where street lighting could improve safety for vehicles and for pedestrians.

Xcel Energy provides a funding mechanism, known as the 1% fund, for utility undergrounding, which is equal to one percent (1%) of their preceding year's electric revenues paid by customers. Most undergrounding work is accomplished through the 1% fund. The City of Centennial should continue working with both Xcel Energy and CORE Electric to underground utilities concurrently with transportation projects.

Bridge Repairs and Reconstruction

CDOT regularly inspects the off-system (non-State Highway) bridges in Centennial, and provides a rating of each bridge's sufficiency, and identifies those bridges that are functionally obsolete (e.g., the travel lanes are too narrow or the bridge lacks sidewalk) or structurally deficient. These bridges require repair or,in some cases, reconstruction. The City incorporates these structural repairs into the CIP either as capital projects or maintenance activities, as appropriate.

Bicycle Plan

The Bicycle Plan identifies an on-street bike network that connects to the trail network and provides safer and low-stress bicycle commuting and recreational opportunities. This plan depicts a comprehensive system of off-street and on-street facilities to safely connect neighborhoods and destinations and encourage bicycle travel.

To attract bicycle riders of a wide range of ages and abilities, a bicycle network needs to include safe, low-stress, and high-comfort facilities that limit the interaction with motor vehicles on streets. A range of guiding factors were considered to identify facility recommendations that will enhance the City's existing bicycle infrastructure and transform it into a comprehensive network, providing community members in all parts of the City access to comfortable bicycling options.

A Low-Stress Network – The overarching focus during development of the network was providing a low level of stress to offer comfortable options for as many people as possible. The Bicycle Level of Traffic Stress analysis (described in Chapter 3) helped to identify needed upgrades to the City's bicycle network that would provide riders with a low level of stress (LTS 1 and 2).

Public Input – Public input was a another important factor during the early stages of network development. Location-specific comments from public outreach were helpful in identifying areas throughout the city with inadequate bicycle access or potential safety issues.

A Connected Network – Connectivity, both between bicycle facilities and to destinations, is a vital component of a bicycle network. Disjointed and inconsistent facilities interrupted by high stress streets and crossings make it difficult for people on bikes to identify comfortable routes, reducing the likelihood that they will choose to bike. Due to the crucial nature of continuity, ensuring that no existing or proposed facilities lead to dead-ends or high-stress streets was an important consideration during network development. Providing low-stress connections to destinations commonly accessed by bicycle, like schools, parks, transit stations, and recreation centers, was emphasized. Enhancing connectivity between the on-street bike and trail network was a primary focus as well.

Spacing – One of the challenges of developing a comfortable bicycle network is providing direct connections to locations of interest while also avoiding high-stress streets. If people must travel significantly out of their way by bike to stay on low-stress facilities, they will be less inclined to choose bicycling as a mode. Spacing of approximately one-half mile between parallel low-stress facilities was used as a general guide. Holding to this spacing will make a significantly larger portion of the city accessible to people on bikes via relatively direct routes.

Feasibility of Implementation – A final, but no less important, consideration that factored into the network development process was feasibility of implementation. A proposed bicycle network is not useful if significant portions of it cannot be built practically. Feasibility of proposed on-street facilities was mainly assessed by examining existing street cross sections. Measuring current lane and street widths provided preliminary indications of what type of infrastructure improvements or modifications would be necessary to add bicycle facilities. If the changes required to add a specific type of bicycle facility were deemed infeasible (for example, required significant ROW acquisition or reduced the number of travel lanes to a level that would not adequately accommodate the motor vehicle demands), alternate facility types and/or routes were considered.

Trails: Multiuse trails generally follow alignments independent from the street network. Multiuse trails are typically concrete and range from 10 to 16 feet in width. They provide a continuous route separated from streets with frequent directional signage provided at tail intersections and decision-making points. Multiuse trails are used for both commuters and recreation.

Sidepath: Sidepaths are similar to multiuse trails but are parallel to a street. They are usually detached from a street's curb and gutter and completely separated from motor vehicles' path. A sidepath is usually designed for two-way travel and marked to indicate directionality. This concrete facility is typically wider than a sidewalk to accommodate a variety of uses, ranging from 8 to 16 feet. Sidepaths are used for both commuting and recreation.

Buffered Bike Lanes: Buffered bike lanes are conventional bicycle lanes paired with a designated buffer space separating the bicycle lane from the adjacent motor vehicle travel lane and/or parking lane. Buffered bike lanes provide greater distance between motor vehicles and bicyclists, which appeals to a wider cross-section of bicycle users.

Bike Lanes: Bike lanes designate an exclusive space for bicyclists using pavement markings and signage. The bike lane is located adjacent to motor vehicle travel lanes and flows in the same direction as motor vehicle traffic. Bike lanes facilitate predictable behavior and movements between bicyclists and motorists.

Shared Lanes: Shared lanes are used by both automobiles and bicyclists and are typically delineated by shared lane markings (sometimes called sharrows) to indicate a shared environment for bicycles and automobiles. Shared lane markings send the message to drivers that they should expect bicyclists share this road with them. They also help bicyclists position themselves in the roadway. Shared lane markings should be applied in situations where the difference in speed between bicyclist and motorist travel speeds is low, such as on local and collector streets.

Cycle Track: Cycle tracks are defined as a one- or two-way bikeway that combines the user experience of a sidepath with the on-street infrastructure of a conventional bike lane. They are physically separated from both motor vehicle and pedestrian traffic.

Bicycle Plan

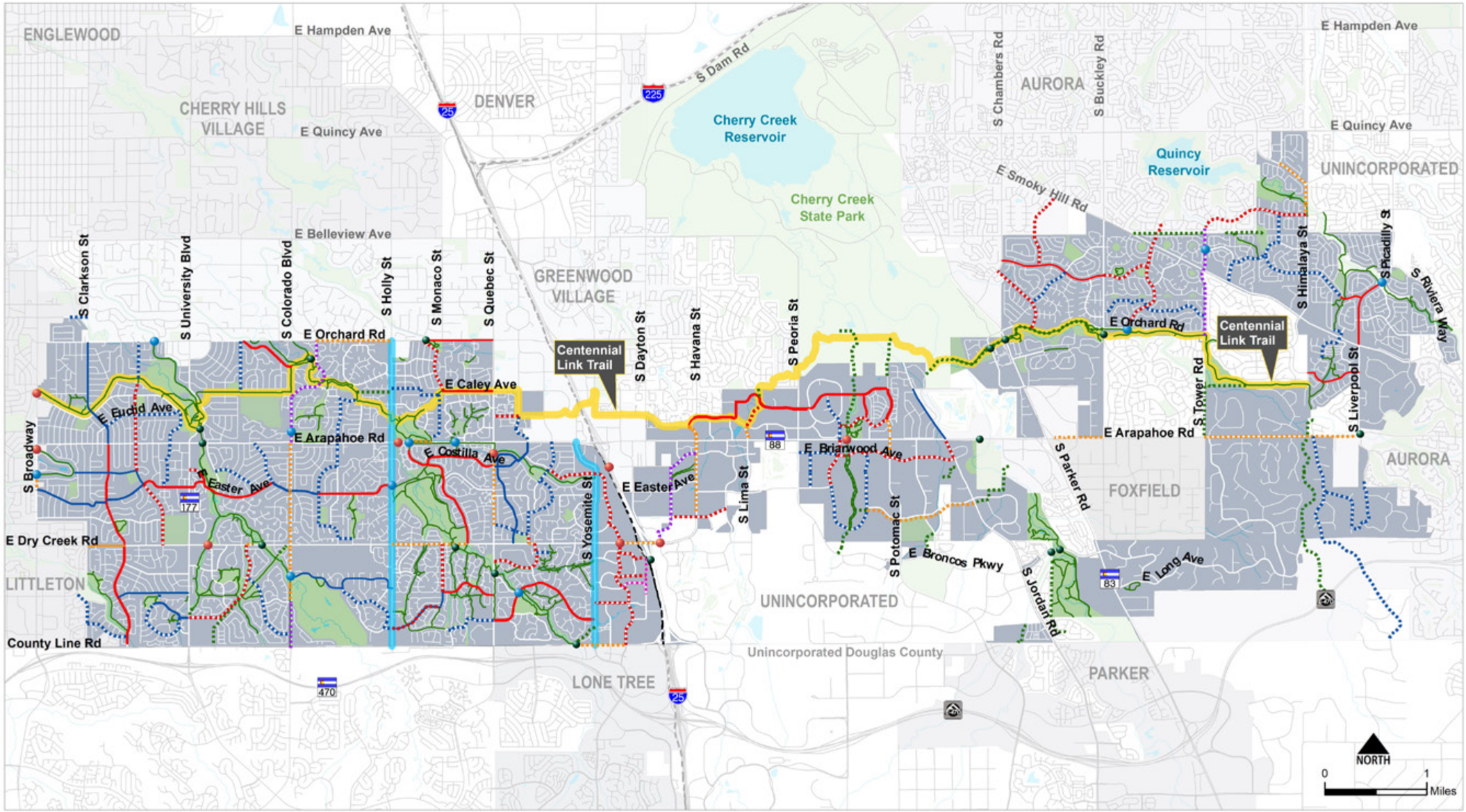
The Bicycle Plan (**Figure 5**) was developed to accommodate bicyclists of all ages and abilities by providing a connected system of low-stress bike routes. The network builds on existing and previously proposed trails and on-street bikeways and will connect people on bikes to destinations throughout Centennial.

The Bicycle Plan builds on existing bike lanes, buffered bike lanes, shared lanes, and sidepaths. Although existing and proposed trails are shown on the Bicycle Plan (**Figure 5**) for connectivity purposes, this plan focused on the identification and implementation of on-street bicycle facilities.

Unsignalized intersections, particularly across major streets, are often challenging for people to cross on bikes. The stress of having to cross multiple lanes of high-speed traffic without a protected signal phase can be enough to discourage some from bicycling, even where a strong network of low-stress facilities exists. Providing safe ways to cross major streets is important to the success of a bike network, and improved street crossings will help to reduce or eliminate the barriers that major streets present to bicyclists. The Bicycle Plan includes at-grade crossing improvements and bicycle/pedestrian underpasses/overpasses to reduce or eliminate the barriers that major streets present to bicyclists. These crossing improvements will also benefit pedestrians. As bicycle facilities are added, every street crossing should be evaluated for improvements.

The bicycle networks of adjacent communities and the Arapahoe County Bicycle and Pedestrian Master Plan recommendations were considered in the creation of Centennial's bicycle network. Continued coordination with adjacent communities will be required to ensure connectivity and seamless transitions of bicycle facilities across jurisdiction boundaries.

FIGURE 5: BICYCLE PLAN



City Of Centennial, 2022

Legend

Existing Bicycle Network
- Existing Bike Lane
- Existing Shared Lane
- Existing Sidepath

Existing Bicycle/Pedestrian Underpass/Overpass

Existing Trails

Proposed Bicycle Network
- Bike Lanes
- Buffered Bike Lanes
- Cycle Track
- Shared Lanes
- Sidepath
- Trail
- Centennial Link Trail
- Multimodal Corridor Study

Proposed Crossing Improvement

Proposed Bicycle/Pedestrian Underpass/Overpass

Pedestrian Plan

Centennial includes a variety of development patterns such as residential grids, low-density residential with curvilinear streets, suburban business districts, and rural/open spaces. Pedestrians rely on sidewalks, crosswalks, and other pedestrian facilities to travel through their neighborhoods, commute to work or school, run errands, recreate, or access transit.

The Pedestrian Plan supports redundancy in the sidewalk and trail network to maximize safety, connect to adjacent land uses, and provide people of all abilities with a choice in travel mode, as well as pleasant environments for recreation.

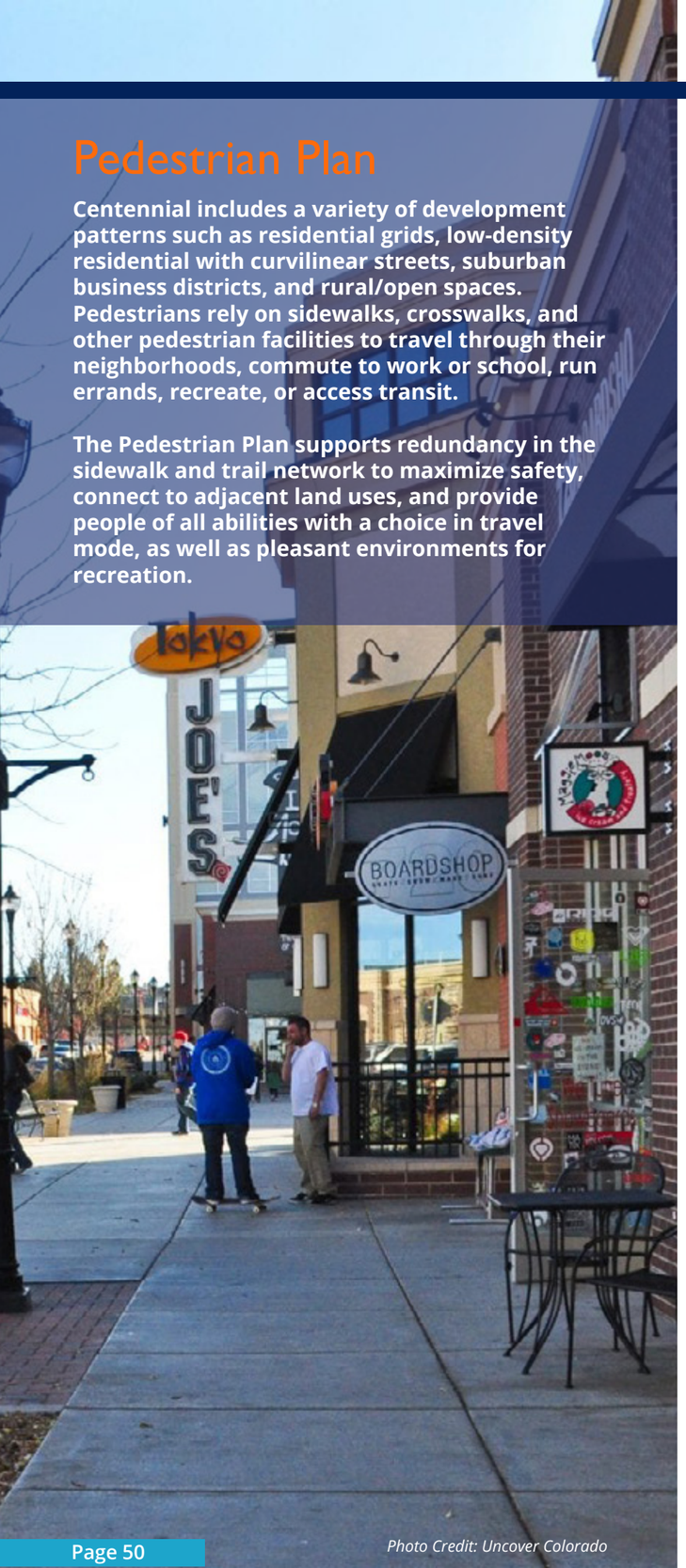


Photo Credit: Uncover Colorado

The Pedestrian Plan focuses on completing gaps in the pedestrian network, providing pedestrian access to key destinations like schools and transit stops, improving the safety for pedestrians crossing streets, and improving pedestrian comfort by widening narrow sidewalks.

Pedestrian improvements, shown on **Figure 6**, focus on completing gaps in both the arterial sidewalk network and the neighborhood sidewalk network. As documented in **Appendix A**, sidewalk gaps are most pronounced in the central portion of the city (between I-25 and Parker Road). The neighborhoods east of Parker Road were built more recently and nearly all of the streets comply with current sidewalk standards. West of I-25, sporadic gaps in the sidewalk network require infill sidewalks. Centennial's pedestrian environment will also be improved through implementation of at-grade crossing improvements and pedestrian underpasses/overpasses, and the multiuse trail and multiuse sidepath projects will benefit both pedestrians and bicyclists.

ADA Transition Plan

The City of Centennial is developing an Americans with Disabilities Act (ADA) Transition Plan concurrent with this TMP. This document will outline the City's compliance with ADA, provide a self-evaluation, and identify methods to remove barriers and make facilities accessible. The ADA Transition Plan should be referenced when sidewalk projects are constructed in Centennial to ensure compliance and to prioritize funding for critical ADA projects. Sidewalks should be widened opportunistically as a part of street rehabilitation projects to meet ADA and City standards.

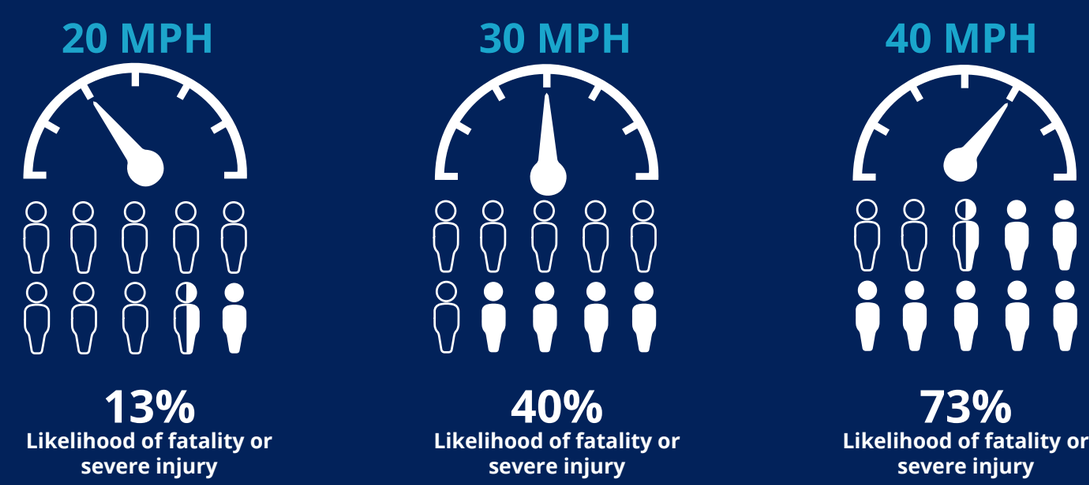
CENTENNIAL SIDEWALK MINIMUM REQUIREMENTS

- **6 Lane Arterial**
  10' detached sidewalk with 9' landscape area
- **4 Lane Arterial**
  6' detached sidewalk with 10' landscape area
- **Major Collector**
  6' detached sidewalk with 8' landscape area
- **Minor Collector**
  5' detached sidewalk with 8' landscape area
- **Local Street**
  5' sidewalk with 8' landscape area preferred

Source: 2018 City of Centennial Roadway Design & Construction Standards

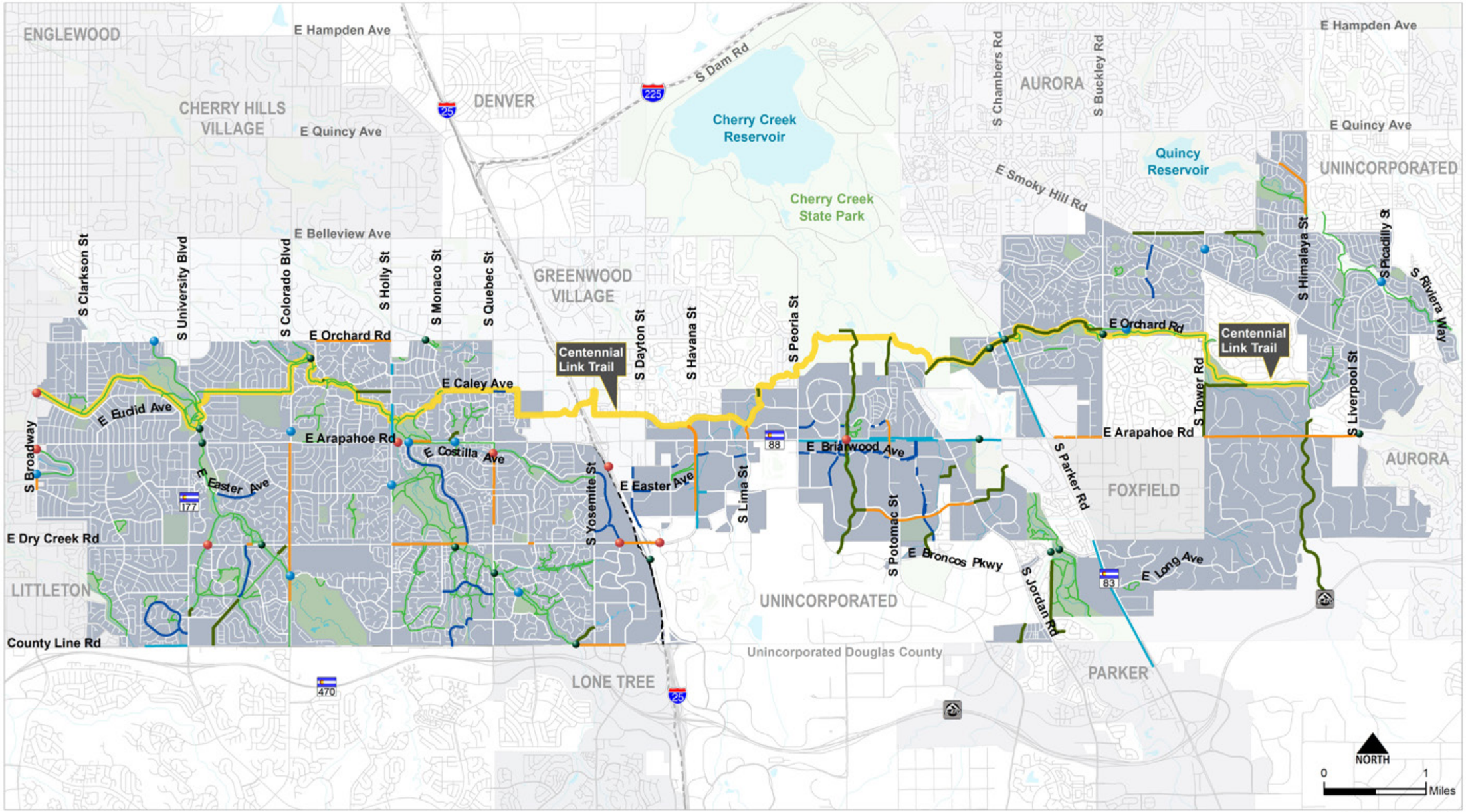
SAFETY & SPEED LIMITS

The risk for fatalities or severe injuries increases at higher vehicle speeds, especially if a pedestrian or bicyclist is involved in a crash. Designing streets for slower speeds and reducing the tolerance for speeding can be effective ways to increase safety for pedestrians and bicyclists.



Source: Tefft, Brian C. Impact speed and a pedestrian's risk of severe injury or death. Accident Analysis & Prevention. 50. 2013

FIGURE 6: PEDESTRIAN PLAN



City Of Centennial, 2022

Legend

- Existing Bicycle/Pedestrian Underpass/Overpass
- Existing Trails

Proposed Pedestrian Improvements

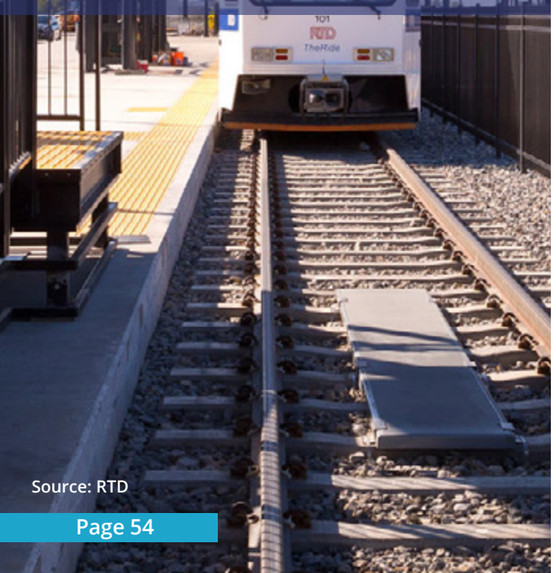
- Sidewalk Widening Projects (Sidepaths)
- Arterial Sidewalk Gap Projects
- Neighborhood Sidewalk Gap Projects
- Trail Projects
- Centennial Link Trail
- Proposed Crossing Improvement
- Proposed Bicycle/Pedestrian Underpass/Overpass
- Roads
- Light Rail
- Centennial City Boundary

Transit Plan

Public transit is an important public mobility option that provides access to activity centers and jobs in Centennial, as well as access to the regional public transportation system that connects Centennial to and from the larger Denver metro area.

As the primary public transportation provider in Centennial, RTD operates the Southeast Light Rail Line, which provides reliable north-south connectivity along the I-25 core. RTD also provides first- and final-mile access to the light rail stations and activity centers along the I-25 core through on-demand transit service (FlexRide). Fixed-route transit service is limited throughout the city, particularly for routes that provide east-west connectivity.

Like many transit agencies in Colorado and across the nation, RTD had to cut service – both routes and service hours - due to limited ridership, changes in travel patterns, and public health concerns that stemmed from the COVID-19 pandemic.



Source: RTD

RTD is currently developing a System Optimization Plan (SOP) that looks at how to refine RTD's current services across the region to increase ridership, improve performance, and ensure fiscal sustainability over time. The SOP is anticipated to be approved by the RTD Board in April 2022. The SOP will guide RTD on how to rebuild service across the region over the next five years. The majority of the bus routes operating in Centennial today are a part of RTD's SOP; however, two routes that were cut in 2020 due to COVID will likely be permanently eliminated: Route 67 (Ridge Road) and the DRFX (Peak Period Fixed-Route along Dry Creek Road). All of the FlexRide Service Areas will continue to operate and serve residents, employees, and visitors along the I-25 corridor.

Many communities have discussed the option of "buying-up" service from RTD (i.e, that the local agency would pay RTD to provide new service or enhance existing service in their community). Unfortunately, due to the operator shortage that RTD and many other agencies are facing, even if funding were available, RTD does not have the capacity to operate additional service. Through the development of RTD's Mobility Plan for the Future, RTD has been talking with stakeholders about developing a local agency grant program. The local agency grant program would allow local agencies to determine how to best use those funds and deliver localized transit service in their communities. This is something that Centennial should continue to monitor as it could provide an opportunity for the City to expand service or implement transit pilot projects such as microtransit. Stakeholders and the public highlighted microtransit as an area of interest throughout the development of the TMP.

Centennial also must consider the needs of equity populations across the city, including people with disabilities and older adults. Due to the low densities across much of the city, fixed-roue transit is often not a feasible mobility solution. However, equity populations and those who cannot or choose not to drive need access to reliable mobility services. Centennial should continue to participate in Transportation Solutions Arapahoe County and the Denver Regional Mobility and Access Council to support continued partnerships and implementation of human services transportation in the city. Overall, the advancement of transit in the City of Centennial must be rooted in a myriad of efforts that span planning, partnerships, and innovation. With a vision of increased mobility for all, it is critical that the City focus on both existing and emerging transit technologies and services to support a comprehensive multimodal transportation system. **Figure 7** provides a highlight of current and proposed transit improvements for Centennial.

Key Transit Recommendations

1. Take a lead role in conducting a BRT corridor study for Arapahoe Road in collaboration with CDOT, RTD, Arapahoe County, Greenwood Village, Aurora, Littleton, and the Denver South Transportation Management Association (DSTMA). Because of its connectivity across the city, Arapahoe Road is the priority BRT corridor for Centennial. Components of the BRT corridor study include assessing the physical viability of BRT (dedicated lanes, shared travel lanes, business and transit lanes, etc.), developing specific service operating plans, determining supportive infrastructure improvements for stations/mobility hubs, identifying supporting technology (queue jumps, TSP, etc.). The plan will include capital and operating cost estimates and support planning efforts to preserve ROW for BRT along the corridor and position the corridor for grant funding opportunities.

2. Plan and implement a microtransit pilot on the west end of the city (centered at the Streets at SouthGlenn). Recommended implementation steps include:

   - Reach out to microtransit providers (e.g., Via, RideCo., Downtowner, TransLoc) to engage them in discussions about service delivery models (turnkey contracts, agency operated, etc.) and applicability to Centennial
   - Identify preferred service characteristics, including service area; hours and days of service; pickup and drop off locations; time expectations for trip pickups; vehicle types; accessibility of vehicles and trip booking; fare structure
   - Establish performance metrics and goals prior to service implementation to track and monitor key performance indicators
   - Conduct service modeling to inform capital and operating needs and service cost estimates
   - Identify potential funding sources, grants, and partnerships to support the implementation of the first Microtransit Opportunity Zone
   - Implement a pilot project for a minimum of 12 to 18 months to determine the viability of service and the need to increase or decrease service

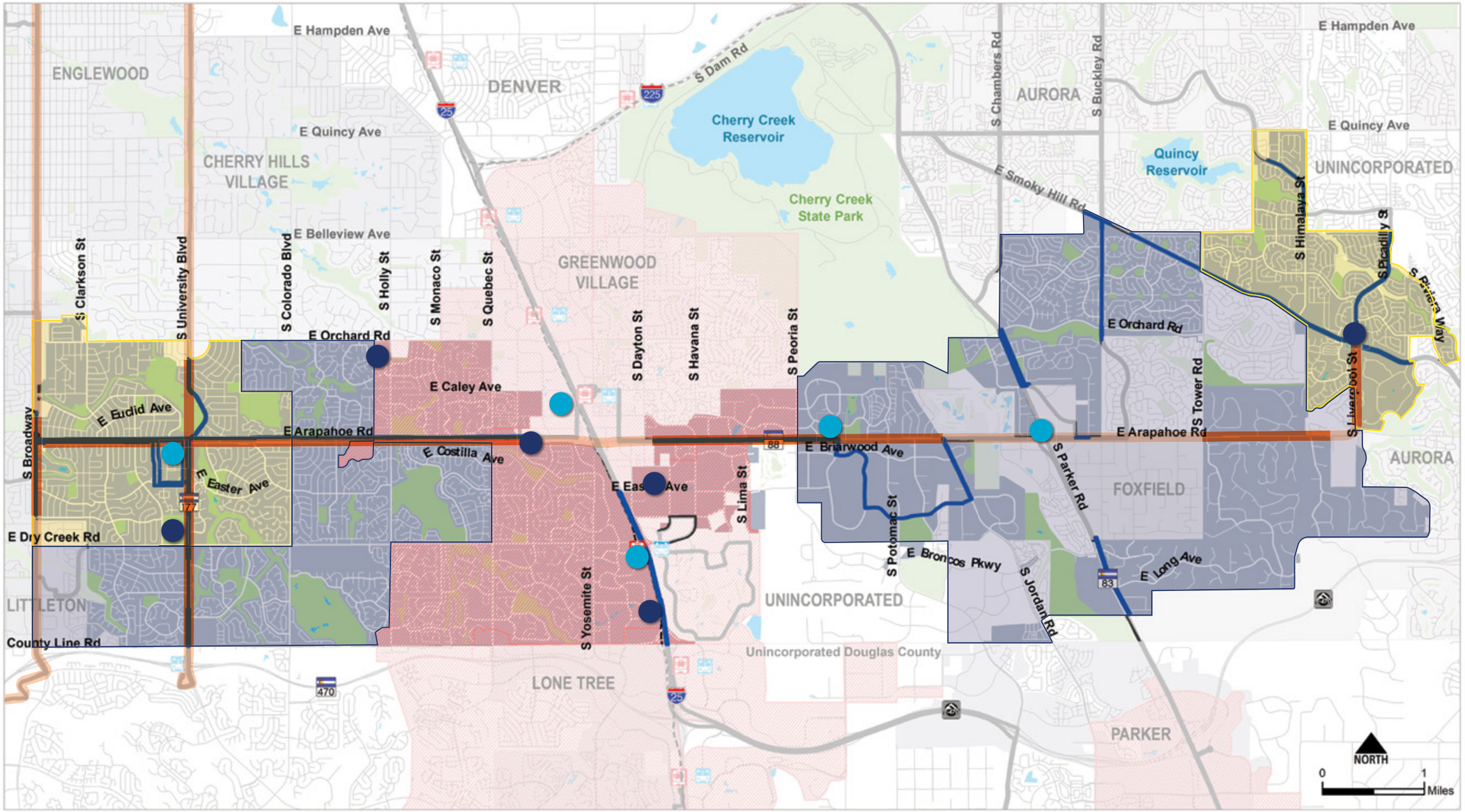
3. Partner with the DSTMA to conduct a comprehensive transit needs assessment for the Denver south area to inform priorities and key corridors for service prioritization; to position the City to be prepared for future funding opportunities, including potential local agency grants from RTD.

Microtransit is a form of demand responsive transit service that typically leverages smartphone technology using a smartphone application to match trip requests in real time to dynamic/flexible routes in a defined service area. Users can request a trip within a short timeframe (typically 15 minutes or less) and be picked up and dropped off within a short distance of their origin and destination points (typically one to two blocks or less).

Key success factors of microtransit:

- Service area of 2 to 5 square miles per zone
- Service area that includes a mix of activity centers such as shopping/retail, employment centers, transit hubs, medical services, social services
- Mix of housing paired with higher-density commercial areas
- Fare structure that balances convenience, affordability, and ridership goals
- Robust marketing and public education
- ADA accessible vehicles and call-in option for those without smartphones

FIGURE 7: TRANSIT PLAN



RTD, 2021

Legend

- Light Rail Station
- Park-n-Ride
- Light Rail

RTD Bus Routes

- RTD Bus Routes
- FlexRide Service Area

- Roads
- Lakes
- Parks
- Centennial City Boundary
- Planned Bus Rapid Transit Corridor
- Microtransit Opportunity Zones
- Future Microtransit Opportunity Zone
- Type 1: Mobility Hub
- Type 2: Micromobility Hub

Transit opportunities include city-centric and regionally focused efforts and collaborations:

- Leveraging opportunities to study, test, and implement pilot microtransit services (consider partnerships with private sector microtransit providers such as Via and RideCo)
- Focusing on safe and comfortable first- and final-mile access to transit
- Supporting the mobility needs of equity populations (e.g., older adults and people with disabilities)
- Developing education/outreach campaigns that highlight the public transportation options and supporting benefits
- Continuing to implement a citywide branding effort for bus shelters to showcase a unified city identity
- Advancing the implementation of mobility hubs to enhance travel options and support seamless transitions between modes

Chapter 7 includes a detailed summary of transit-specific planning, policy, and programmatic strategies for implementation by Centennial.

Transportation Demand Management

Centennial has long participated in TDM activities in the Denver South region in partnership with Arapahoe County, neighboring cities and towns, the DSTMA, RTD, DRCOG, and CDOT. Through these partnerships, the City has encouraged education, policy, and programmatic solutions that support management of travel demand. By providing mobility choice, the City can maximize existing infrastructure, support Colorado's greenhouse gas (GHG) emission reduction goals, and enhance community vitality making Centennial an attractive place to live, work, and recreate. Opportunities to advance TDM in Centennial include:

- Partnering with local and regional agencies to implement TDM educational campaigns and incentive programs
- Finding opportunities to collaborate with partners on pilot projects that support new mobility choices
- Collaborating with micromobility providers to add new services across the city (bikeshare, electric scooters, etc.)
- Focusing on first- and final-mile access to transit and future mobility hubs
- Implementing a citywide educational campaign about mobility choices and the associated benefits of maximizing existing infrastructure

Transportation Demand Management (TDM) uses strategies to inform and encourage travelers about alternative travel options. Successful implementation of TDM reduces the number of vehicles on the road, which can maximize the efficiency of existing infrastructure, minimize congestion, lower vehicle emissions, support economic vitality, and improve overall quality of life.

TDM efforts include informational campaigns, incentive programs, and policy considerations. Alternative modes of transportation and strategies that support TDM include biking, walking, transit, ridesharing, remote working, flexible work schedules, micromobility, and other new and emerging mobility solutions.

Advanced Mobility

Advanced mobility considers the holistic integration of the human, digital and physical systems to build out the transportation network. The delivery of mobility is rapidly evolving and advancing, exemplified by the rise of automated and connected vehicle technologies, the collection and use of big data, the electrification of vehicles and integration of mobility on-demand services. To prepare for tomorrow, Centennial must monitor, track, and advance emerging trends while simultaneously preparing the policy and partnership frameworks needed to deliver future forward mobility strategies.

To harness Centennial's innovative spirit, the City should continue to look at opportunities to advance emerging mobility trends that are reshaping mobility at all levels – locally, regionally, and nationally. Advanced mobility programs and projects are rapidly evolving, and the City should work to advance strategies that align with the TMP vision and goals, such as:

- Testing emerging transportation technologies such as automated and connected vehicles with a supportive public education campaign
- Implementing cooperative Intelligent Transportation Systems (ITS) to enhance safety and minimize congestion along key corridors
- Leveraging private-sector investment in on-demand mobility options to support mobility choice
- Supporting the transition to zero emission vehicles and fleets
- Partnering with local and regional partners to build mobility hubs and EV charging locations across the city
- Considering urban air mobility or unmanned aerial vehicle cargo/drone delivery in collaboration with the airport

Chapter 7 includes a summary of the unique advanced mobility planning, policy, and programmatic strategies to guide the City forward.

ELEMENTS OF THE TRANSPORTATION SYSTEM

PHYSICAL SYSTEMS
The built infrastructure that keeps people moving

HUMAN SYSTEMS
The mobility services that get people where they need to go

DIGITAL SYSTEMS
The data integration and tools that improve operations and people's access to mobility

Electric Vehicle (EV) Charging

In December 2020, the City of Centennial completed an Electric Vehicle Action Plan (Centennial EV Action Plan) in partnership with Xcel Energy. The Centennial EV Action Plan set a goal of increasing the number of EVs registered in Centennial zip codes from 2,000 (in 2020) to 18,000 by 2030, which aligns with the Colorado 2020 EV Plan goal of reaching 940,000 light-duty EVs in Colorado by 2030.

The Centennial EV Action Plan further demonstrates the City's commitment to providing sustainable transportation options by setting complementary goals of electrifying 20 percent of the municipal light-duty fleet and achieving a ratio of 8 public charging stations per 1,000 households by 2030. Existing conditions estimate 40,400 households in Centennial with 17 public charging stations (with 46 total plugs). The equivalent ratio of 8 public charging stations per 1,000 households equates to approximately 325 public charging stations. Anticipated household growth indicates 360 public charging stations would be needed by 2030, reflecting the need to add 20 to 40 public charging stations per year.

The commitment to reach these ambitious goals is reflected in the subsequent EV charging feasibility analysis completed by the City in 2021, which identified nine high-priority public charging station locations as shown on **Figure 8**. Continuing to analyze the EV environment in Centennial will be essential to reaching the goals of the Centennial EV Action Plan. Centennial should:

- Monitor the use of the nine high-priority public charging station locations to inform future revisions to the location evaluation criteria identified in the feasibility study
- Continue to partner with Xcel Energy to build out its EV public charging infrastructure
- Explore opportunities to develop a demand-driven public EV charging infrastructure program that allows citizens to request locations for evaluation (see callout box)

The recent statewide GHG rulemaking process highlights the intersection of clean transportation options (e.g., transportation electrification) and holistic multimodal transportation planning. Integrating priority EV charging station locations into mobility hub and corridor planning will ensure that the City can demonstrate a holistic planning approach and the ability to support GHG reducing transportation options. Demonstrating GHG emissions reductions will be essential to securing future state and federal funding and will result in competitive projects for many future competitive grant funding opportunities.

AMSTERDAM'S DEMAND DRIVEN CHARGING INFRASTRUCTURE

In 2009, Amsterdam introduced its first public charging stations with the goal of providing charging infrastructure that increased confidence in electric driving and demand. The city viewed electric transport as a key asset to support the city's overall energy transition and sought to capitalize on the opportunity to achieve other sustainability targets, including storage and use of sustainable energy. Many residents in Amsterdam do not have access to private garages and rely heavily on public charging infrastructure. Amsterdam's EV charging program allows drivers to complete an online request to expand the public charging network. The city's selected infrastructure provider evaluates the requested location based on walking distance to the nearest or planned location, the available network capacity, the occupancy rates of nearby charging locations, etc. The maximum 2-month permitting, design, and installation process has been refined to form a highly efficient screening process that allows multiple charging locations to be installed at once. As of December 2020, Amsterdam has 12,700 public chargers and expects to have 80,000 to 100,000 public chargers by 2030.

https://theicct.org/sites/default/files/publications/EV-charging-metrics-aug2020.pdf

Mobility Hubs

Creating seamless opportunities for integrated mobility in Centennial supports the City's desired goals of providing flexible mobility, serving as an innovator, and enhancing economic and community vitality. Mobility hubs rethink the integration of all modes and increase the availability of, and access to, a variety of mobility options.

The Centennial TMP envisions a network of mobility hubs and EV charging stations as shown on **Figure 8.** More detail about these mobility hubs and charging stations can be found in Chapter 6. The recommending charging levels (1, 2, 3) are based on dwell times at the site. The mobility hub recommendations stem from analysis and community input gathered during the development of the TMP and are compatible with the mobility hub recommendations in Arapahoe County's 2021 TMP. Most of the identified EV charging stations were identified in the Feasibility Study of Electric Vehicle (EV) Charging Station Locations for the City completed in 2021, with additional stations recommended at major mobility hubs.

Mobility hubs are community focal points that seamlessly integrate various transportation modes, provide supportive multimodal infrastructure, and serve as a placemaking strategy to activate activity centers. Mobility hubs can vary in size, programming, and design to respond to the context and function of each location. Factors that influence the investment level in a mobility hub include existing transit service, land use characteristics, and population and employment densities.

Two types of mobility hubs are recommended in Centennial:

TYPE 1: MOBILITY HUB **TYPE 2: MICROMOBILITY HUB**

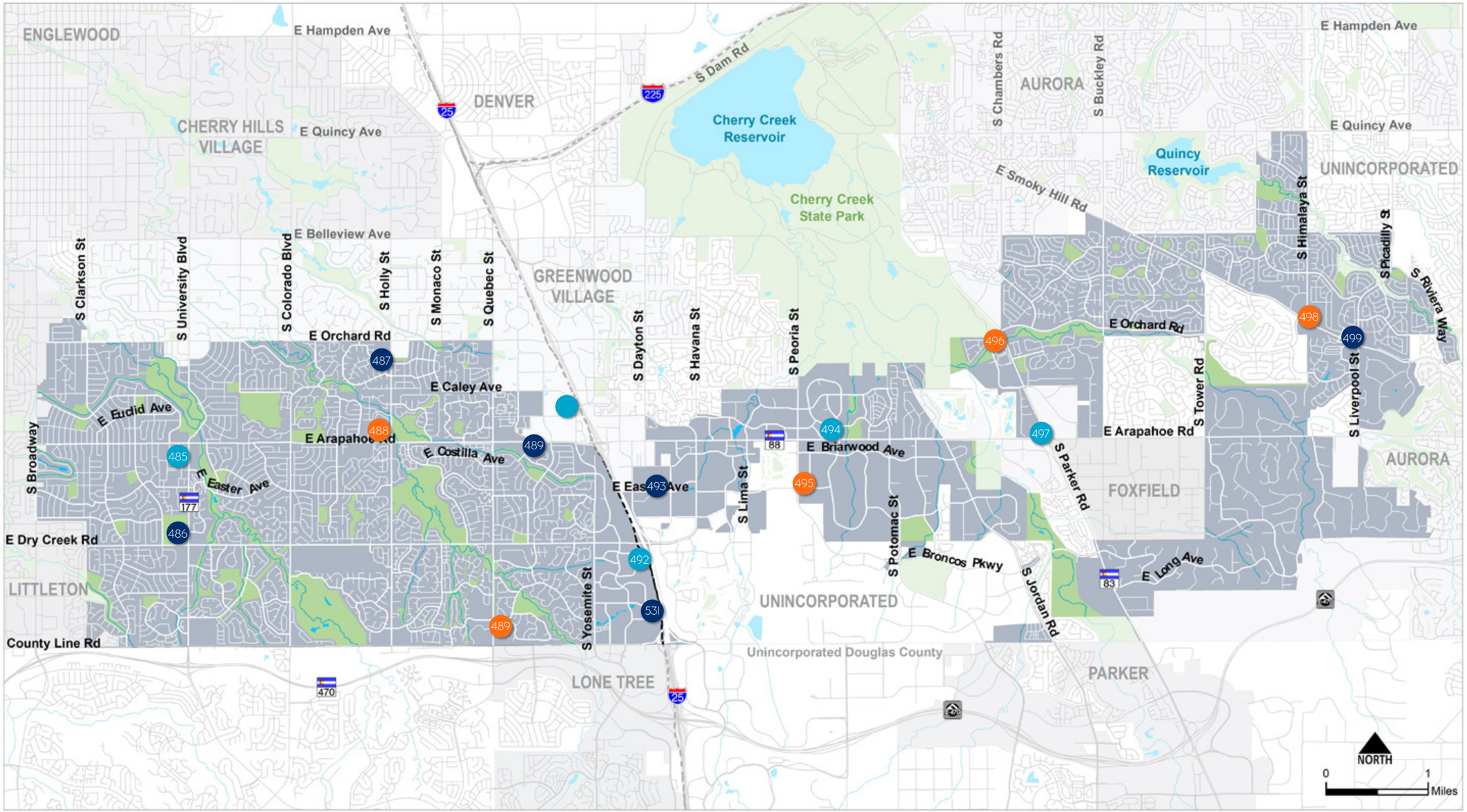
Table 2 summarizes the typical elements of each type based on whether they are "Vital," "Recommended," or "Optional." Mobility hubs should consider charging for personal vehicles, paratransit/neighborhood circulators, and ride-hailing fleets.

TABLE 2: MOBILITY HUB ELEMENTS

	Multimodal Options					Vehicle Connections			Transit Connections & Amenities				Information & Services	
Mobility Hub Element	Bike Share	Bike Parking	Supportive Bicycle Access and Infrastructure	Supportive Pedestrian Access & Infrastructure	Micromobility Options (e.g., electric scooters)	Rideshare/Passenger Loading Zone	Carshare	EV Charging	Bus/Rail Transit Service	Shelters	Benches	Safety & Security	Wayfinding Signage	Wi-Fi /Smartphone Connectivity
Type 1: Mobility Hub	Vital	Vital	Vital	Vital	Vital	Vital	Vital	Vital	Vital	Vital	Vital	Recommended	Vital	Recommended
Type 2: Micromobility Hub	Recommended	Vital	Vital	Vital	Recommended	Recommended	Recommended	Recommended	Recommended	Optional	Recommended	Optional	Vital	Optional

Vital · Recommended · Optional

FIGURE 8: MOBILITY HUB PLAN



Legend

XXX Project ID

Type I: Mobility Hub

Type 2: Micromobility Hub

Additional EV Charging Stations

Centennial City Boundary

Photo Credit: Denver Post

CHAPTER 6.
CORRIDOR PROFILES

The TMP identifies 18 key corridors as important mobility corridors that have large travel demand, have at least several miles of continuity, and provide important connections between Centennial and neighboring communities. The 12 north-south corridors are shown on Figure 9 and the six east-west corridors are shown on Figure 10. The current and future conditions, along with location-specific input from the community, were used to identify the needs in each corridor associated with each of the seven transportation goals (refer to Chapter 4). The corridor needs were then analyzed to identify complementary opportunities. The example below for the Broadway corridor shows how the needs were aligned to identify opportunities that could address multiple corridor needs.

BROADWAY CORRIDOR NEEDS

SAFETY	Low crash density; **wide crossings for pedestrians** (including three at-grade crossings of the High Line Canal Trail), long distances between crossings, and high use transit stops
FLEXIBLE MOBILITY	**High bus boardings/alightings** north of Arapahoe Road where more **underserved and overburdened communities** reside; walk access to bus stops is limited north of Panama Drive; bicyclists and pedestrians experience **high levels of traffic stress**
EFFICIENCY & RELIABILITY	Peak period traffic mobility is moderate; local and regional growth is expected to cause **high congestion levels in the future**
INNOVATION	Increasing congestion levels could contribute to **air and noise pollution**
FISCAL RESPONSIBILITY	Space on this **wide corridor** is not optimized to move people
REGIONALISM & PARTNERSHIPS	Shared responsibility with Littleton; **DRCOG's Vision Zero High Injury Network** corridor; **RTD BRT Network Route**
ECONOMIC & COMMUNITY VITALITY	Residential and small businesses front the corridor, which **lacks streetscaping** elements; household development and increased employment anticipated between Dry Creek Road and Arapahoe Road
COMMUNITY INPUT	Community members explained that the High Line Canal crossing south of Arapahoe Road is dangerous for pedestrians and bicyclists. Additionally, the Arapahoe Road signalized crossing requires out of distance travel. The corridor's narrow sidewalks and high volume of fast-moving vehicles create a difficult environment for other modes. There was also interest in transforming Broadway into a BRT corridor.

BROADWAY CORRIDOR OPPORTUNITIES

Broadway, a 4-lane major arterial, is a wide, heavily traveled regional corridor that could be improved through regional partnerships to:

- **A** **Address increasing travel demand and improve person-carrying capacity through enhanced bus service**
- **B** **Improve mobility options for underserved and overburdened communities through first- and last-mile access to transit**
- **C** **Enhance safety and comfort for bicyclists and pedestrians by improving street crossings**
- **D** **Support local businesses and community identity with streetscape improvements, and community gateway treatments**

The corridor needs by goal area are documented in **Appendix C**. The corridor opportunities are provided on the corridor profiles in this chapter. The 18 corridor profiles also provide a list and map of corridor recommendations (which are linked to the opportunities) and identify Centennial's partners in implementing the project recommendations. Details pertaining to the project priorities can be found in the Chapter 7 – Implementation Plan.

FIGURE 9: NORTH - SOUTH CORRIDORS

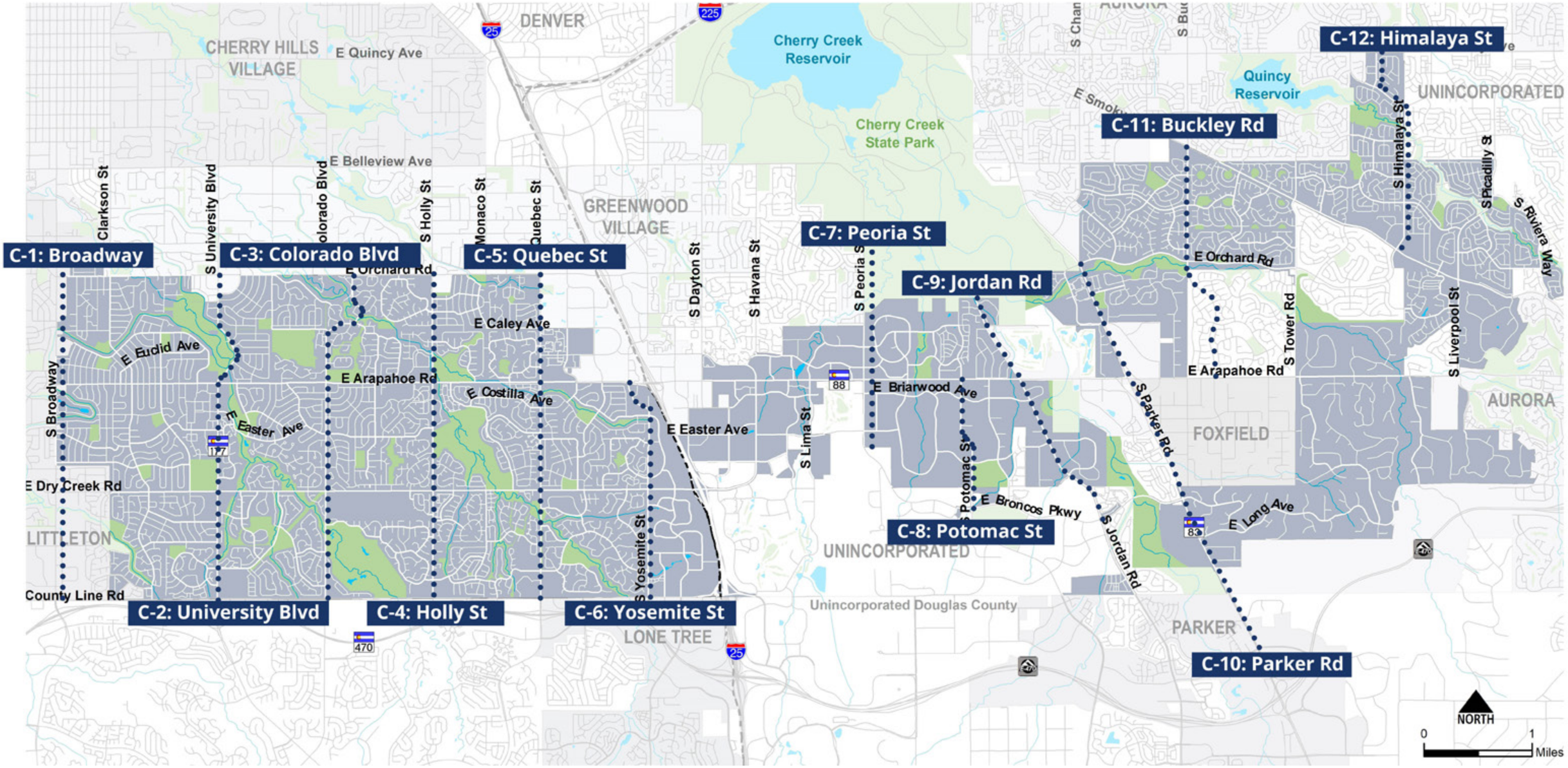
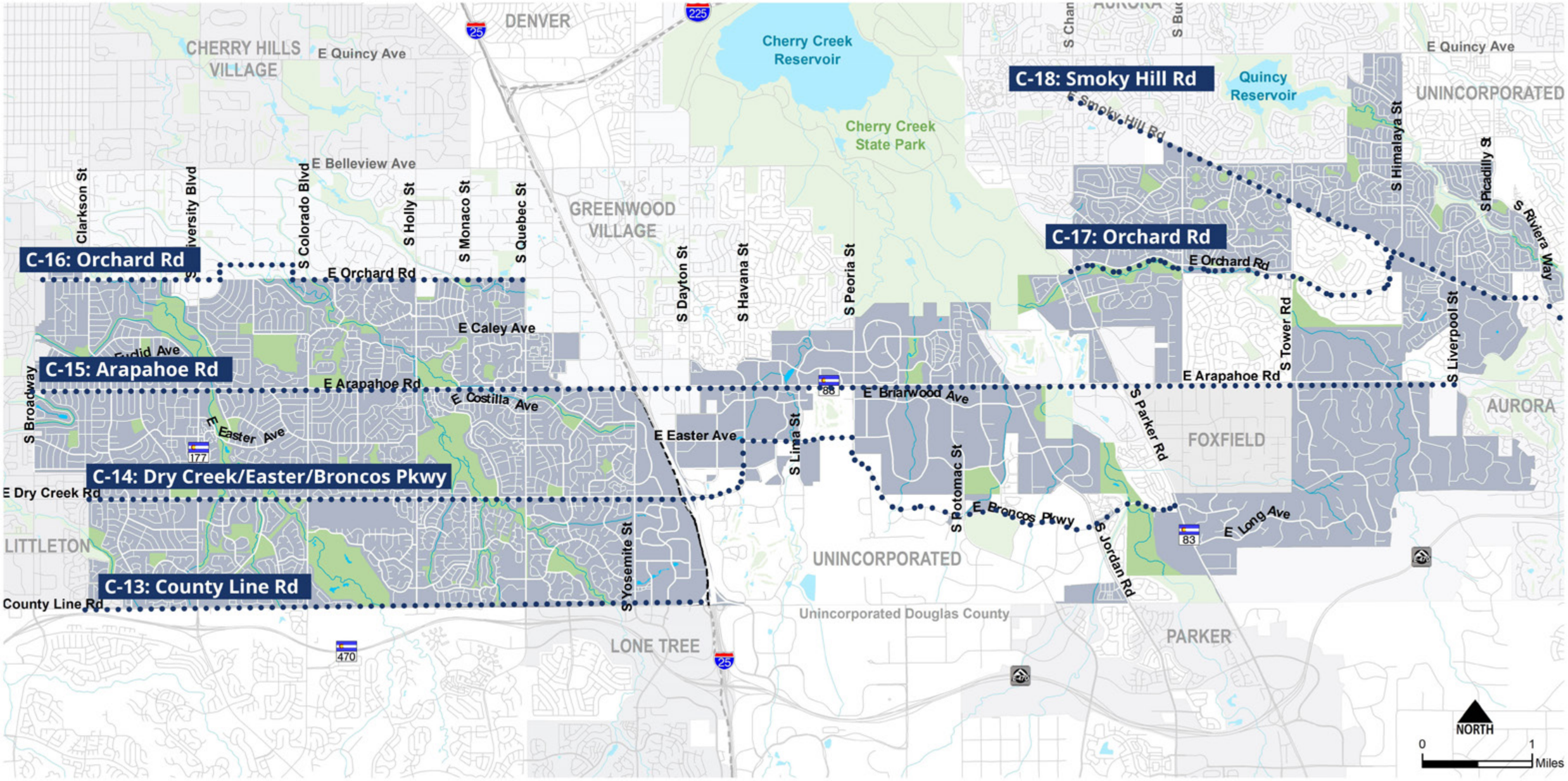


FIGURE 10: EAST - WEST CORRIDORS



C-1 BROADWAY

COUNTY LINE ROAD TO ORCHARD ROAD

Centennial TRANSPORTATION MASTER PLAN

CORRIDOR OPPORTUNITIES

Broadway, 4-lane major arterial, is a wide, heavily traveled regional corridor that could be improved through regional partnerships to:

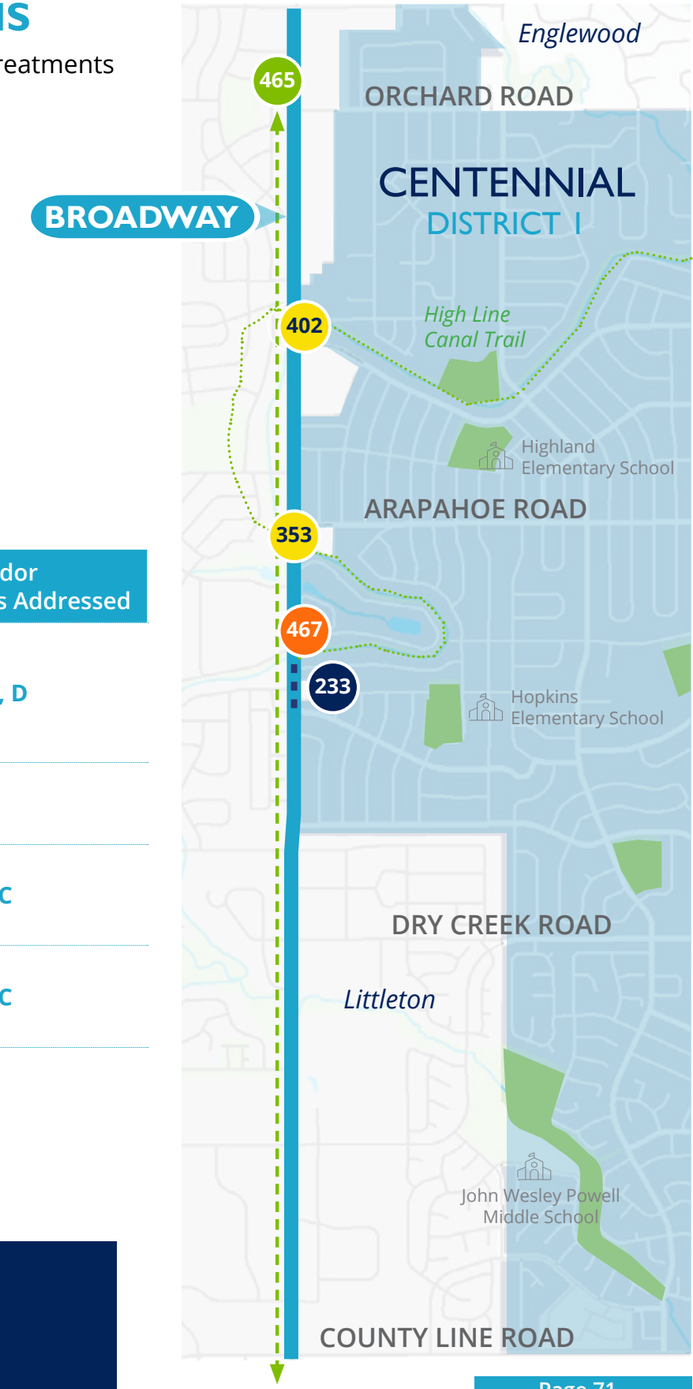
- **A** Address increasing travel demand and improve person-carrying capacity through enhanced bus service
- **B** Improve mobility options for underserved and overburdened communities through first- and last-mile access to transit
- **C** Enhance safety and comfort for bicyclists and pedestrians by improving street crossings
- **D** Support local businesses and community identity with streetscape improvements and community gateway treatments

CORRIDOR RECOMMENDATIONS

ID	Location	Description	Type	Partners	Corridor Opportunities Addressed
465	Highlands Ranch Parkway to I-25	Broadway Corridor Study to assess feasibility of mobility improvements (such as enhanced transit) and support local business and community identity	Study	Littleton, Englewood, Denver Arapahoe County, Douglas County	A, B, D
233	W Ridge Road to W Davies Avenue	Sidepath	Bicycle & Pedestrian	Littleton	B
353	at High Line Canal Trail (south of Arapahoe Road & north of Highline Circle)	Pedestrian underpass	Trail	Arapahoe County, Littleton, HLC Conservancy	B, C
402	at High Line Canal Trail (at Caley Avenue)	Pedestrian underpass	Trail	Arapahoe County, Littleton, HLC Conservancy	B, C
467	at Ridge Road (High Line Canal Trail)	Improve at-grade crossing, address eastbound to southbound right turn conflict with crossing pedestrians	Bicycle & Pedestrian	Littleton	C

OTHER CONSIDERATIONS

- Incorporate Centennial-branded entry treatments and wayfinding



LEGEND

- IN PROGRESS PROJECT
- CENTENNIAL PROJECT
- CENTENNIAL LED PROJECT WITH PARTNER(S)
- PARTNER LED PROJECT WITH CENTENNIAL PARTICIPATION
- OTHER STAKEHOLDER PROJECT; CENTENNIAL SUPPORTS
- ROADWAY
- SIDEWALK
- BICYCLE & PEDESTRIAN
- STUDY
- TRAFFIC PROGRAM
- BRIDGE
- MOBILITY HUB/ EV CHARGING
- TRAIL
- PARK/OPEN SPACE
- TRAIL

C-2 UNIVERSITY BOULEVARD

COUNTY LINE ROAD TO ORCHARD ROAD

Centennial TRANSPORTATION MASTER PLAN

CORRIDOR OPPORTUNITIES

University Boulevard is a heavily traveled 4-lane State Highway corridor that could be improved in partnership with CDOT to:

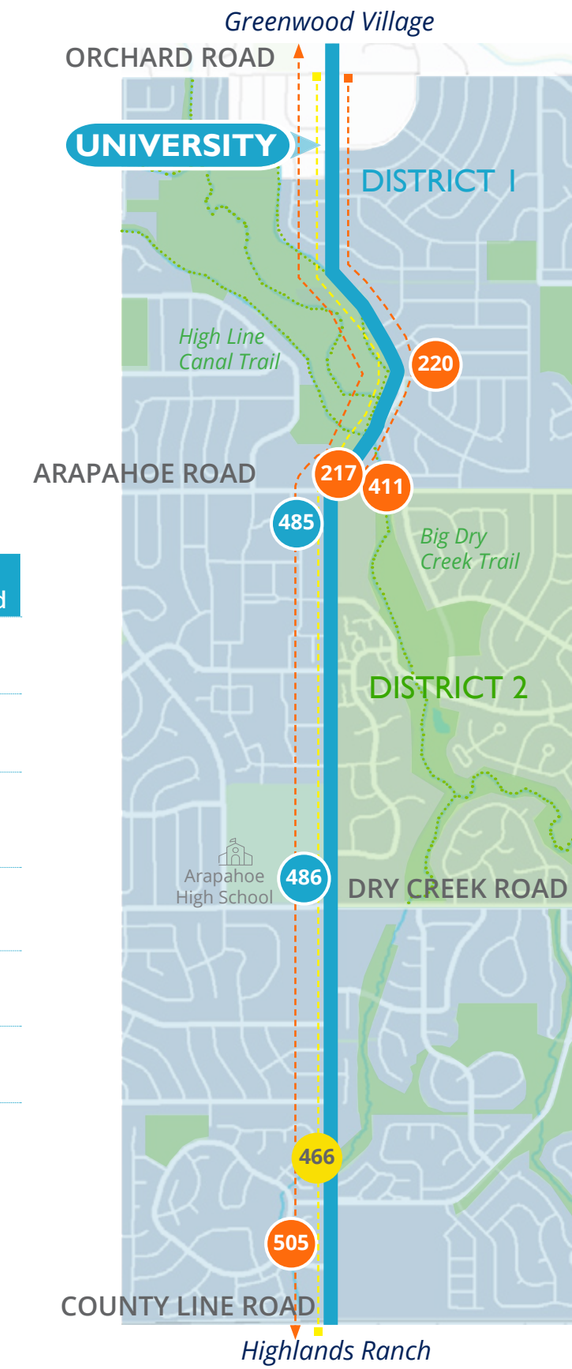
- **A** Improve safety at key intersections
- **B** Address increasing travel demand and improve mobility options for underserved and overburdened communities through enhanced bus service
- **C** Improve travel time reliability through signal system upgrades
- **D** Convert short trips to biking or walking and enhance safety and comfort by improving facilities on parallel routes, improving bicycle/pedestrian crossings, and enhancing wayfinding
- **E** Encourage commercial redevelopment and mixed-use density with streetscape improvements, EV charging stations, and micromobility options

OTHER CONSIDERATIONS

- Recommended bike lanes on Franklin Street would address **Opportunity D**

CORRIDOR RECOMMENDATIONS

ID	Location	Description	Type	Partners	Corridor Opportunities Addressed
485	at Arapahoe Road	Mobility hub at Streets at SouthGlenn with DCRC (L3) / Level 2 charging		Developer, Colorado Energy Office, Xcel Energy	D, E
486	at Dry Creek	Micromobility hub at Arapahoe High School with DCFC (L3) / Level 2 charging		Littleton Public Schools, Colorado Energy Office, Xcel Energy	D, E
466	C-470 to Orchard Road	Corridor Study (with CDOT and other partners) to assess the feasibility of mobility improvements (such as enhanced transit and streetscape improvements)		CDOT, RTD, Greenwood Village	B, E
217	at Arapahoe Road	Install feedback curve speed warning system for curves north of Arapahoe Road		CDOT	A
220	Arapahoe Road to Orchard Road	Raised center median		CDOT	A
411	Big Dry Creek (north of Arapahoe Road)	Replace or widen structure		CDOT	B
505	County Line Road to Orchard Road	Evaluate timing modifications, including adaptive signals		CDOT	C



LEGEND

- IN PROGRESS PROJECT
- CENTENNIAL PROJECT
- CENTENNIAL LED PROJECT WITH PARTNER(S)
- PARTNER LED PROJECT WITH CENTENNIAL PARTICIPATION
- OTHER STAKEHOLDER PROJECT; CENTENNIAL SUPPORTS
- ROADWAY
- SIDEWALK
- BICYCLE & PEDESTRIAN
- STUDY
- TRAFFIC PROGRAM
- BRIDGE
- MOBILITY HUB/ EV CHARGING
- TRAIL
- PARK/OPEN SPACE
- TRAIL

C-3 COLORADO BOULEVARD

COUNTY LINE ROAD TO ORCHARD ROAD

Centennial TRANSPORTATION MASTER PLAN

CORRIDOR OPPORTUNITIES

Colorado Boulevard is a moderately traveled minor arterial that varies from 2 lanes to 4 lanes. Refer to Colorado Boulevard Multimodal Corridor Study.

CORRIDOR RECOMMENDATIONS

ID	Location	Description	Type	Partners
408	Links Parkway/ Maplewood Way, Lake Circle S Big Dry Creek Trail	At-grade crossing improvement		
94	at Euclid Street	Modifications for improved safety and operations		
339	East side from E Dry Creek Road to just south of Mineral Avenue	Add sidewalk on the east side		
404	at Dry Creek Road	Widen west side of north leg to better align with southbound lanes		
405	Mineral Avenue to Links Parkway	Widen roadway to accommodate vehicle, bicycle, and pedestrian infrastructure on the east side		
406	Links Parkway to Dry Creek Road	Widen roadway to accommodate vehicle, bicycle, and pedestrian infrastructure on the east side		
407	County Line Road to Mineral Avenue and Arapahoe Road to Orchard Road	Restriping and buffered bike lane installation		
409	Little Dry Creek Trail/Maplewood Way	Realign trail to provide crossing aligned with the north leg of intersection		
410	Albion Way to Orchard Road	Install 5-foot sidewalk on the west side		
501	at Big Dry Creek (south of Dry Creek Road)	Bridge repair (Functionally Obsolete)		SEMSWA
502	at Little Dry Creek (south of Orchard Road)	Bridge repair (Structurally Deficient)		SEMSWA
532	Dry Creek Road to Arapahoe Road	Early action street reconfiguration to three-lane section with bicycle and pedestrian accommodation behind the curb		

LEGEND

- IN PROGRESS PROJECT
- CENTENNIAL PROJECT
- CENTENNIAL LED PROJECT WITH PARTNER(S)
- PARTNER LED PROJECT WITH CENTENNIAL PARTICIPATION
- OTHER STAKEHOLDER PROJECT; CENTENNIAL SUPPORTS
- ROADWAY
- SIDEWALK
- BICYCLE & PEDESTRIAN
- STUDY
- TRAFFIC PROGRAM
- BRIDGE
- MOBILITY HUB/ EV CHARGING
- TRAIL
- PARK/OPEN SPACE
- TRAIL

C-4 HOLLY STREET

COUNTY LINE ROAD TO ORCHARD ROAD

Centennial TRANSPORTATION MASTER PLAN

CORRIDOR OPPORTUNITIES

Holly Street, a 4-lane minor arterial, is moderately traveled and could be improved to:

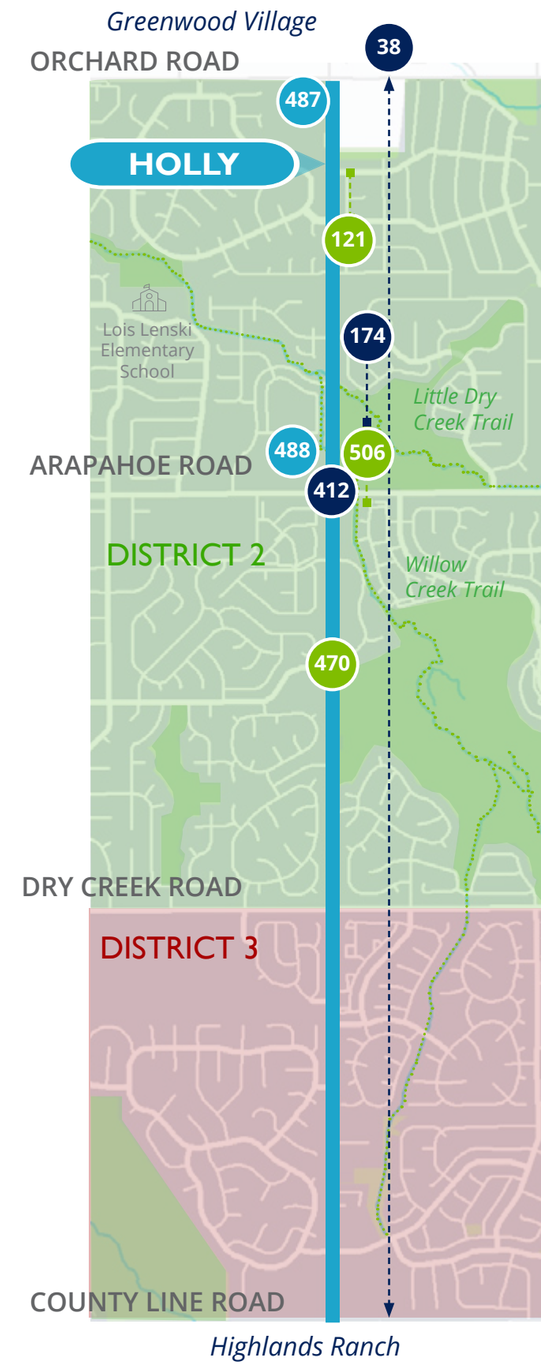
- **A** Convert short trips to biking or walking and enhance safety and comfort by improving bicycle and walking infrastructure (potentially using excess travel lane capacity) and amenities (e.g., bike repair stations, restrooms, bike detection crossing signals) along and across the corridor
- **B** Encourage cohesive streetscaping elements to create a unified community identity along the corridor
- **C** Improve bicycle and pedestrian connectivity along east-west routes, particularly between Arapahoe Road and Dry Creek Road

OTHER CONSIDERATIONS

- Consider adding street lighting to improve safety along corridor
- Potential for streetscape improvements to enhance corridor aesthetics to address **Opportunity B**

CORRIDOR RECOMMENDATIONS

ID	Location	Description	Type	Partners	Corridor Opportunities Addressed
121	Fair to Maplewood	Widen existing sidewalk from 3' width to 5' width			A
470	at Easter Avenue	At-grade crossing improvement, pedestrian hybrid beacon and curb ramp improvements			C
506	Arapahoe Road to existing HAWK (north of Arapahoe Road)	Add 6' sidewalk to east side			A
38	County Line Road to Orchard Road	Complete corridor study to consider multimodal improvements; tie into C-470 trail to south & Orchard Rd			A, B
174	Weaver Avenue to existing Pedestrian Hybrid Beacon (north of Arapahoe Road)	Add 6' sidewalk to the east side			A
412	at Arapahoe Road	New southbound to westbound right turn lane			
487	at Orchard Road	Micromobility hub at Koelbel Library with DCFC (L3) charging		Arapahoe Library District, Colorado Energy Office, Xcel Energy	A
488	at Arapahoe Road	EV charging station with DCFC (L3) / Level 2 charging		Property Owner, Colorado Energy Office, Xcel Energy	A



LEGEND

- IN PROGRESS PROJECT
- CENTENNIAL PROJECT
- CENTENNIAL LED PROJECT WITH PARTNER(S)
- PARTNER LED PROJECT WITH CENTENNIAL PARTICIPATION
- OTHER STAKEHOLDER PROJECT; CENTENNIAL SUPPORTS
- ROADWAY
- SIDEWALK
- BICYCLE & PEDESTRIAN
- STUDY
- TRAFFIC PROGRAM
- BRIDGE
- MOBILITY HUB/ EV CHARGING
- TRAIL
- PARK/OPEN SPACE
- TRAIL

C-5 QUEBEC STREET

COUNTY LINE ROAD TO ORCHARD ROAD

Centennial TRANSPORTATION MASTER PLAN

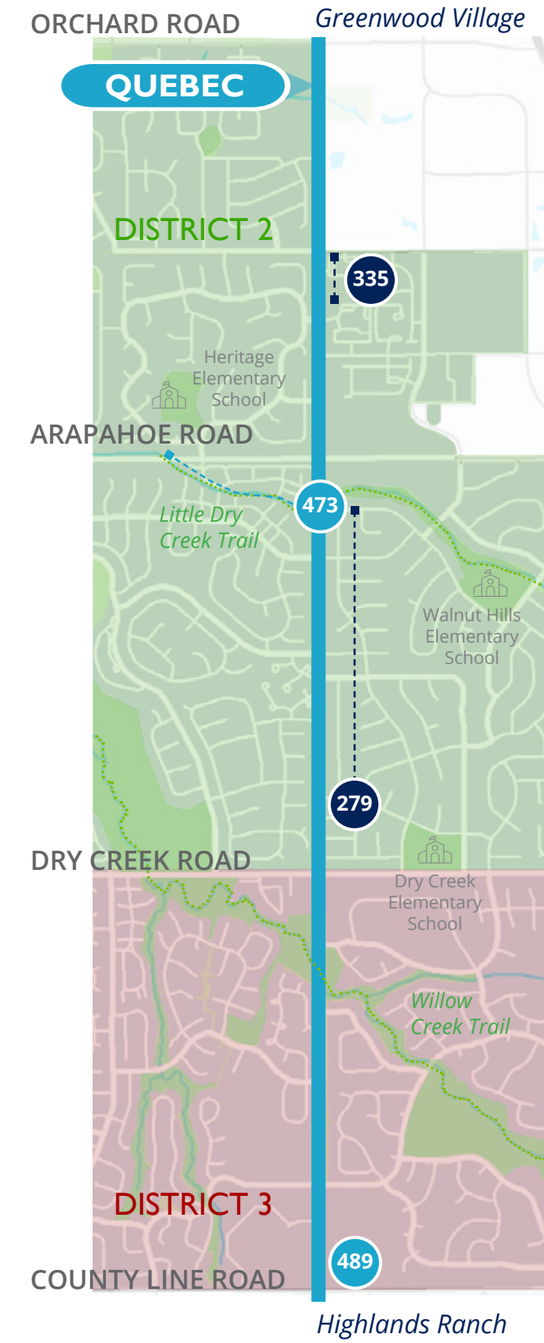
CORRIDOR OPPORTUNITIES

Quebec Street, a 4-lane major arterial, connects Centennial residents to major interstates, including I-25 and C-470, and could be improved to:

- **A** Improve safety at key intersections
- **B** Convert short trips (particularly in the area near Arapahoe Road) to biking or walking by improving facilities on parallel routes, improving bicycle/pedestrian crossings, and enhancing wayfinding
- **C** Encourage commercial redevelopment with streetscape improvements
- **D** Encourage living close to work (particularly in the business area northeast of Arapahoe Road) by providing micromobility, microtransit, EV charging stations, and enhanced bicycling and walking facilities

OTHER CONSIDERATIONS

- Consider adding street lighting to improve safety along the corridor and address **Opportunity A**
- Potential for streetscape improvements to enhance corridor aesthetics to address **Opportunity C**
- The Arapahoe Station Mobility Hub (Project 491 included in the Arapahoe Road Corridor) also addresses **Opportunity D**



CORRIDOR RECOMMENDATIONS

ID	Location	Description	Type	Partners	Corridor Opportunities Addressed
279	Little Dry Creek Trail just south of E Arapahoe Road to E Hinsdale Avenue	Sidepath			B
335	East side of Quebec south of E Caley Avenue	Add sidewalk on the east side			B
473	at Little Dry Creek Trail	Pedestrian underpass and trail connection to the west		SEMSWA	B
489	at County Line Road	EV charging station at Willow Creek Shopping Center with DCFC (L3) / Level 2 charging		Property Owner, Colorado Energy Office, Xcel Energy	D

LEGEND

- IN PROGRESS PROJECT
- CENTENNIAL PROJECT
- CENTENNIAL LED PROJECT WITH PARTNER(S)
- PARTNER LED PROJECT WITH CENTENNIAL PARTICIPATION
- OTHER STAKEHOLDER PROJECT; CENTENNIAL SUPPORTS
- ROADWAY
- SIDEWALK
- BICYCLE & PEDESTRIAN
- STUDY
- TRAFFIC PROGRAM
- BRIDGE
- MOBILITY HUB/ EV CHARGING
- TRAIL
- PARK/OPEN SPACE
- TRAIL

C-6 YOSEMITE STREET

COUNTY LINE ROAD TO ARAPAHOE ROAD

Centennial TRANSPORTATION MASTER PLAN

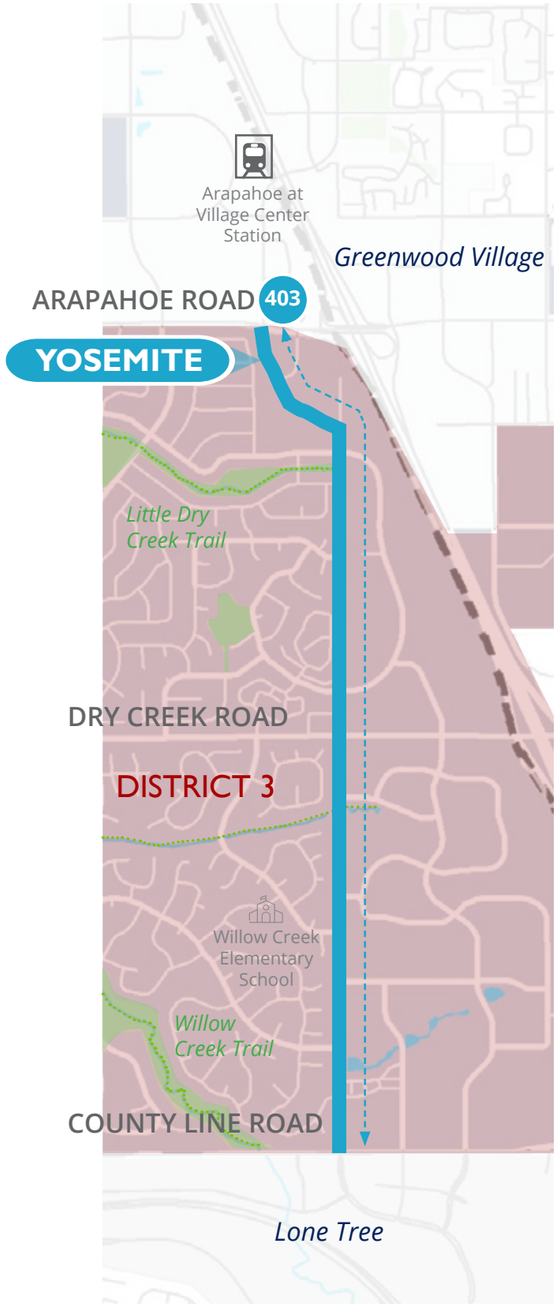
CORRIDOR OPPORTUNITIES

Yosemite Street, a 4-lane major arterial, is moderately traveled and could be improved through regional partnerships to:

- **A** Convert short trips to biking or walking and enhance safety and comfort by enhancing bicycling and walking infrastructure along and across the corridor
- **B** Encourage living close to work (particularly in the business areas east of Yosemite Street) by providing micromobility, microtransit, EV charging stations, and bicycling and walking facilities
- **C** Support local businesses and community identity with streetscape improvements and community gateway treatments

OTHER CONSIDERATIONS

- Recommended bike lanes on Chester Street/Alton Way would also address **Opportunities A and B**



CORRIDOR RECOMMENDATIONS

ID	Location	Description	Type	Partners	Corridor Opportunities Addressed
403	County Line Road to Arapahoe Road	Conduct a corridor study to assess the feasibility of multimodal mobility improvements (such as a multiuse path or two-way separated bike lanes) and support local businesses and community		DSTMA, Greenwood Village, Lone Tree	A, B, C

LEGEND

- IN PROGRESS PROJECT
- CENTENNIAL PROJECT
- CENTENNIAL LED PROJECT WITH PARTNER(S)
- PARTNER LED PROJECT WITH CENTENNIAL PARTICIPATION
- OTHER STAKEHOLDER PROJECT; CENTENNIAL SUPPORTS
- ROADWAY
- SIDEWALK
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- STUDY
- TRAFFIC PROGRAM
- BRIDGE
- MOBILITY HUB/ EV CHARGING
- TRAIL
- PARK/OPEN SPACE
- TRAIL

C-7 PEORIA STREET

BRONCOS PARKWAY TO FAIR AVENUE

CORRIDOR OPPORTUNITIES

Peoria Street, a moderately traveled 4-lane minor arterial, mostly provides access to businesses lining the corridor and could be improved in coordination with Arapahoe County to:

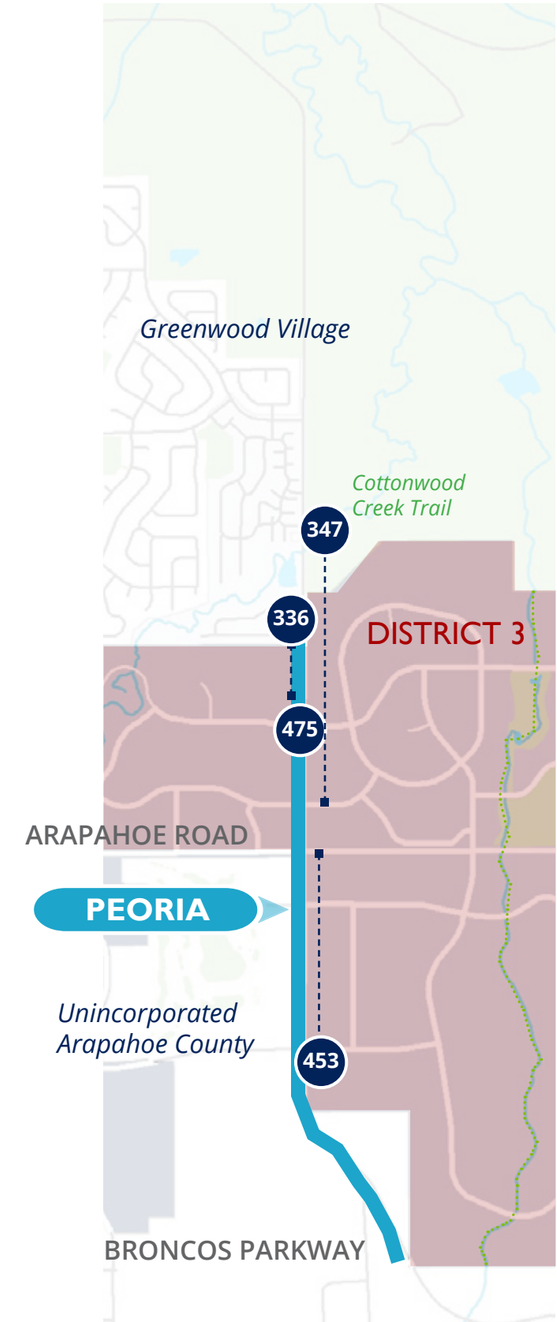
- **A** Improve safety at key intersections (particularly at Arapahoe Road)
- **B** Address sidewalk gaps along the corridor

OTHER CONSIDERATIONS

- Refer to Arapahoe Road corridor (C-15) for additional projects to address **Opportunity A**

CORRIDOR RECOMMENDATIONS

ID	Location	Description	Type	Partners	Corridor Opportunities Addressed
336	West side of Peoria just south of E Fair Avenue	Add sidewalk on the west side	Sidewalk		B
347	Peakview to Cottonwood Creek Trail	Add sidewalk on the east side	Sidewalk	Greenwood Village	B
453	Easter Avenue to Arapahoe Road	Add missing sidewalk on the west side	Sidewalk		B
475	at Caley Avenue	Intersection improvements such as a roundabout to improve safety	Roadway		A



LEGEND

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- PARTNER LED PROJECT WITH CENTENNIAL PARTICIPATION
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- STUDY
- TRAFFIC PROGRAM
- BRIDGE
- MOBILITY HUB/ EV CHARGING
- TRAIL
- PARK/OPEN SPACE
- TRAIL

C-8 POTOMAC STREET

BRONCOS PARKWAY TO ARAPAHOE ROAD

Centennial TRANSPORTATION MASTER PLAN

CORRIDOR OPPORTUNITIES

Potomac Street, a low-traveled 4-lane minor arterial, mostly provides connections to businesses lining the corridor and could be improved to:

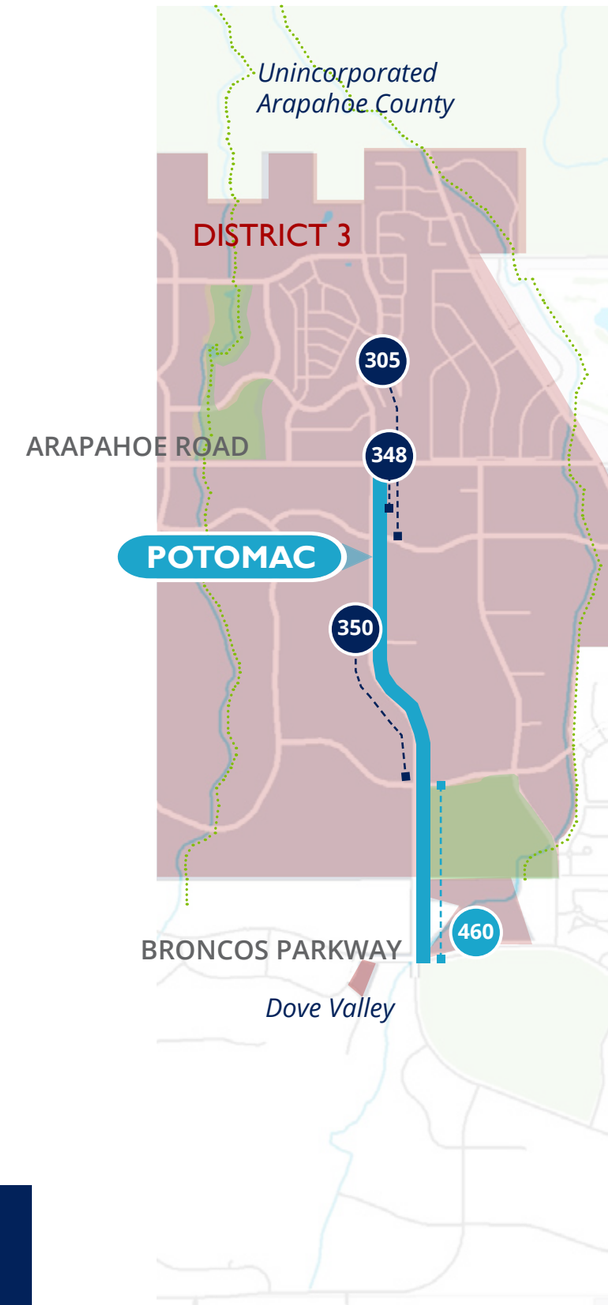
- **A** Improve safety at Arapahoe Road
- **B** Address sidewalk gaps along the corridor in coordination with developers

OTHER CONSIDERATIONS

- Refer to Arapahoe Road corridor (C-15) for additional projects to address **Opportunity A**

CORRIDOR RECOMMENDATIONS

ID	Location	Description	Type	Partners	Corridor Opportunities Addressed
305	E Peakview Avenue to E Briarwood Avenue	Sidepath			B
348	East side of Potomac Street just south of E Arapahoe Road	Add sidewalk on the east side			B
350	West side of S Potomac Street approximately 1,500 ft north of E Fremont Place	Add sidewalk on the west side			B
460	Broncos Parkway to Fremont Place	Add missing sidewalk on the east side		Arapahoe County	B



LEGEND

- IN PROGRESS PROJECT
- CENTENNIAL PROJECT
- CENTENNIAL LED PROJECT WITH PARTNER(S)
- PARTNER LED PROJECT WITH CENTENNIAL PARTICIPATION
- OTHER STAKEHOLDER PROJECT; CENTENNIAL SUPPORTS
- ROADWAY
- SIDEWALK
- BICYCLE & PEDESTRIAN
- STUDY
- TRAFFIC PROGRAM
- BRIDGE
- MOBILITY HUB/ EV CHARGING
- TRAIL
- PARK/OPEN SPACE
- TRAIL

C-9 JORDAN ROAD

BRONCOS PARKWAY TO MAPLEWOOD AVENUE

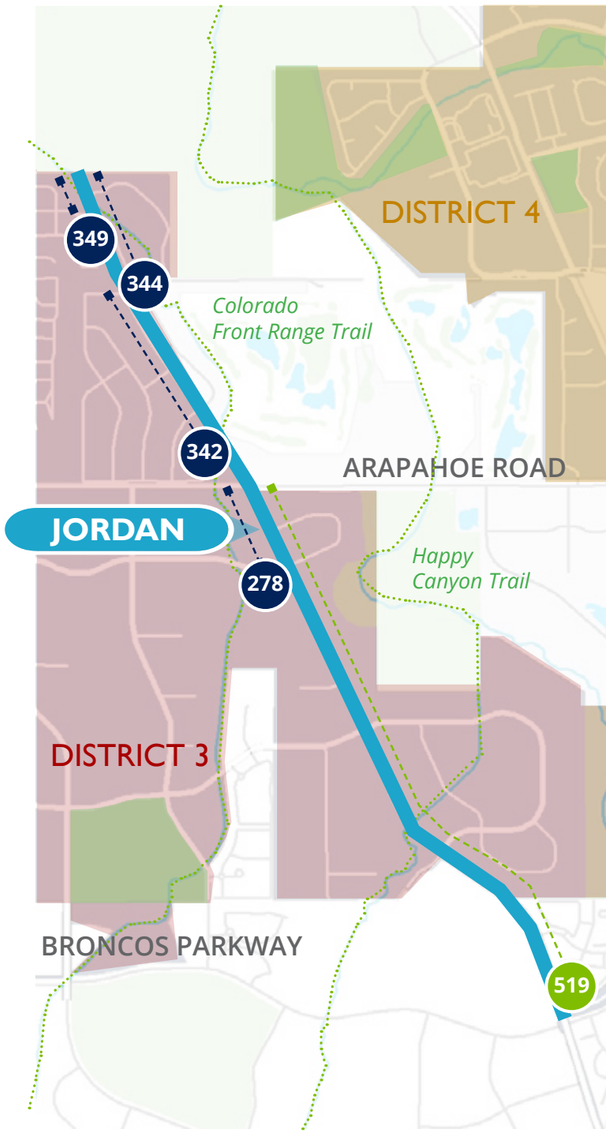
CORRIDOR OPPORTUNITIES

Jordan Road is a 4-lane minor arterial south of Arapahoe Road and a 2-lane major collector north of Arapahoe Road. It is a moderately traveled corridor that could be improved to:

- **A** Improve travel time reliability and queuing issues through signal system upgrades
- **B** Address sight distance issues along the corridor, particularly near the intersection of Broncos Parkway
- **C** Address sidewalk gaps along the corridor
- **D** Improve bicycle and pedestrian access to major recreational facilities, including Cherry Creek State Park and Cherry Creek Trail

OTHER CONSIDERATIONS

- Consider adding street lighting to improve safety along the corridor and to address **Opportunity B**



CORRIDOR RECOMMENDATIONS

ID	Location	Description	Type	Partners	Corridor Opportunities Addressed
519	Broncos Parkway to Arapahoe Road	Adaptive Signal Timing			A
278	E Arapahoe Road to E Briarwood Avenue	Bicycle improvements			D
342	West side of Jordan Road from E Fair Avenue to just south of S Blackhawk Street	Add sidewalk on the west side			C
344	East side of Jordan Road from Centennial city limits to E Caley Avenue	Add sidewalk on the east side			C
349	West side of Jordan Road just east and west of E Maplewood Avenue	Add sidewalk on the west side			C

LEGEND

- IN PROGRESS PROJECT
- CENTENNIAL PROJECT
- CENTENNIAL LED PROJECT WITH PARTNER(S)
- PARTNER LED PROJECT WITH CENTENNIAL PARTICIPATION
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- ROADWAY
- SIDEWALK
- BICYCLE & PEDESTRIAN
- STUDY
- TRAFFIC PROGRAM
- BRIDGE
- MOBILITY HUB/ EV CHARGING
- TRAIL
- PARK/OPEN SPACE
- TRAIL

C-10 PARKER ROAD

COTTONWOOD DRIVE TO ORCHARD ROAD

Centennial TRANSPORTATION MASTER PLAN

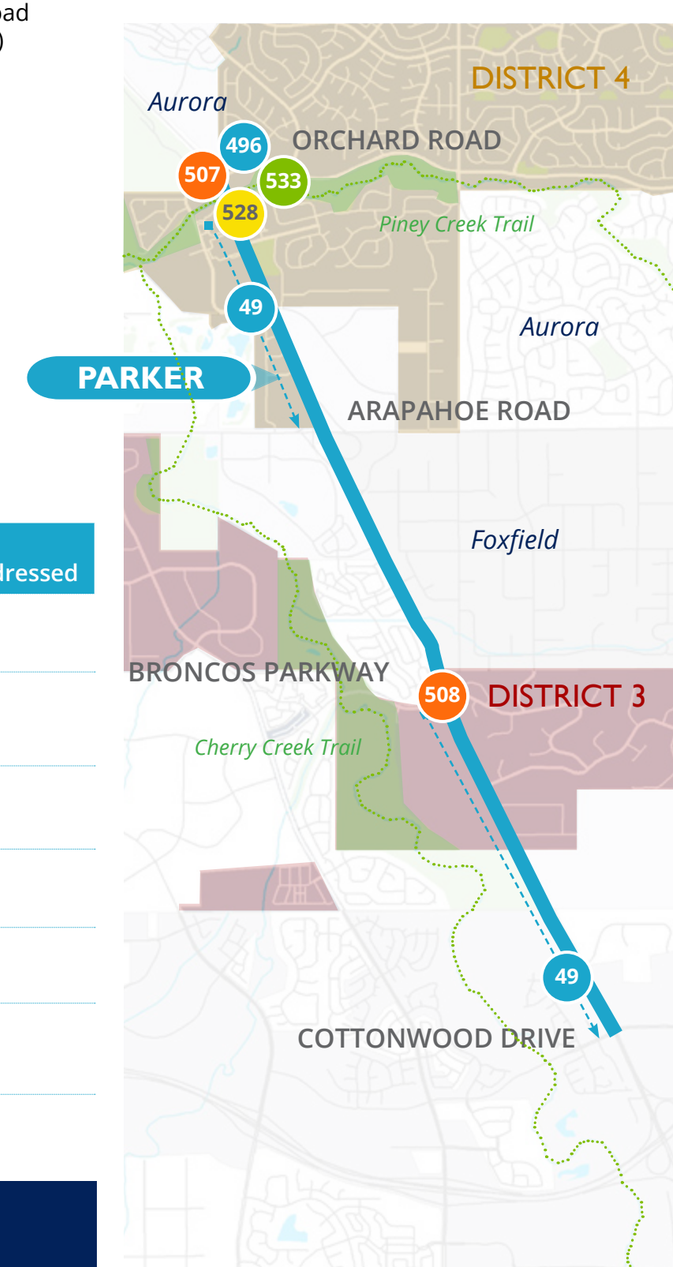
CORRIDOR OPPORTUNITIES

Parker Road is a heavily traveled 6-lane State Highway corridor that could be improved in partnership with CDOT to:

- **A** Improve safety at key intersections
- **B** Address sidewalk gaps along the corridor (areas between Orchard Road and Arapahoe Road)
- **C** Address increasing travel demand and improve mobility options for underserved and overburdened communities through enhanced bus service
- **D** Improve travel time reliability through signal system upgrades and access management
- **E** Convert short trips to biking or walking and enhance safety and comfort by improving facilities on parallel routes, and improving bicycle/pedestrian crossings
- **F** Encourage commercial redevelopment and mixed-use density with streetscape improvements, EV charging stations, and micromobility options

OTHER CONSIDERATIONS

- Mobility hub at Arapahoe Road and Parker Road (Project 497 listed in Arapahoe Road Corridor) would also address **Opportunity F**



CORRIDOR RECOMMENDATIONS

ID	Location	Description	Type	Partners	Corridor Opportunities Addressed
533	at Orchard Road	Interim intersection restriping	ROADWAY	CDOT	D
49	Orchard Rd to Valley Hi Drive (within Centennial boundaries)	Add or widen sidewalks on both sides	SIDEWALK	Arapahoe County, Aurora, CDOT	B, E, F
496	at Orchard Road	EV charging station with DCFC (L3) / Level 2 charging	MOBILITY HUB/ EV CHARGING	Aurora, Colorado Energy Office, CORE Electric Cooperative	F
528	at Piney Creek	Bridge widening to accommodate sidewalk and right turn lane	BRIDGE	CDOT, Aurora	B
507	at Orchard Road	Tight Diamond Interchange	ROADWAY	CDOT, Arapahoe County, Aurora	A, D
508	at Broncos Parkway	Add dual eastbound right turn lane and triple northbound left turn lane	ROADWAY	CDOT, Arapahoe County	D

LEGEND

- IN PROGRESS PROJECT
- CENTENNIAL PROJECT
- CENTENNIAL LED PROJECT WITH PARTNER(S)
- PARTNER LED PROJECT WITH CENTENNIAL PARTICIPATION
- OTHER STAKEHOLDER PROJECT; CENTENNIAL SUPPORTS
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- SIDEWALK
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- STUDY
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- BRIDGE
- MOBILITY HUB/ EV CHARGING
- TRAIL
- PARK/OPEN SPACE
- TRAIL

C-11 BUCKLEY ROAD

ARAPAHOE ROAD TO SMOKY HILL ROAD

Centennial TRANSPORTATION MASTER PLAN

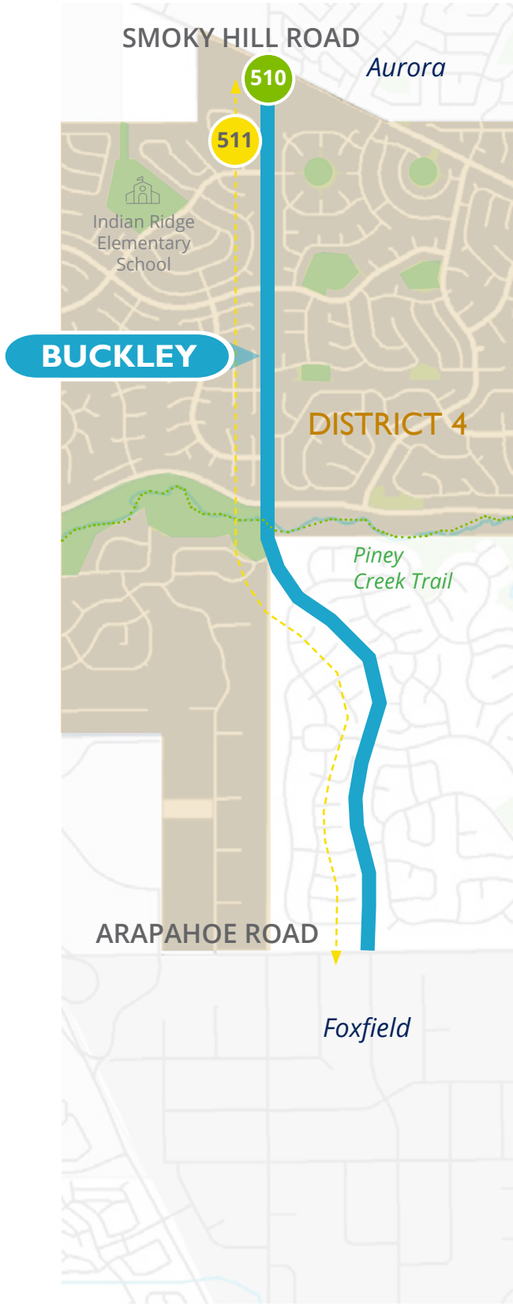
CORRIDOR OPPORTUNITIES

Buckley Road, a moderately traveled 4-lane major arterial with regional connectivity, could be improved through regional partnerships to:

- **A** Improve mobility options for underserved and overburdened communities through first- and last-mile access to transit
- **B** Enhance safety and comfort for bicyclists and pedestrians by improving street crossings
- **C** Improve safety at key intersections and provide traffic warning signage for some intersections

OTHER CONSIDERATIONS

- Consider adding street lighting to improve safety along the corridor and to address **Opportunity C**



CORRIDOR RECOMMENDATIONS

ID	Location	Description	Type	Partners	Corridor Opportunities Addressed
510	at Smoky Hill Road	Intersection improvements	Roadway	Aurora	B, C
511	Arapahoe Road to I-70	Conduct a corridor study (with Arapahoe County and other partners) to assess the feasibility of safety improvements, mobility improvements (such as enhanced transit) and to support local businesses and community identity	Study	Arapahoe County, Aurora	A, B, C

LEGEND

- IN PROGRESS PROJECT
- CENTENNIAL PROJECT
- CENTENNIAL LED PROJECT WITH PARTNER(S)
- PARTNER LED PROJECT WITH CENTENNIAL PARTICIPATION
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- ROADWAY
- SIDEWALK
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- MOBILITY HUB/ EV CHARGING
- TRAIL
- PARK/OPEN SPACE
- TRAIL

C-12 HIMALAYA STREET

SMOKY HILL ROAD TO QUINCY AVENUE

CORRIDOR OPPORTUNITIES

Himalaya Street, a moderately traveled 4-lane minor arterial, could be improved in partnership with Arapahoe County to:

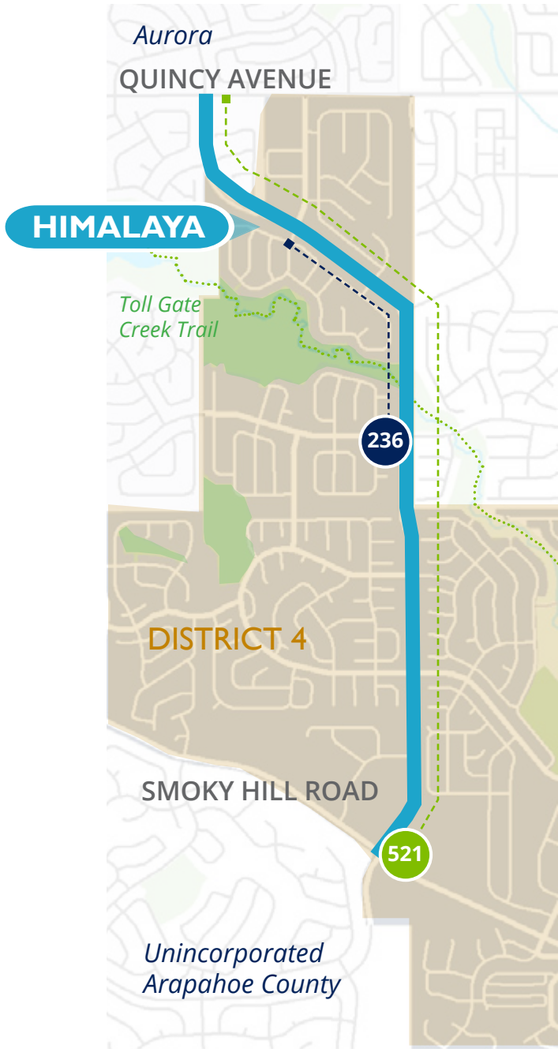
- **A** Improve safety at key intersections
- **B** Improve mobility options for underserved and overburdened communities
- **C** Convert short trips to biking or walking and enhance safety and comfort by improving facilities on parallel routes and improving bicycle/pedestrian crossings

CORRIDOR RECOMMENDATIONS

ID	Location	Description	Type	Partners	Corridor Opportunities Addressed
521	Smoky Hill Road to Quincy Avenue	Adaptive Signal Timing			
236	S Flanders Street to E Chenango Avenue	Sidepath			B, C

OTHER CONSIDERATIONS

- Consider adding street lighting to improve safety along the corridor and to address **Opportunity A**
- Potential for streetscape improvements to enhance corridor aesthetics
- Incorporate Centennial-branded entry treatments and wayfinding



LEGEND

- IN PROGRESS PROJECT
- CENTENNIAL PROJECT
- CENTENNIAL LED PROJECT WITH PARTNER(S)
- PARTNER LED PROJECT WITH CENTENNIAL PARTICIPATION
- OTHER STAKEHOLDER PROJECT; CENTENNIAL SUPPORTS
- ROADWAY
- SIDEWALK
- BICYCLE & PEDESTRIAN
- STUDY
- TRAFFIC PROGRAM
- BRIDGE
- MOBILITY HUB/ EV CHARGING
- TRAIL
- PARK/OPEN SPACE
- TRAIL

C-13 COUNTY LINE ROAD

BROADWAY TO I-25

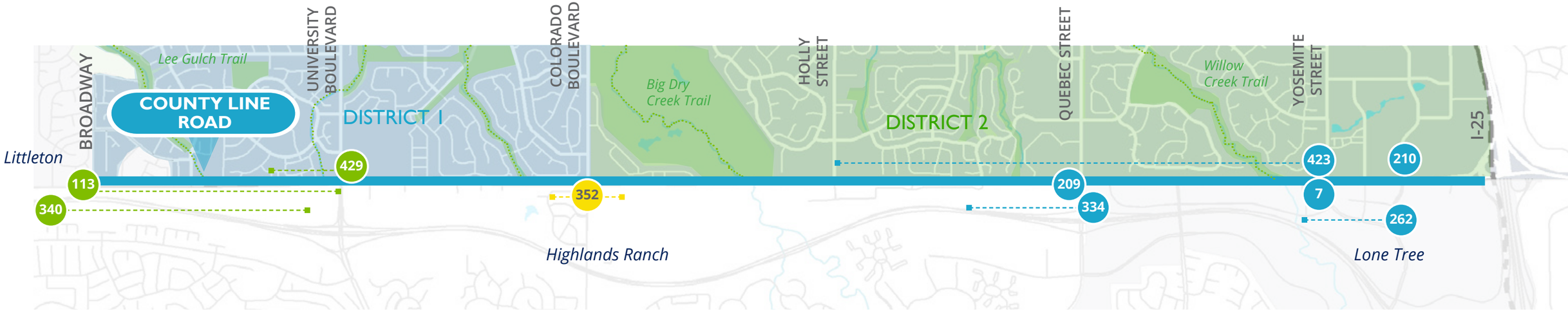
CORRIDOR OPPORTUNITIES

County Line Road is a heavily traveled 4-lane major arterial that could be improved through regional partnerships to:

- **A** Improve safety at key intersections
- **B** Enhance safety and comfort for bicyclists and pedestrians by adding/improving street crossings
- **C** Encourage cohesive streetscaping elements to create a unified community identity along the corridor
- **D** Address increasing travel demand and travel time reliability through signal system upgrades and spot capacity improvements
- **E** Address sidewalk gaps along the corridor

OTHER CONSIDERATIONS

- Evaluate potential signal system upgrades such as adaptive signal control to address **Opportunity D**



See next page for project descriptions

LEGEND

- IN PROGRESS PROJECT
- CENTENNIAL PROJECT
- CENTENNIAL LED PROJECT WITH PARTNER(S)
- PARTNER LED PROJECT WITH CENTENNIAL PARTICIPATION
- OTHER STAKEHOLDER PROJECT; CENTENNIAL SUPPORTS
- PARK/OPEN SPACE
- TRAIL

C-13 COUNTY LINE ROAD (CONTINUED)

BROADWAY TO I-25

CORRIDOR RECOMMENDATIONS

ID	Location	Description	Type	Partners	Corridor Opportunities Addressed
113	University Boulevard to Broadway	Widen to 4 lanes and signalize CLR and Clarkson	ROADWAY	Douglas County	D
340	just east of S Clarkson Street	Add sidewalk on the south side (to be completed with County Line Road widening project)	SIDEWALK	Douglas County, Littleton	E
429	Phillips Avenue to University Boulevard	Add missing sidewalk on the north side	SIDEWALK		E
7	at Yosemite Street	New southbound to westbound right turn lane	ROADWAY	Lone Tree	A, D
209	at Quebec Street	Widen to 6 lanes through intersection, add northbound free right turn lane	ROADWAY	Douglas County	D
210	at Chester Street	Future intersection capacity improvements	ROADWAY	Lone Tree	D
262	Willow Creek Trail to S Chester Street	Sidepath	BICYCLE & PEDESTRIAN	Lone Tree	B
334	Niagara to Quebec Street	Add sidewalk on the south side (to be completed with County Line Road widening project)	SIDEWALK	Douglas County	E
423	Holly Street to Yosemite Street	Study corridor capacity improvements and feasibility and multimodal mobility improvements	STUDY	Douglas County	A, B, C, D
352	South side 1,200 ft west of Colorado Boulevard and 850 ft east of Colorado Boulevard	Add sidewalk on the south side	SIDEWALK	Douglas County	E

LEGEND

- IN PROGRESS PROJECT
- CENTENNIAL PROJECT
- CENTENNIAL LED PROJECT WITH PARTNER(S)
- PARTNER LED PROJECT WITH CENTENNIAL PARTICIPATION
- OTHER STAKEHOLDER PROJECT; CENTENNIAL SUPPORTS

ROADWAY · SIDEWALK · BICYCLE & PEDESTRIAN · STUDY · TRAFFIC PROGRAM · BRIDGE · MOBILITY HUB/ EV CHARGING · TRAIL

C-14 DRY CREEK ROAD/EASTER AVENUE/BRONCOS PARKWAY

MINERAL AVENUE TO PARKER ROAD

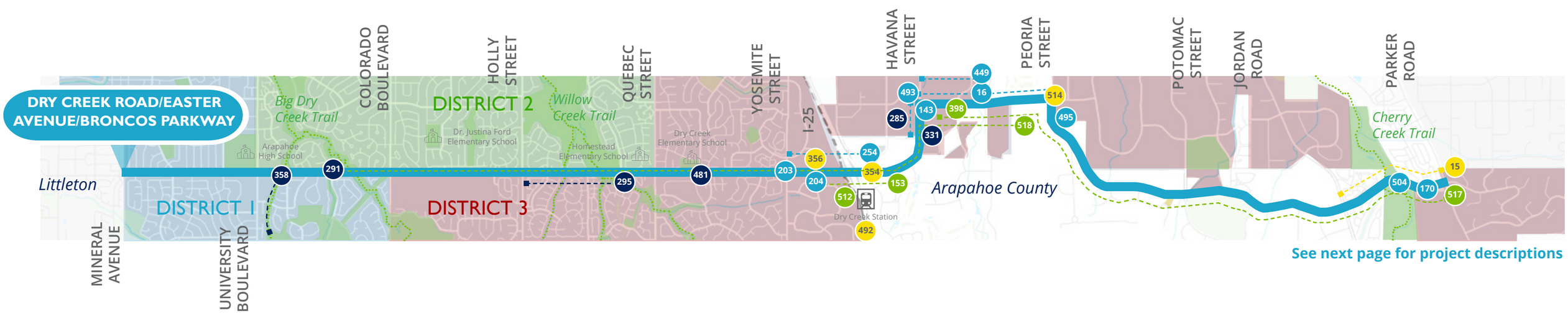
CORRIDOR OPPORTUNITIES

Dry Creek Road/Easter Avenue/Broncos Parkway, a heavily traveled 4- to 6-lane major arterial, could be improved through regional partnerships to:

- **A** Improve safety at key intersections
- **B** Address increasing travel demand and improve mobility options for underserved and overburdened communities through enhanced bus service
- **C** Improve travel time reliability through signal system upgrades
- **D** Create a more direct route to function as a continuous east-west alternative to Arapahoe Road
- **E** Convert short trips to biking or walking and enhanced safety and comfort by improving facilities on parallel routes, improving and adding bicycle/pedestrian crossings, and enhancing wayfinding (especially near Dove Valley Regional Park)
- **F** Encourage commercial redevelopment and mixed-use density with streetscape improvements, EV charging stations, and micromobility options

OTHER CONSIDERATIONS

- Consider adding street lighting to improve safety along the corridor and to address **Opportunity A**
- Potential for streetscape improvements to enhance corridor aesthetics
- Incorporate Centennial-branded entry treatments and wayfinding



See next page for project descriptions

LEGEND

- IN PROGRESS PROJECT
- CENTENNIAL PROJECT
- CENTENNIAL LED PROJECT WITH PARTNER(S)
- PARTNER LED PROJECT WITH CENTENNIAL PARTICIPATION
- OTHER STAKEHOLDER PROJECT; CENTENNIAL SUPPORTS
- PARK/OPEN SPACE
- TRAIL

C-14 DRY CREEK ROAD/EASTER AVENUE/BRONCOS PARKWAY (CONTINUED)

MINERAL AVENUE TO PARKER ROAD

CORRIDOR RECOMMENDATIONS

ID	Corridor Name	Location	Description	Type	Partners	Corridor Opportunities Addressed
153	Dry Creek Road	Chester Street to Inverness Drive East	Add eastbound through lane, intersection improvements, sidewalk improvements		Arapahoe County, CDOT	A
398	Easter Avenue	at Kenton Street	Signalize intersection			A
512	Dry Creek Road	at southbound I-25 ramp	Intersection improvements		CDOT, Arapahoe County	A
517	Easter Avenue/Broncos Parkway	Havana Street to Parker Road	Corridor Study (with Arapahoe County) to identify capacity, operational, safety, and multimodal improvements		Arapahoe County	A, B, C, D, E, F
518	Dry Creek Road/Havana Street	Adams Street to Briarwood Avenue	Adaptive Signal Timing			C
285	Havana Street	E Peakview Avenue to ending just north of E Geddes Ave	Sidepath			E
291	Dry Creek Road	S Adams Street heading east to Big Dry Creek Trail Connector	Sidepath			E
295	Dry Creek Road	S Holly Street to S Homestead Parkway	Sidepath			E
331	Havana Street	Geddes Avenue to Briarwood Avenue	Add sidewalk on the east side			E
358	Dry Creek Road	East of University Boulevard	Pedestrian underpass and trail connection to the south			E
481	Dry Creek Road	Spruce Street to Jamison Drive	Widen sidewalk on the south side to 10' sidepath			E
16	Easter Avenue	Havana to Peoria	Widen to 6 lanes		Arapahoe County	D
143	Havana Street	at Easter Avenue	Reconstruct - Continuous Flow Intersection and bike/ped improvements		Arapahoe County	A, D

LEGEND

- IN PROGRESS PROJECT
- CENTENNIAL PROJECT
- CENTENNIAL LED PROJECT WITH PARTNER(S)
- PARTNER LED PROJECT WITH CENTENNIAL PARTICIPATION
- OTHER STAKEHOLDER PROJECT; CENTENNIAL SUPPORTS

ROADWAY | SIDEWALK | BICYCLE & PEDESTRIAN | STUDY | TRAFFIC PROGRAM | BRIDGE | MOBILITY HUB/ EV CHARGING | TRAIL

C-14 DRY CREEK ROAD/EASTER AVENUE/BRONCOS PARKWAY (CONTINUED)

MINERAL AVENUE TO PARKER ROAD

CORRIDOR RECOMMENDATIONS

ID	Corridor Name	Location	Description	Type	Partners	Corridor Opportunities Addressed
170	Broncos Parkway	near Tagawa Gardens	Potential access improvements		CDOT, Arapahoe County, Property Owner	A
203	Dry Creek Road	at Yosemite Street	Future intersection capacity improvements		Developer	A
204	Dry Creek Road	at Chester Street	Future intersection capacity improvements		Developer	A
254	Dry Creek Road	S Alton Court to S Clinton Street	Buffered bike lane		CDOT	E
449	Easter Avenue	Havana Street to Lima Street	Add missing sidewalk sections on the north and south sides		Developer	E
493	Havana Street	at Easter Avenue	Micromobility hub with Level 2 charging		Colorado Energy Office, Xcel Energy	F, B
495	Easter Avenue	at Peoria Street	EV charging station with Level 2 charging		Colorado Energy Office, Xcel Energy	F
504	Broncos Parkway	at Cherry Creek	Bridge repair (Functionally Obsolete) - 2 bridges		SEMSWA	B
15	Broncos Parkway	Jordan Road to Parker Road	Widen to 6 lanes		Arapahoe County, CDOT	D
354	Dry Creek Road	East of I-25 (S Clinton Street)	Pedestrian overpass		Arapahoe County	E
356	Dry Creek Road	West of I-25 (Chester Street)	Pedestrian overpass		Arrow	E
492	Dry Creek Road	at I-25	Mobility hub at Dry Creek LRT Station with Level 1 / Level 2 charging		RTD, Colorado Energy Office, Xcel Energy	F, B
514	Easter Avenue	at Peoria Street	Intersection improvements to facilitate east-west travel pattern		Arapahoe County	A, D

LEGEND

- IN PROGRESS PROJECT
- CENTENNIAL PROJECT
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- OTHER STAKEHOLDER PROJECT; CENTENNIAL SUPPORTS

ROADWAY | SIDEWALK | BICYCLE & PEDESTRIAN | STUDY | TRAFFIC PROGRAM | BRIDGE | MOBILITY HUB/ EV CHARGING | TRAIL

C-15 ARAPAHOE ROAD

BROADWAY TO LIVERPOOL

Centennial TRANSPORTATION MASTER PLAN

CORRIDOR OPPORTUNITIES

Arapahoe Road is a heavily traveled 4- to 6-lane major arterial (State Highway between I-25 and Parker Road) that could be improved in partnership with CDOT and other regional partners to:

- **A** Improve safety at key intersections
- **B** Address sidewalk gaps along the corridor
- **C** Address increasing travel demand and improve mobility options for underserved and overburdened communities through enhanced bus service
- **D** Improve travel time reliability through signal system upgrades, intersection reconfigurations, and select capacity improvements
- **E** Convert short trips to biking or walking and enhanced safety and comfort by improving facilities on parallel routes, improving bicycle/pedestrian crossings, and enhancing wayfinding
- **F** Encourage commercial redevelopment and mixed-use density while creating a unified and recognizable community identity with streetscape improvements, EV charging stations, and micromobility options

OTHER CONSIDERATIONS

- A variety of on-street and trail improvements on parallel routes between Broadway and Parker Road (including segments of Easter Avenue, Costilla Avenue, Briarwood Boulevard, Peakview Avenue, Caley Avenue and Little Dry Creek) also address **Opportunity E**

LEGEND

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- OTHER STAKEHOLDER PROJECT; CENTENNIAL SUPPORTS
- PARK/OPEN SPACE
- TRAIL

C-15 ARAPAHOE ROAD (CONTINUED)

BROADWAY TO LIVERPOOL

Centennial TRANSPORTATION MASTER PLAN

CORRIDOR RECOMMENDATIONS

ID	Location	Description	Type	Partners	Corridor Opportunities Addressed
400	Broadway to Liverpool Street	Corridor Study to assess the feasibility of mobility improvements (such as enhanced transit)		CDOT, RTD, Arapahoe County, Aurora, Littleton, Foxfield	C
	SEGMENT A - BROADWAY TO I-25				
101	at Big Dry Creek (east of University)	Replace structure		SEMSWA	
173	at Clarkson Street	Install traffic signal and provide multimodal connection north and south of Arapahoe Road			A
479	Franklin Street to Quebec Street	Adaptive Signal Timing			
47	Krameria Way to Briarwood Circle	Widen walk on the north side of Arapahoe Road (Little Dry Creek Trail)			B
284	S Homestead Parkway heading east to trail connection close to Little Dry Creek	Sidepath			E
357	Willow Creek Trail	Pedestrian underpass (study feasibility for long-term improvement)			E
471	at Homestead Parkway	North-south multimodal crossing improvements			E
472	at Little Dry Creek Trail	At-grade crossing improvement such as HAWK to replace closed underpass			E
490	at Uinta Street	Micromobility hub at Castlewood Library with DCFC (L3) charging		Arapahoe Library District, Colorado Energy Office, Xcel Energy	E,D

LEGEND

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ROADWAY | SIDEWALK | BICYCLE & PEDESTRIAN | STUDY | TRAFFIC PROGRAM | BRIDGE | MOBILITY HUB/ EV CHARGING | TRAIL

C-15 ARAPAHOE ROAD (CONTINUED)

BROADWAY TO LIVERPOOL

Centennial TRANSPORTATION MASTER PLAN

CORRIDOR RECOMMENDATIONS

ID	Location	Description	Type	Partners	Corridor Opportunities Addressed
	SEGMENT B - I-25 TO PARKER ROAD (CO 88)				
329	South side of Arapahoe from S Jordan Road to S Chambers Way	Add sidewalk on the south side		CDOT	B
333	Potomac to Jordan	Add sidewalk on the south side		CDOT	B
341	North side of Arapahoe from Peoria Street to just east of S Revere Parkway	Add sidewalk on the north side		CDOT	B
343	South side of Arapahoe from S Abilene Way to S Carson Street	Add sidewalk on the south side		CDOT	B
345	North side of Arapahoe from S Vaughn Street to S Carson Street	Add sidewalk on the north side		CDOT	B
359	East of Revere (at Lone Tree Creek Trail)	Pedestrian underpass		CDOT	E
494	at Vaughn Street	Micromobility hub at Civic Center with DCFC (L3) charging		Colorado Energy Office, Xcel Energy	F
497	at Parker Road	Mobility hub with DCFC (L3) / Level 2 charging		Aurora, Arapahoe County, Colorado Energy Office, Xcel Energy	F
218	at Revere Parkway	Signal replacement, eastbound and westbound right turn deceleration lanes		CDOT	A, D
219	at Peoria Street	Signal replacement, eastbound right turn deceleration lane		CDOT	A, D
376	at Potomac Street	Restripe southbound approach		CDOT	A, D
377	at Lewiston Way	Restripe northbound approach		CDOT	A, D
378	at Lima Street	Restripe northbound approach		CDOT	A, D
379	Atchison Way to Buckley Road	Add fourth eastbound through lane		CDOT	A, D
382	Havana Street to Dayton Street	Add fourth westbound lane		CDOT	A, D
386	at Lima Street	Add westbound right turn lane		CDOT	A, D

LEGEND

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ROADWAY | SIDEWALK | BICYCLE & PEDESTRIAN | STUDY | TRAFFIC PROGRAM | BRIDGE | MOBILITY HUB/ EV CHARGING | TRAIL

C-15 ARAPAHOE ROAD (CONTINUED)

BROADWAY TO LIVERPOOL

Centennial TRANSPORTATION MASTER PLAN

CORRIDOR RECOMMENDATIONS

ID	Location	Description	Type	Partners	Corridor Opportunities Addressed
387	Buckley Road to Potomac Street	Add fourth westbound lane	ROADWAY	CDOT	A, D
388	at Havana Street	Intersection reconstruction with displaced left turn	ROADWAY	CDOT	A, D
389	at Jordan Road	Eastbound overpass	ROADWAY	CDOT	A, D
391	Dayton Street to Havana Street	Access modifications to reduce driveway access points as redevelopment occurs	ROADWAY	CDOT	A, D
491	at I-25	Mobility hub at Arapahoe LRT Station	MOBILITY HUB/ EV CHARGING	RTD, Greenwood Village	F
	SEGMENT C - PARKER ROAD TO LIVERPOOL STREET				
509	at Buckley Road	Turn lane extensions and access modifications at Olathe Street	ROADWAY	Arapahoe County	A, D
534	at Lewiston Way	Restriping to address bottleneck	ROADWAY	CDOT	D
156	Chapparal to Himalaya Way	Widen to 6 lanes and add sidewalks	ROADWAY	CDOT, DRCOG	B, D
249	S Piney Creek Circle to S Liverpool St	Sidepath	BICYCLE & PEDESTRIAN	Aurora	E
298	East of Parker Road to S Buckley Road	Sidepath on the north side	BICYCLE & PEDESTRIAN	Aurora, Arapahoe County, CDOT	E
361	Himalaya Way to Liverpool Street	Widen to 6 lanes	ROADWAY	Aurora, Arapahoe County	D
516	Grandview High School to Liverpool Street	Future intersection capacity improvements	ROADWAY	Aurora	D
478	Lewiston Way to Buckley Road	Add sidewalk on the south side	SIDEWALK	Foxfield	B

LEGEND

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ROADWAY · SIDEWALK · BICYCLE & PEDESTRIAN · STUDY · TRAFFIC PROGRAM · BRIDGE · MOBILITY HUB/ EV CHARGING · TRAIL

C-16 ORCHARD ROAD WEST

BROADWAY TO QUEBEC STREET

Centennial TRANSPORTATION MASTER PLAN

CORRIDOR OPPORTUNITIES

Orchard Road (Broadway to Quebec Street) is a moderately traveled 2- to 4-lane minor arterial that could be improved through regional partnerships to:

- A Address sidewalk gaps
- B Enhance mobility options for underserved and overburdened communities
- C Convert short trips to biking or walking and enhance safety and comfort by improving bicycle and walking infrastructure along and across the corridor

CORRIDOR RECOMMENDATIONS

ID	Location	Description	Type	Partners	Corridor Opportunities Addressed
93	at High Line Canal Trail (west of University Boulevard)	Curb extensions to narrow crossing distance, reset RRFB and bridge repair		Greenwood Village	B, C
115	Franklin to High Line Canal	Widen to 3-lane section and new sidewalk (includes curb, gutter, and sidewalk west to Cherrywood Circle)		Greenwood Village	A, B, C
44	Clarkson Street to Sherman Way	Install 5' minimum sidewalk on the south side			A, B
337	South side just west of Green Oaks Drive to just east of Gilpin Court	Add sidewalk on the south side			A, B
503	at High Line Canal	Bridge repair (structurally deficient)		Greenwood Village	
535	Colorado Blvd to Palos Verdes Park	Widen sidewalk on south side to 10' sidepath		Greenwood Village	B, C

LEGEND

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- PARTNER LED PROJECT WITH CENTENNIAL PARTICIPATION
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- ROADWAY
- SIDEWALK
- BICYCLE & PEDESTRIAN
- STUDY
- TRAFFIC PROGRAM
- BRIDGE
- MOBILITY HUB/ EV CHARGING
- TRAIL
- PARK/OPEN SPACE
- TRAIL

C-17 ORCHARD ROAD EAST

PARKER ROAD TO SMOKY HILL ROAD

Centennial TRANSPORTATION MASTER PLAN

CORRIDOR OPPORTUNITIES

Orchard Road (Parker Road to Smoky Hill Road) is a moderately traveled 4-lane minor arterial that could be improved to:

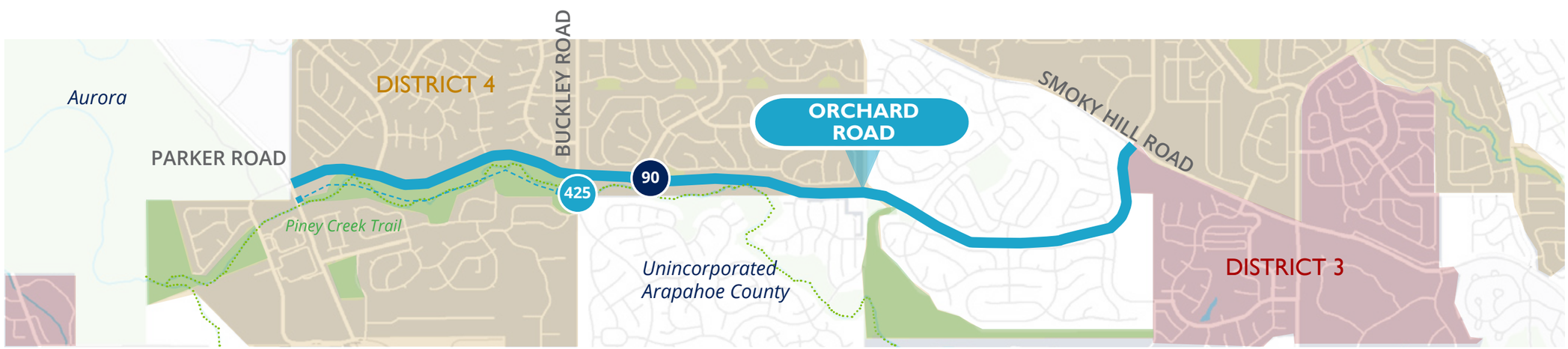
- **A** Improve safety at key intersections
- **B** Enhance mobility options for underserved and overburdened communities
- **C** Enhance safety and comfort for bicyclists and pedestrians by adding/improving street crossings
- **D** Provide EV charging stations and micromobility options in existing and future employment areas

OTHER CONSIDERATIONS

- Mobility hub at Arapahoe Road and Parker Road (Project 496 listed in Parker Road Corridor) would address **Opportunity D**
- Consider adding street lighting to improve safety along the corridor and to address **Opportunity A**

CORRIDOR RECOMMENDATIONS

ID	Location	Description	Type	Partners	Corridor Opportunities Addressed
90	near Telluride Street	Pedestrian crossing enhancements			B, C
425	Parker Road to Buckley Road	Corridor study to identify multimodal, operational, and safety improvements		Arapahoe County	A, B, C, D



LEGEND

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- STUDY
- TRAFFIC PROGRAM
- BRIDGE
- MOBILITY HUB/ EV CHARGING
- TRAIL
- PARK/OPEN SPACE
- TRAIL

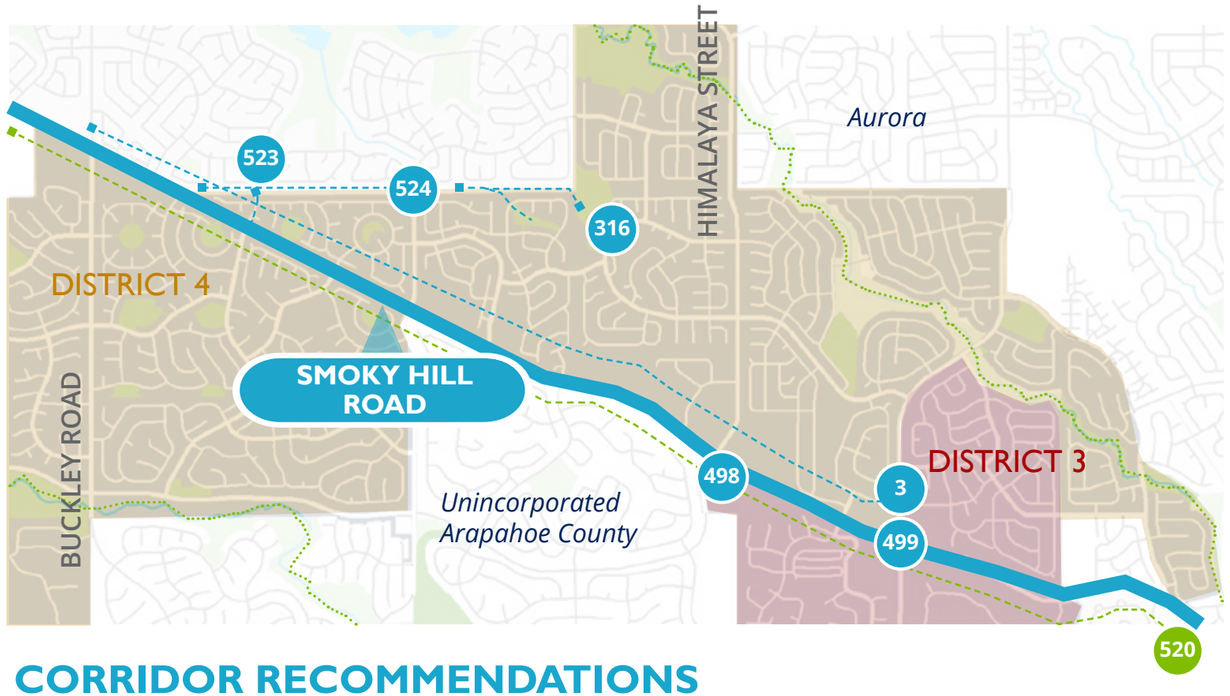
C-18 SMOKY HILL ROAD

RESERVOIR ROAD TO HIMALAYA STREET

Centennial TRANSPORTATION MASTER PLAN

CORRIDOR OPPORTUNITIES

Smoky Hill Road is a heavily traveled 4-lane major arterial. Refer to Smoky Hill Corridor Study.



CORRIDOR RECOMMENDATIONS

ID	Location	Description	Type	Partners
520	Buckley Road to Versailles	Adaptive Signal Timing		
3	Buckley Road to Liverpool Street	Widen to 6 lanes, intersection improvements, safety enhancements		Aurora, Arapahoe County
3a	(West of) Buckley Road to (west of) Wagontrail Parkway	Intersection improvements at Buckley Road, additional through lane, raised median		Aurora, Arapahoe County
3b	Westbound right-turn lane from Pagosa Street to Buckley Road	Add westbound right-turn lane		Aurora, Arapahoe County

CORRIDOR RECOMMENDATIONS (CONTINUED)

ID	Location	Description	Type	Partners
3c	(West of) Wagontrail Parkway to (east) Tower Road	Intersection improvements at Wagontrail, additional through lane, raised median		Aurora, Arapahoe County
3d	(East of) Tower Road to (west of) Gibraltar Way	Intersection improvements at Tower, additional through lane, raised median		Aurora, Arapahoe County
3e	(West of) Gibraltar Way to (west of) Orchard Road	Intersection improvements at Gibraltar, additional through lane, raised median		Aurora, Arapahoe County
3f	(West of) Orchard Road (west of 20250 E Smoky Hill Road	Intersection improvements at Gibraltar, additional through lane, raised median		Aurora, Arapahoe County
3g	Westbound right-turn lane from Orchard Road to 20250 E Smoky Hill Road	Add westbound right-turn lane		Aurora, Arapahoe County
3h	(West of) 20250 E Smoky Hill Road to Liverpool Street	Intersection improvements at 20250 E, additional through lane, raised median		Aurora, Arapahoe County
316	Power Line Trail starting at trail connection just south of E Whitaker Circle, heading east to Peakview North Park, south to trail connection	Connector Trail serving Smoky Hill corridor		Aurora
523	Power Line Trail from Smoky Hill Road to Telluride Street	Connector Trail serving Smoky Hill corridor		Aurora
524	Power Line Trail from Telluride Street to Tower Road	Connector Trail serving Smoky Hill corridor		Aurora
498	at Himalaya Street	EV charging station		Colorado Energy Office
499	at Picadilly Street	Micromobility hub at Park-n-Ride		RTD, Colorado Energy Office

LEGEND

- IN PROGRESS PROJECT
- CENTENNIAL PROJECT
- CENTENNIAL LED PROJECT WITH PARTNER(S)
- PARTNER LED PROJECT WITH CENTENNIAL PARTICIPATION
- OTHER STAKEHOLDER PROJECT; CENTENNIAL SUPPORTS
- ROADWAY
- SIDEWALK
- BICYCLE & PEDESTRIAN
- STUDY
- TRAFFIC PROGRAM
- BRIDGE
- MOBILITY HUB/ EV CHARGING
- TRAIL
- PARK/OPEN SPACE
- TRAIL

CHAPTER 7.
IMPLEMENTATION PLAN

The transportation revenues expected over the 18-year time horizon of the TMP will not be enough to cover the cost of the transportation needs in Centennial. Careful consideration of investment strategies is needed, along with an understanding of the associated tradeoffs. This chapter presents an overview of the revenue forecasts, establishes a funding strategy, and documents the project evaluation process used to prioritize projects for the Fiscally Constrained Plan. This chapter also details the strategies to augment project implementation.

Although the TMP addresses funding for various transportation programs, fiscally constrained project lists are developed only for Multimodal Roadway Projects, Sidewalk Projects, and Other Bicycle & Pedestrian Projects. All other project categories, including the Traffic Program, the Neighborhood Traffic Management Program (NTMP), Bridge Repairs, Mobility Hubs, Studies and Other Citywide Programs, are prioritized outside the TMP. These other programs are funded through funding "pools."

The cost of transportation projects ranges from low-cost items like striping bike lanes to multimillion dollar efforts like roadway widening. Here are some typical costs for transportation improvements:

TRAFFIC SIGNAL
$1M

ROADWAY WIDENING
$11M PER MILE

ADDING SIDEWALK
$500,000 PER MILE

STRIPING BIKE LANES
$70,000 PER MILE

IMPROVING STREET CROSSINGS
$100,000 (for pedestrians)

ADDING A PEDESTRIAN UNDERPASS OR OVERPASS
$5 - 10M

STARTING NEW MICROTRANSIT SERVICE
(operating 7 days/week from 6 AM to 9 PM with 1 vehicle)
$500,000/YEAR TO OPERATE

CREATING A FISCALLY CONSTRAINED PLAN

PROJECTS
- IDENTIFY PROJECTS
- EVALUATE & PRIORITIZE PROJECTS
- DEVELOP PROJECT COST ESTIMATES

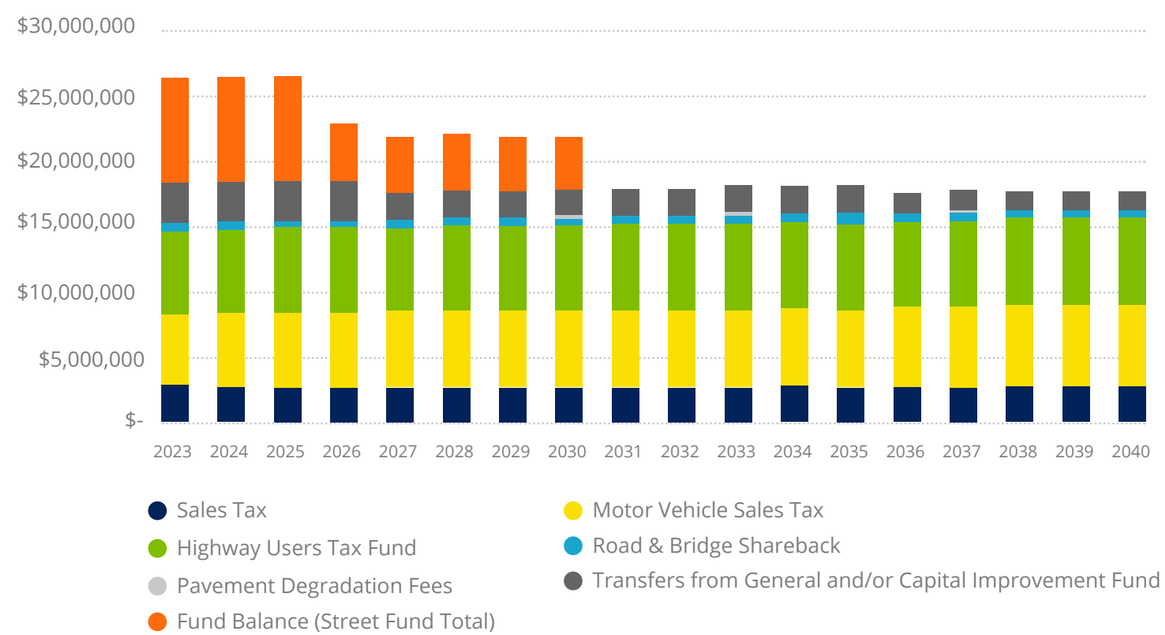
FUNDING
- DEVELOP REVENUE FORECASTS
- ALLOCATE RESOURCES

FISCALLY CONSTRAINED PLAN

Revenue Forecasts

Various revenue sources will be used to fund transportation projects and programs, including federal, state, local, and private resources. The revenue forecasts shown on **Figure 11** account only for local funding sources and are based on historic funding levels. These funds can reasonably be expected over the duration of the plan. No federal, state, or other grant or private funds are assumed as part of these forecasts. As described in the Fiscally Constrained Plan, some assumptions about additional funding sources are made for specific projects. The revenue forecasts total $371 million over the 18-year period; an average of $20.6 million per year. The revenue forecasts include the Fund Balance that has been committed to the Street Fund for completion of priority projects identified in this TMP.

FIGURE 11: TRANSPORTATION REVENUE FORECASTS



Funding Strategy

The revenue forecasts are not adequate to achieve the TMP goals and meet all of the City's transportation needs. A funding strategy is needed to optimize the use of the available revenues and respond to the community's desire for a balanced approach to transportation investments. The TMP funding strategy recommends:

Safety & Mobility Infrastructure

- Continuing to take care of the existing system by focusing on operations, maintenance and road and bridge rehabilitation
- Placing emphasis on addressing congestion and safety at intersection bottlenecks and leveraging technology to improve the efficiency of major corridors
- Increasing funding levels (compared to historic levels) for sidewalks and other bicycle and pedestrian projects to encourage active transportation modes
- Continuing to support roadside improvements and embracing opportunities to further Centennial's branding through entry monumentation and wayfinding

Funding & Partnership Opportunities

- Funding studies in partnership with regional and local entities to explore enhanced transit service
- Dedicating funds to partner on advanced mobility and electrification projects such as mobility hubs, microtransit, connected and automated vehicles, and EV charging stations
- Pursuing additional revenue sources through federal, state, and other grant opportunities
- Support community growth through public-private partnerships

Based on this funding strategy, **Figure 12** shows the TMP recommended allocation of revenue to the various project categories and programs.

COMMUNITY FUNDING PRIORITIES

During the second phase of community outreach, community members were asked what types of improvements Centennial should fund. With a total of over 290 responses, the two categories receiving the highest number of votes were "maintain existing streets and bridges" and "apply technology solutions to reduce congestion." As shown on the chart below, the results of the community's responses reinforce the need for a balanced approach to funding transportation in Centennial; many participants expressed that all categories are important.

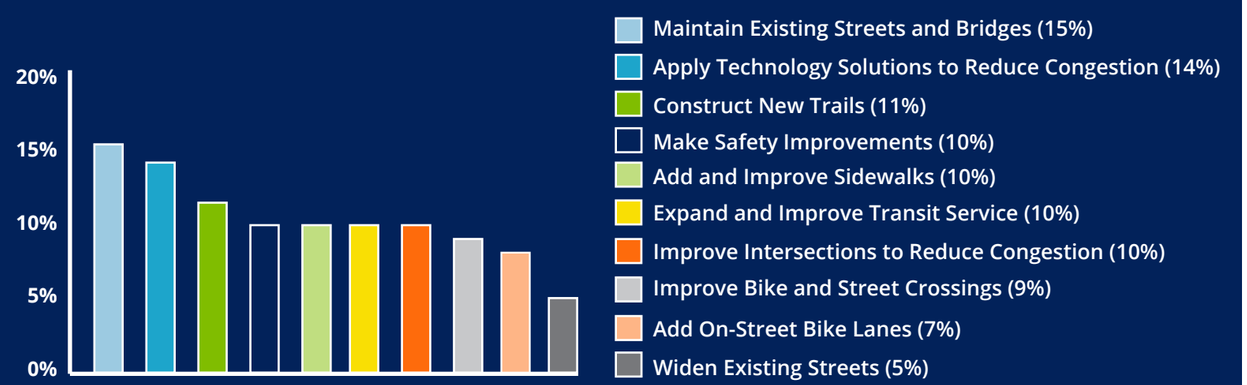
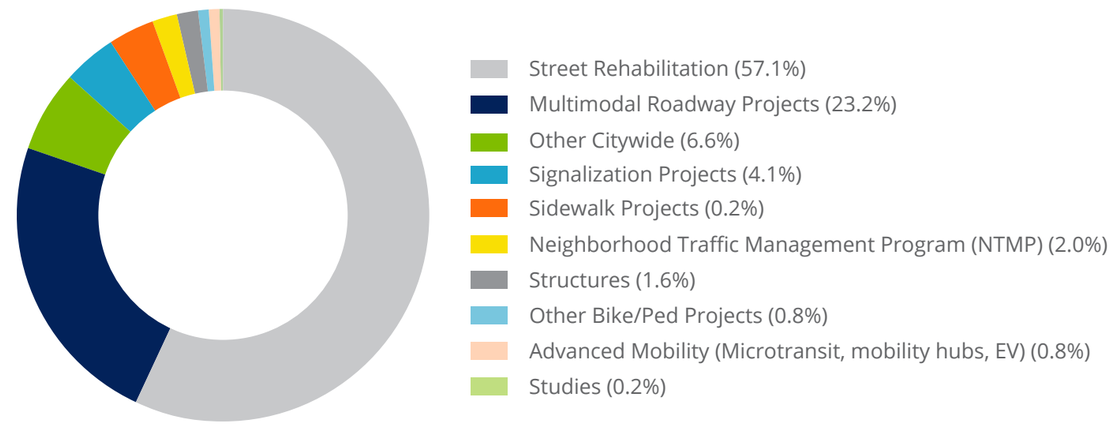


FIGURE 12: REVENUE ALLOCATION

The revenue allocation represents a balanced approach to funding transportation needs in Centennial. It considers the community's input on funding priorities, along with technical evaluation and the costs associated with various project types. The revenue allocation represents an increase in funding levels, compared to historic levels, for sidewalks, bicycle and pedestrian projects, the Neighborhood Traffic Management Program, and Advanced Mobility.



Project Evaluation

With limited funding available, the process of prioritizing projects must be comprehensive and strive to identify those projects that will most effectively move the City's transportation system toward achieving the transportation goals. In alignment with performance-based planning, the project prioritization process is structured to identify those projects that will provide the greatest contribution toward meeting the seven transportation goals and associated performance targets (as documented in Chapter 4). The evaluation criteria used to compare projects are directly related to the goals.

The seven transportation goals were used as the basis for a data-driven project evaluation for Multimodal Roadway, Sidewalk, and Other Bicycle & Pedestrian projects. The evaluation criteria are listed in **Table 3,** and details about the data and specific metrics used for each criterion are provided in **Appendix D**. Scores for each goal area/criterion are on a 0–1 scale, with 0 being the least favorable and 1 being the most favorable.

TABLE 3: PROJECT EVALUATION CRITERIA

Goal Area		Evaluation Criteria	
		Multimodal Roadway Projects	Sidewalk, Other Bicycle & Pedestrian Projects
	Safety	• Will the project provide proactive safety improvements? • Will it reduce injury and fatal crashes? • Will users feel more comfortable?	• Will the project provide safety improvements? • Will it reduce bicycle and/or pedestrian crashes? • Will users feel more comfortable?
	Flexible Mobility	• Will the project improve or add new mode choices and opportunities? • Will it help address the needs of underserved and overburdened communities within the project area?	• Will the project enhance bicycle and/or pedestrian access to a school, park or open space, or transit stop/station? • Will it help address the needs of underserved and overburdened communities within the project area?
	Innovation	• Does the project include advanced mobility elements and/or will the project reduce transportation-related emissions?	
	Efficiency and Reliability	• Is the project located on a road that is currently congested or expected to experience congestion in the future? • Will the project optimize corridor operations and reduce congestion (e.g., through capacity expansion and/or fiber communications)?	• Is the project located along or close to an area with high volumes of short trips (indicating a high potential for mode shift)?
	Regionalism and Partnerships	• Does the project include potential funding partners? • Are there opportunities to leverage partnerships to expand the scope and complete larger, more robust projects?	
	Economic and Community Vitality	• Does the project improve Centennial's image or invigorate vitality and positive growth and development? • Is the project located along one of the City's five designated retail corridors or within a Spotlight area from Centennial Next? • How many residents and employees will directly benefit from the project?	• Will the project allow a resident to walk to an ice cream shop (is the project within a 10-minute walk of neighborhood commercial)? • Is the project located along one of the City's five designated retail corridors or in a Spotlight area? • How many residents and employees will directly benefit from the project?
	Fiscal Responsibility	• How does the cost of the project compare to the benefits?	

The relative importance of the seven goals varies; therefore, weights are assigned to each goal category and corresponding evaluation criteria. The Project Management Team used input from the first phase of community engagement to develop the weights shown in **Table 4**. The project score (0–1) for each goal was multiplied by the corresponding weight, resulting in a total project score ranging from 0 to 100.

TABLE 4: WEIGHTS BY GOAL AREA/ EVALUATION CRITERION

Goal Area	Weight
Safety	24%
Efficiency and Reliability *(Congestion Reduction)*	16%
Economic and Community Vitality	15%
Flexible Mobility *(Freedom of Mode Choice)*	14%
Fiscal Responsibility	12%
Innovation	11%
Regionalism and Partnerships	8%
Total	100%

Fiscally Constrained Plan

While there is limited funding to address all the transportation needs in Centennial, the funding strategy will optimize available funds and enable the City to provide a functional transportation system. The following pages highlight what could be completed with anticipated funding and how additional funding could further enhance the transportation system. The purpose of the Fiscally Constrained Plan is to establish a pipeline of projects to move into the CIP and annual budgeting process. While the Fiscally Constrained Plan represents the best estimate of the timing of priority projects, there remains flexibility in how the priority projects move into the CIP and annual budget. If other funds (such as a federal grant or partner contribution) become available for a particular project, the City has discretion to prioritize that project sooner than anticipated in the TMP. The TMP is intended to provide flexibility for the City to take advantage of funding opportunities as they arise.

YEAR OF EXPENDITURE COSTS

The Fiscally Constrained Plan considers the year of expenditure (YOE) cost of projects. Construction costs are expected to increase annually. Based on historic and recent construction cost inflation rates, the TMP assumes a 4.3 percent annual inflation through 2040. A project that costs $1 million today would cost $2.2 million in 2040.

Multimodal Roadway Projects

Centennial and partnering agencies currently have several multimodal roadway projects in progress that will provide benefits to the transportation system in the near future. These projects are in various stages of design or construction or are planned for 2022. Two large-scale projects include the widening of County Line Road between Broadway and University Boulevard and the reconstruction of the Arapahoe Road bridge over Big Dry Creek (just east of University Boulevard).

The TMP identifies 24 multimodal roadway capital projects (in addition to those projects currently in progress), with project costs totaling approximately $137 million in 2021 dollars. With approximately $86 million allocated to multimodal roadway projects, 21 of these projects could be constructed when accounting for construction cost inflation over time. The fiscally constrained Multimodal Roadway Projects are listed in priority order in **Table 5** and shown on **Figure 13**. Many of these projects include multimodal components such as sidewalks, bicycle facilities, and bicycle and pedestrian crossing enhancements. Detailed project evaluation scores are provided in **Appendix E**.

Multimodal Roadway Projects (Continued)

All other project categories, including the Traffic Program, the Neighborhood Traffic Management Program (NTMP), Bridge Repairs, Advanced Mobility, Trails, Studies and Other Citywide Programs are prioritized outside the TMP. These other programs are funded through funding "pools" allowing the City flexibility to respond to the most pressing needs each year.

SMOKY HILL ROAD IMPROVEMENTS

The Smoky Hill Road Corridor Study recommends a six-lane cross-section with sidewalks and detached multiuse sidepaths where space/ROW allows, as well as targeted intersection improvements. The three-mile section from Buckley Road to Liverpool Street is estimated to cost $52.3 million to construct (2022). The Fiscally Constrained Plan recommends a strategic approach to funding the corridor improvements: Street Funds in 2023 would be used for preliminary and final design, and 2024 funds would be used to acquire the right of way needed to make the corridor improvements. Early action intersection improvements at Buckley Road and at Orchard Road/Himalaya could be constructed with City funds to address the most immediate needs in 2025. The City will pursue federal funding through DRCOG to support completion of the remainder of the corridor. With a $20 million allocation of City funds, if the City is successful in pursuing federal funds, the full project could be constructed in 2027.

COLORADO BOULEVARD IMPROVEMENTS

The Colorado Boulevard Multimodal Corridor Study recommends a three-lane vehicular section for Colorado Boulevard (one lane in each direction with a center lane for left turns), with enhanced bicycle and pedestrian facilities. Through the TMP development process, there was considerable support for providing separation for bicyclists and pedestrians from motor vehicles. The Fiscally Constrained Plan recommends an early action project for the section between Dry Creek Road and Arapahoe Road; this improvement will reconfigure the street to a three-lane vehicular section, and bicycle and pedestrian facilities would be raised and separated from vehicular traffic, providing comfortable walking and biking access to Newton Middle School and other corridor destinations. The details of the design will be established in 2023, with construction anticipated in 2024. Improvements along the remainder of the corridor are anticipated to be constructed by 2030. The design for the remainder of the corridor may be adjusted based on the effectiveness of the early action improvements.

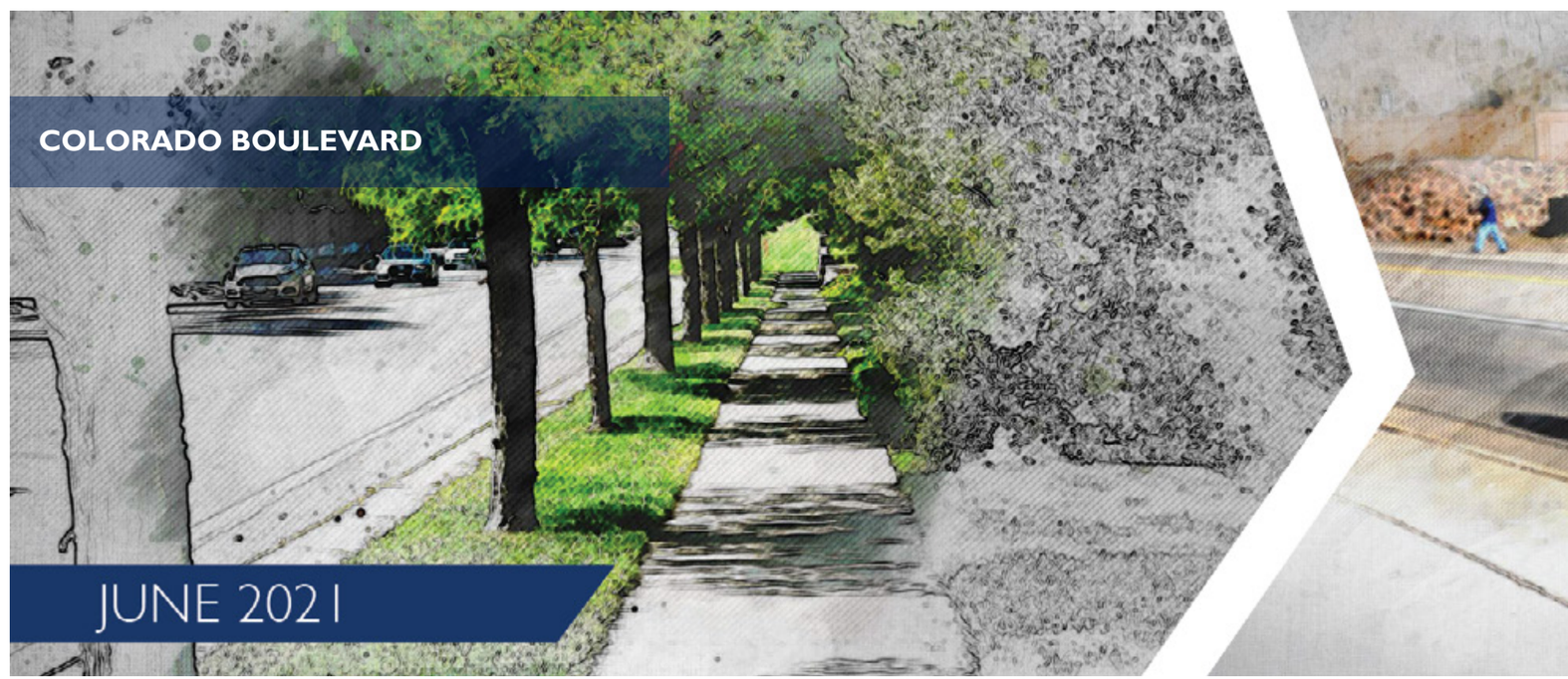
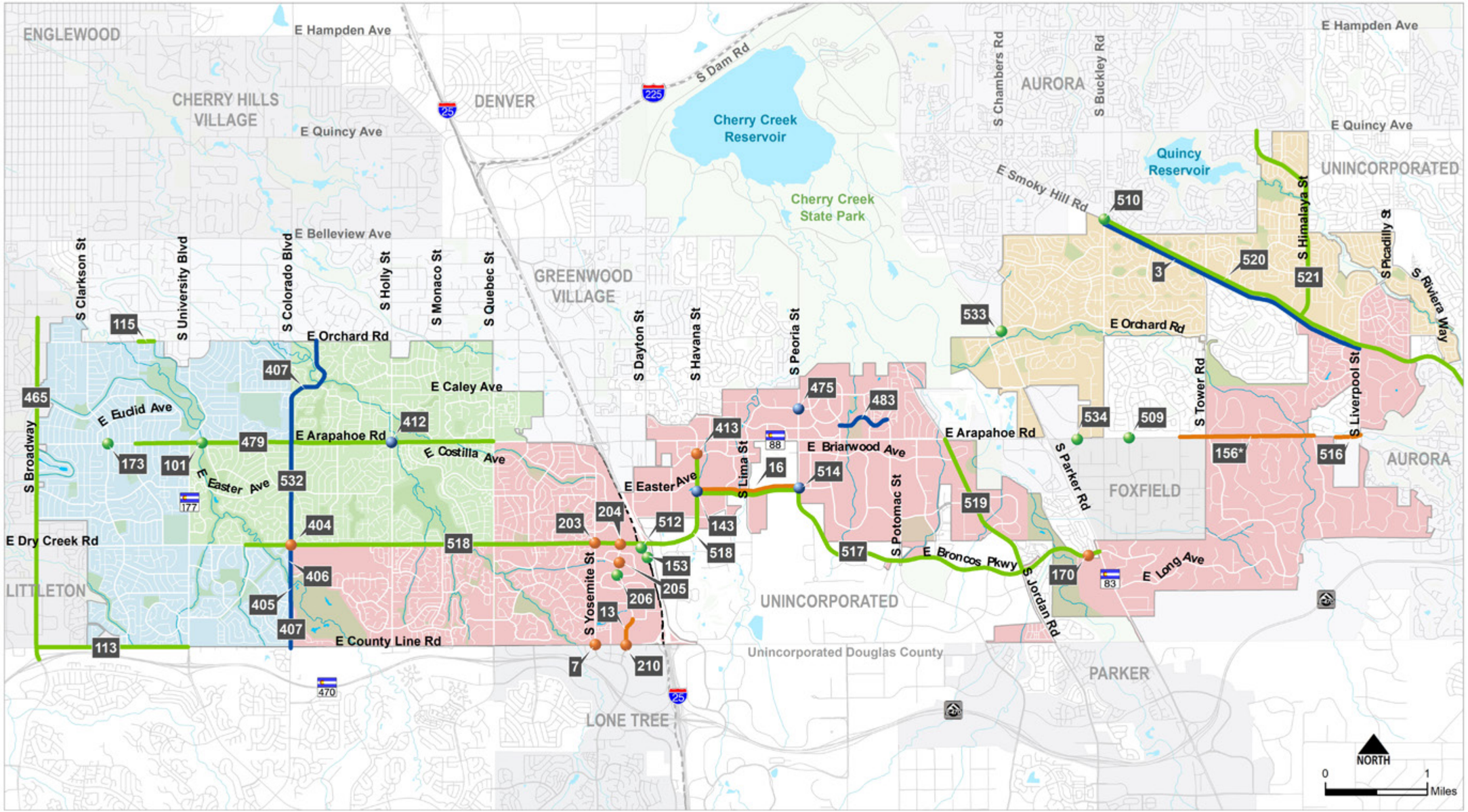


FIGURE 13: FISCALLY CONSTRAINED MULTIMODAL ROADWAY PROJECTS



Legend

- XXX Project ID
- In Progress Projects
- 2030 Fiscally Constrained Plan
- 2040 Fiscally Constrained Plan *Partially Funded
- Roads
- Light Rail
- Rivers/Streams
- Lakes
- Parks

Council Districts

- District 1
- District 2
- District 3
- District 4

TABLE 5: FISCALLY CONSTRAINED PLAN: MULTIMODAL ROADWAY PROJECTS

ID	Name	Location	Description	Cost (2021$)	YOE*	YOE Cost	Assumptions
IN- PROGRESS PROJECTS							
509	Buckley Road	at Arapahoe Road	Intersection turn lanes				
510	Buckley Road	at Smoky Hill Road	Intersection improvements				
113	County Line Road	University to Broadway	Widen to 4 lanes and signalize County Line Road and Clarkson				
153	Dry Creek Road	Chester Street to Inverness Drive East	Add eastbound through lane, intersection improvements, sidewalk improvements				
512	Dry Creek Road	at southbound I-25 ramp	Intersection improvements				
101	Arapahoe Road	at Big Dry Creek (east of University)	Replace structure				
173	Arapahoe Road	at Clarkson Street	Install traffic signal and provide multimodal connection north and south of Arapahoe Road				
115	Orchard Road	Franklin to High Line Canal	Widen to 3-lane section and new sidewalk (includes curb, gutter, and sidewalk west to Cherrywood Cir)				
206	Chester Street	at Mineral Circle	Signalize intersection				
465	Broadway	Highlands Ranch Parkway into Denver (northern terminus to be determined)	Corridor Study to assess feasibility of mobility improvements (such as enhanced transit) and to support local business and community identity				
517	Easter Avenue/ Broncos Parkway	Havana Street to Parker Road	Corridor Study (with Arapahoe County) to identify capacity, operational, safety, and multimodal improvements				
479	Arapahoe Road	Franklin St to Quebec St	Adaptive Signal Timing				
518	Dry Creek Road / Havana Street	Adams Street to Briarwood Avenue	Adaptive Signal Timing				
519	Jordan Road	Broncos Pkwy to Arapahoe Rd	Adaptive Signal Timing				
520	Smoky Hill Road	Buckley Rd to Versailles	Adaptive Signal Timing				
521	Himalaya Street	Smoky Hill Rd to Quincy Ave	Adaptive Signal Timing				
533	Parker Rd	at Orchard Rd	Interim intersection restriping				
534	Arapahoe Rd	at Lewiston Way	Restriping to address bottleneck				

*YOE = Year of Expenditure; the year when funding is anticipated to complete the project; in many cases, funds would come from more than one year, and design would occur in a preceding year

ID	Name	Location	Description	Cost (2021$)	YOE*	YOE Cost	Assumptions
2030 FISCALLY CONSTRAINED PLAN							
532	Colorado Boulevard	Dry Creek Road to Arapahoe Road	Early action street reconfiguration to 3-lane section (one lane in each direction with a center lane for left turns) with bicycle and pedestrian accommodation behind the curb	$5,500,000	2024	$6,000,000	
3	Smoky Hill Road	Buckley Road to Liverpool Street	Widen to 6 lanes, intersection improvements, safety enhancements	$52,300,000	2027	$67,300,000	$20 M allocation; remainder assumed to be TIP funding and Aurora partnership
475	Peoria Street	at Caley Avenue	Intersection improvements such as roundabout to improve safety	$1,500,000	2025	$1,800,000	
143	Havana Street	at Easter Avenue	Reconstruct - Continuous Flow Intersection and bike/ped improvements	$10,530,000	2025	$12,500,000	$11 M allocation of committed Fund Balance; remaining $1.5 M in TIP funding or Arapahoe County partnership
514	Easter Avenue	at Peoria Street	Intersection improvements to facilitate east-west travel pattern	$7,500,000	2028	$10,100,000	Assume $1M contribution from Centennial
412	Holly Street	at Arapahoe Road	New southbound to westbound right turn lane	$500,000	2028	$670,000	
406	Colorado Boulevard	Links Parkway to Dry Creek Road	Widen roadway to accommodate vehicle, bicycle, and pedestrian infrastructure on east side	$4,600,000	2029	$6,400,000	
405	Colorado Boulevard	Mineral Avenue to Links Parkway	Widen roadway to accommodate vehicle, bicycle, and pedestrian infrastructure on east side	$3,920,000	2030	$5,700,000	
407	Colorado Boulevard	County Line Road to to Mineral Avenue and Arapahoe Road to Orchard Road	Restriping and buffered bike lane installation	$815,000	2030	$1,200,000	
483	Peakview Avenue	Revere to Potomac	Restriping to accommodate bike lanes, parking and event curbside management; intersection improvements at Vaughn and Uvalda such as roundabouts to improve safety	$1,500,000	2030	$2,200,000	
204	Dry Creek Road	at Chester Street	Future intersection capacity improvements	$1,500,000	2031	$2,300,000	Assume Centennial funds 80%

*YOE = Year of Expenditure; the year when funding is anticipated to complete the project; in many cases, funds would come from more than one year, and design would occur in a preceding year

TABLE 5: FISCALLY CONSTRAINED PLAN: MULTIMODAL ROADWAY PROJECTS (CONTINUED)

ID	Name	Location	Description	Cost (2021$)	YOE*	YOE Cost	Assumptions
2040 FISCALLY CONSTRAINED PLAN							
13	Chester Street	County Line Road to Otero	Median and access improvements	$350,000	2031	$530,000	
413	Havana Street	at Costilla Avenue/ Briarwood Avenue	New eastbound to southbound right turn lane	$500,000	2031	$600,000	
203	Dry Creek Road	at Yosemite Street	Future intersection capacity improvements	$1,500,000	2032	$2,400,000	Assume Centennial funds 80%
210	County Line Road	at Chester Street	Future intersection capacity improvements	$1,000,000	2032	$1,600,000	Assume Centennial funds 80%
516	Arapahoe Road	Grandview High School to Liverpool	Future intersection capacity improvements	$1,500,000	2033	$2,500,000	This project is a necessary first phase before project 156 (which scored higher) can be completed; assume Centennial funds 50%
205	Chester Street	at Panorama Drive	Add southbound dual left turn lanes and add receiving lane on east leg	$1,000,000	2033	$1,700,000	Assume Centennial funds 80%
170	Broncos Parkway	near Tagawa Gardens	Potential access improvements	$700,000	2033	$1,200,000	
404	Colorado Boulevard	at Dry Creek Road	Widen west side of north leg to better align with southbound lanes	$830,000	2034	$1,400,000	
16	Easter Avenue	Havana to Peoria	Widen to 6 lanes	$9,590,000	2037	$18,800,000	Assume Centennial funds 50%
7	County Line Road	at Yosemite Street	New southbound to westbound right turn lane	$2,000,000	2038	$4,100,000	Assume Centennial funds 50%
156	Arapahoe Road	Chapparal to Himalaya Way	Widen to 6 lanes and add sidewalks	$14,000,000	2040	$31,200,000	Only partial funding for this project

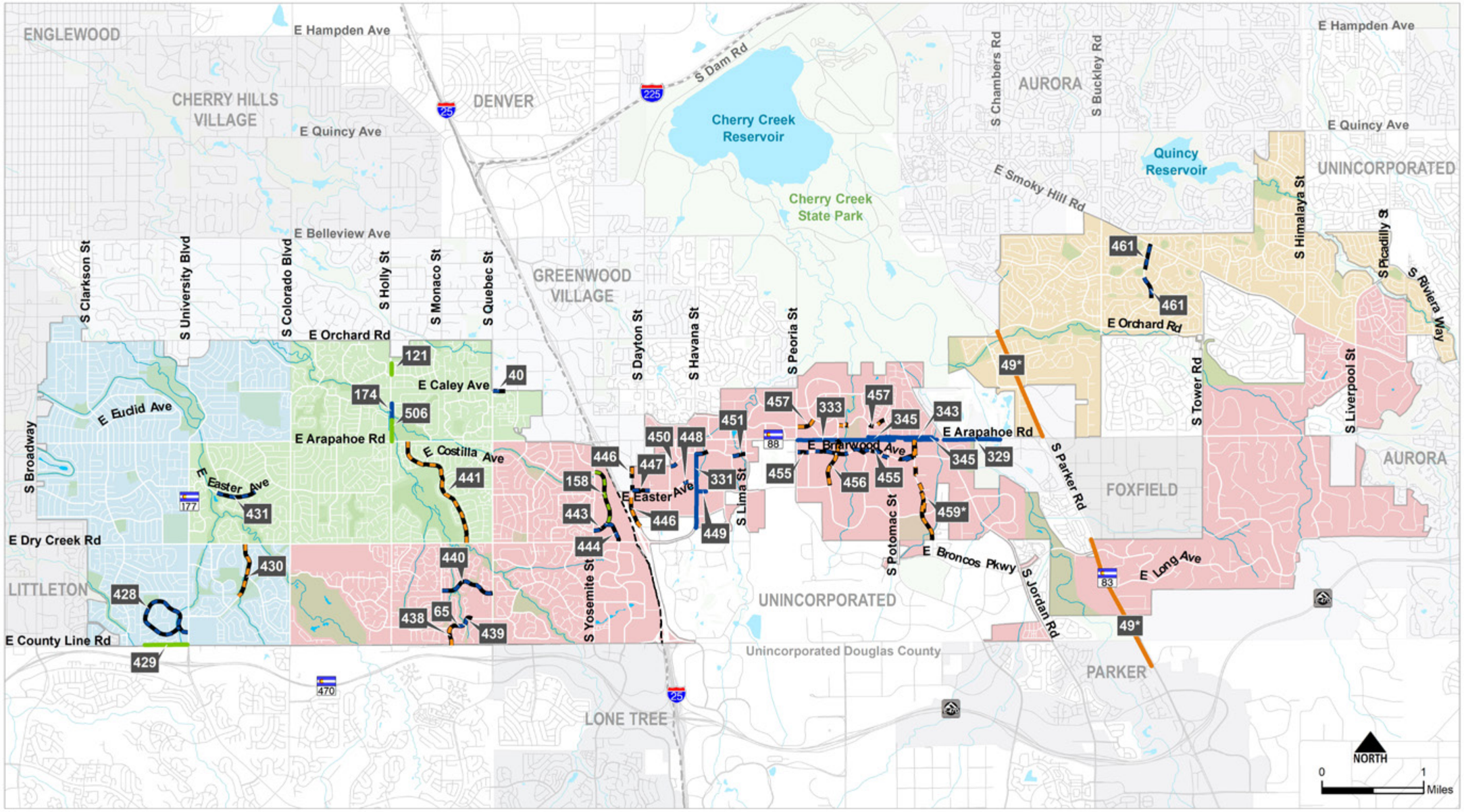
*YOE = Year of Expenditure; the year when funding is anticipated to complete the project; in many cases, funds would come from more than one year, and design would occur in a preceding year

Sidewalk Projects

The sidewalk projects are subdivided into two categories: arterial sidewalks and neighborhood sidewalks. The revenues allocated to sidewalks are split equally between these two subcategories to ensure that critical gaps in the arterial sidewalk network are filled, while attention is also paid to sidewalk gaps that connect neighborhoods and often provide walking access to schools and parks. Centennial is currently working on four sidewalk projects (three along arterial streets and one neighborhood sidewalk) that will be constructed in the near term.

The TMP identifies 30 arterial sidewalk projects and 34 neighborhood sidewalk projects (in addition to those that are in progress), totaling nearly $22 million in today's dollars. With approximately $13 million allocated to sidewalk projects, 8 arterial sidewalk and 21 neighborhood sidewalk projects could be constructed when accounting for construction cost inflation over time. The fiscally constrained Sidewalk Projects are listed in priority order in **Tables 6** and **7** and shown on **Figure 14**. Detailed project evaluation scores are provided in **Appendix E**.

FIGURE 14: FISCALLY CONSTRAINED SIDEWALK PROJECTS



Legend

XXX Project ID

*Partially Funded

Fiscally Constrained Arterial Sidewalk Projects
- In Progress Projects
- 2030 Fiscally Constrained Plan
- 2040 Fiscally Constrained Plan

Fiscally Constrained Neighborhood Sidewalk Projects
- In Progress Projects
- 2030 Fiscally Constrained Plan
- 2040 Fiscally Constrained Plan

Council Districts
- District 1
- District 2
- District 3
- District 4

TABLE 6. FISCALLY CONSTRAINED PLAN: ARTERIAL SIDEWALK PROJECTS

ID	Name	Location	Description	Cost (2021$)	YOE*	YOE Cost	Assumptions
IN- PROGRESS PROJECTS							
429	County Line Road	Phillips Avenue to University Boulevard	Add missing sidewalk on the north side				
121	Holly Street	Fair to Maplewood	Widen existing sidewalk on east side from 3' width to 5' width				
506	Holly Street	Arapahoe Road to existing HAWK (north of Arapahoe Road)	Add 6' sidewalk to east side				
ID	**Name**	**Location**	**Description**	**Cost (2021$)**	**YOE***	**YOE Cost**	**Assumptions**
2030 FISCALLY CONSTRAINED PLAN							
345	Arapahoe Road	North side of Arapahoe Road from S Vaughn Street to S Carson Street	Add sidewalk on the north side	$470,000	2024	$530,000	
333	Arapahoe Road	Potomac to Jordan	Add sidewalk on the south side	$700,000	2026	$860,000	
343	Arapahoe Road	South side of Arapahoe from S Abilene Way to S Carson Street	Add sidewalk on the south side	$240,000	2026	$300,000	
449	Easter Avenue	Havana Street to Lima Street	Add missing sidewalk sections on the north and south sides	$47,000	2026	$60,000	
174	Holly Street	Weaver Avenue to existing HAWK (north of Arapahoe Road)	Add 6' sidewalk to the east side	$110,000	2027	$140,000	
331	Havana Street	Geddes to Briarwood	Add sidewalk on the east side	$540,000	2028	$730,000	
329	Arapahoe Road	South side of Arapahoe from S Jordan Road to S Chambers Way	Add sidewalk on the south side	$340,000	2029	$480,000	
ID	**Name**	**Location**	**Description**	**Cost (2021$)**	**YOE***	**YOE Cost**	**Assumptions**
2040 FISCALLY CONSTRAINED PLAN							
49	Parker Road	Orchard Road to Valley Hi Drive (within Centennial boundaries)	Add or widen sidewalks on both sides	$3,100,000	2040	$6,800,000	Only partial funding for this project

*YOE = Year of Expenditure; the year when funding is anticipated to complete the project; in many cases, funds would come from more than one year, and design would occur in a preceding year

TABLE 7. FISCALLY CONSTRAINED PLAN: NEIGHBORHOOD SIDEWALK PROJECTS

ID	Name	Location	Description	Cost (2021$)	YOE*	YOE Cost	Assumptions
IN- PROGRESS PROJECTS							
158	Alton Way	Yosemite Street/ Briarwood Way to Alton Court	Add 5' minimum sidewalks to the east side				
ID	**Name**	**Location**	**Description**	**Cost (2021$)**	**YOE***	**YOE Cost**	**Assumptions**
2030 FISCALLY CONSTRAINED PLAN							
443	Alton Way	Alton Court to Yosemite Street/ Xanthia Street	Add missing sidewalk on north side	$76,000	2023	$83,000	
444	Alton Court	Alton Way to Dry Creek Road	Add missing sidewalk on the west side	$115,000	2023	$125,000	
439	Otero Avenue	Newport Way to St. Thomas More Church	Add missing sidewalk on the south side	$60,000	2023	$65,000	
65	Niagara Street	Newport Way to Newport Court	New sidewalk on north side of S Niagara Street and connection to Phillips Avenue walking path	$61,000	2023	$66,000	
448	Easter Avenue	west of Havana Street	Add missing sidewalk on the south side	$25,000	2023	$27,000	
455	Briarwood Avenue	Peoria Street to Blackhawk Street	Add missing sidewalk sections on the east and west sides	$534,000	2025	$630,000	
461	Telluride Street	Powers Drive to Smoky Hill Road	Add missing sidewalk sections on the east and west sides	$245,000	2025	$290,000	
450	Costilla Avenue	Fulton Street to the east	Add missing sidewalk on the south side	$34,000	2025	$40,000	
431	Easter Avenue	Elizabeth Street to Columbine Way	Add missing sidewalk on the south side	$200,000	2026	$250,000	
440	Mineral Avenue	Monaco Street to Quebec Street	Add missing sidewalk on the north side	$292,000	2027	$380,000	
428	Otero Circle/ Phillips Circle	University Boulevard to the west	Add missing sidewalk along outside of Otero Circle/Phillips Circle	$590,000	2029	$830,000	
447	Easter Avenue	Clinton Street to Easter Lane	Add missing sidewalk on the north side	$87,000	2029	$120,000	
451	Briarwood Avenue	Havana Street to Lima Street	Add missing sidewalk sections on the south side	$124,000	2029	$170,000	
40	Caley Avenue	east of Quebec Street	Add detached 8' sidewalk on the south side	$74,000	2030	$110,000	

*YOE = Year of Expenditure; the year when funding is anticipated to complete the project; in many cases, funds would come from more than one year, and design would occur in a preceding year

TABLE 7.
FISCALLY CONSTRAINED PLAN: NEIGHBORHOOD SIDEWALK PROJECTS (CONTINUED)

ID	Name	Location	Description	Cost (2021$)	YOE*	YOE Cost	Assumptions
2040 FISCALLY CONSTRAINED PLAN							
430	Adams Street	Dry Creek Road to north of Detroit Street	Add missing sidewalk on the west side	$279,000	2031	$430,000	
456	Revere Parkway	Easter Avenue to Arapahoe Road	Add missing sidewalk on the east side and short section of missing sidewalk on the west side	$234,000	2032	$370,000	
441	Homestead Parkway	Dry Creek Road to Arapahoe Road	Add missing sidewalk on west side	$669,000	2036	$1,260,000	
446	Clinton Street	Costilla Avenue to south of Geddes Avenue	Add missing sidewalk sections on the east and west sides	$246,000	2037	$480,000	
438	Niagara Street	County Line Road to Niagara Way	Add missing sidewalk on the west side	$92,000	2038	$190,000	
457	Peakview Avenue	Peoria Street to Potomac Street	Add missing sidewalk sections on the north and south sides	$178,000	2039	$380,000	
459	Blackhawk Street	Broncos Parkway to Arapahoe Road	Add missing sidewalk sections on the east and west sides	$546,000	2040	$1,200,000	

*YOE = Year of Expenditure; the year when funding is anticipated to complete the project; in many cases, funds would come from more than one year, and design would occur in a preceding year

Bicycle & Pedestrian Projects

Two significant bicycle and pedestrian projects are currently in progress in Centennial. The Centennial Link Trail extends nearly the full width of the City and will serve as a spine for east-west bicycle and pedestrian travel and recreation. The Centennial Link Trail uses of some existing trails and will be a combination of on-street and off-street facilities. The Lone Tree Creek Trail is currently being designed. The trail will provide a north-south trail connection through central Centennial and a connection to the Centennial Link Trail.

The TMP identifies 89 Bicycle & Pedestrian projects (in addition to the projects that are in progress) totaling over $68 million in today's dollars. With a Street Fund allocation of $3 million over 18 years, four additional projects are anticipated in the Fiscally Constrained Plan, as shown on **Figure 15** and listed in **Table 8**. Bicycle and pedestrian improvements are also a part of many of the multimodal roadway projects. Additional bicycle and pedestrian projects are likely to be constructed with other funding sources such as Open Space funds. There are also opportunities for on-street bicycle projects that involve restriping to be completed as part of routine pavement overlay projects. Detailed project evaluation scores are provided in **Appendix E**.

Trail Projects

Off-street multiuse trail projects are important components of Centennial's bicycle and pedestrian network. Trail projects serve both transportation and recreational purposes. Typically, trail projects are funded through the Parks, Trails, and Open Space program; therefore, the TMP does not include trail projects as part of the Fiscally Constrained Plan. However, trail projects have been evaluated based on the transportation goals and evaluation criteria and are listed in priority order (from a transportation perspective) in **Appendix E**.

FIGURE 15: FISCALLY CONSTRAINED BICYCLE & PEDESTRIAN PROJECTS

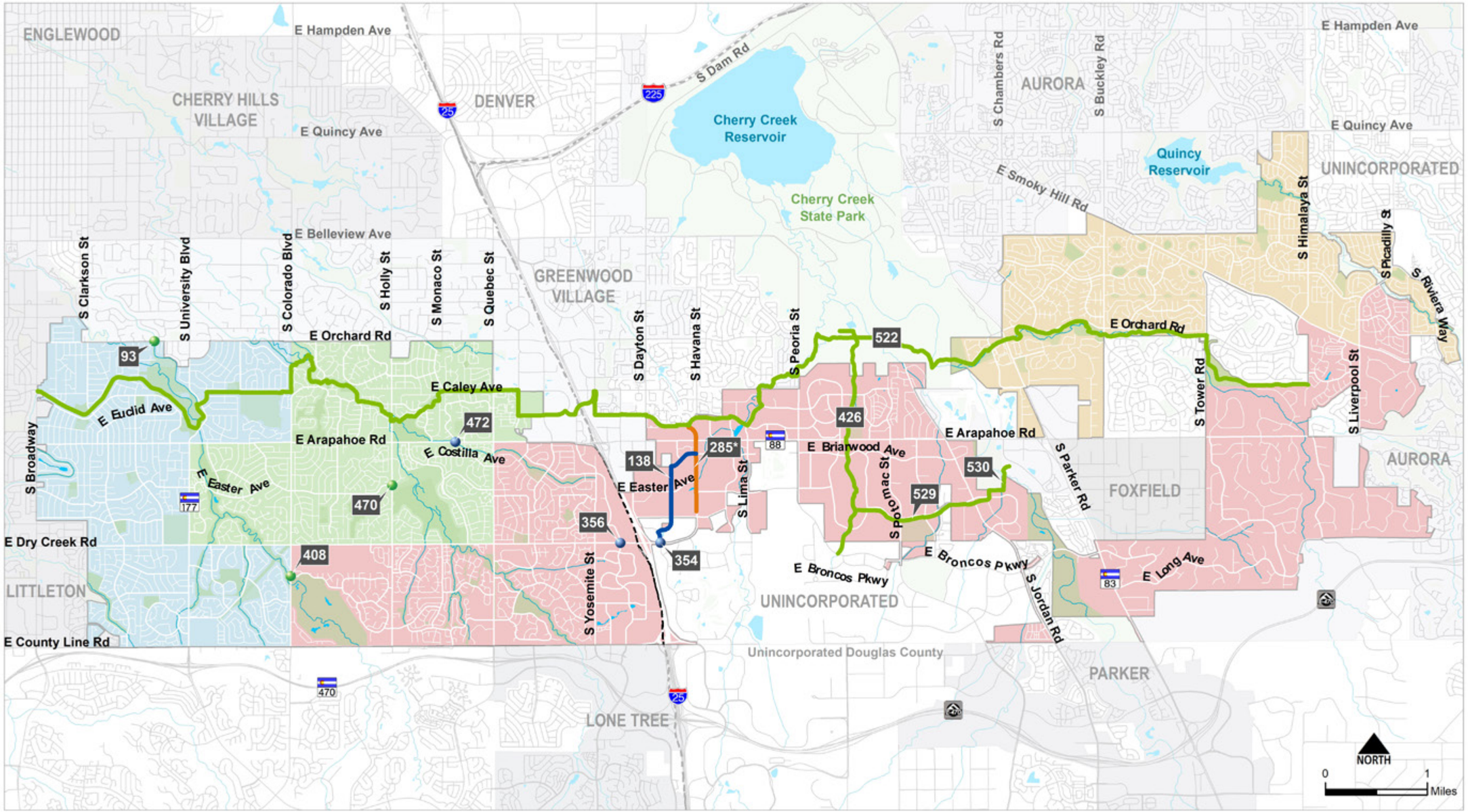


TABLE 8. FISCALLY CONSTRAINED PLAN: BICYCLE & PEDESTRIAN PROJECTS

ID	Name	Location	Description	Cost (2021$)	YOE*	YOE Cost	Assumptions
IN- PROGRESS PROJECTS							
93	Orchard Road	at High Line Canal Trail (west of University Boulevard)	Curb extensions to narrow crossing distance, reset RRFB and bridge repair				
408	Colorado Boulevard	Links Parkway/ Maplewood Way, Lake Circle S Big Dry Creek Trail	At-grade crossing improvement				
470	Holly Street	at Easter Avenue	At-grade crossing improvement, HAWK and curb ramp improvements				
426	Lone Tree Creek Trail	Broncos Parkway to Cherry Creek State Park	Major trail				
522	Centennial Link Trail	Broadway to Himalaya Court	Major trail				
529	Fremont Avenue Trail	Tuscon Way to Jordan Road	Sidepath on the south side				
530	Fremont Avenue Trail	Jordan Road to Cherry Creek Trail	Major Trail				
ID	**Name**	**Location**	**Description**	**Cost (2021$)**	**YOE***	**YOE Cost**	**Assumptions**
2030 FISCALLY CONSTRAINED PLAN							
138	Costilla/ Fulton/ Clinton	Havana Street to Dry Creek Road	Modify roadway section to stripe buffered bike lanes	$45,000	2024		Assume use of Open Space funds
472	Arapahoe Road	at Little Dry Creek Trail	At-grade crossing improvement such as HAWK to replace closed underpass	$300,000	2024	$340,000	
356	Dry Creek Road	West of I-25 (Chester Street)	Pedestrian overpass	$6,000,000	2025	$7,400,000	Centennial contribution of $200,000
354	Dry Creek Road	East of I-25 (S Clinton Street)	Pedestrian overpass	$6,000,000	2027	$7,700,000	Centennial contribution of $200,000
ID	**Name**	**Location**	**Description**	**Cost (2021$)**	**YOE***	**YOE Cost**	**Assumptions**
2040 FISCALLY CONSTRAINED PLAN							
285	Havana Street	E Peakview Avenue to ending just north of E Geddes Avenue	Sidepath	$5,350,000	2040	$11,900,000	Only partial funding for this project

*YOE = Year of Expenditure; the year when funding is anticipated to complete the project; in many cases, funds would come from more than one year, and design would occur in a preceding year

Transportation Program Funding

Additional transportation programs are needed beyond the capital projects prioritized in the TMP. All other project categories, including the Traffic Program, the Neighborhood Traffic Management Program (NTMP), Bridge Repairs, Mobility Hubs, Studies, Street Rehabilitation and Other Citywide Programs, are prioritized outside the TMP. These other programs are included in the Fiscally Constrained Plan and are funded through funding "pools" as detailed in **Table 9**. Decisions about how the funding in each of these program areas is used is determined annually. **Appendix E** includes a list of specific project needs identified through the TMP process that fall in one of these program areas.

TABLE 9. TRANSPORTATION PROGRAM FUNDS

Program	Typical Projects	Revenue Forecast (2023 through 2040)
Traffic Program	Traffic signal installation, signal timing and coordination, traffic signal upgrades, pavement markings	$15,300,000
Neighborhood Traffic Management Program	Traffic calming measures to reduce speeds and cut-through traffic	$7,400,000
Bridge Repairs	Repairs to address structural deficiencies	$6,000,000
Advanced Mobility	Mobility hubs, EV charging stations, connected and automated vehicles, microtransit; typically in partnership with property owner	$3,000,000
Studies	Corridor studies to explore the feasibility of various transportation improvement alternatives	$670,000
Other Citywide	Building maintenance and improvements, CIP management, street lights	$24,400,000
Street Rehabilitation	Pavement overlays, street reconstruction	$211,800,000

Studies

Several corridor studies were identified through the TMP development. These studies will identify in more detail the transportation needs of the corridor and explore the feasibility of various transportation improvement alternatives. **Table 10** provides a list of the recommended studies. The first two listed (Broadway and Easter/Broncos Parkway) are funded and planned to begin in 2022. These studies are not included on the fiscally constrained maps; the timing of these studies will be determined annually during the budgeting process.

TABLE 10. RECOMMENDED TRANSPORTATION STUDIES

ID	Name	Location	Description
467	Broadway	C-470 to Hampden	Corridor Study to assess the feasibility of mobility improvements (such as enhanced transit) and to support local business and community identity
517	Easter Avenue/Broncos Parkway	Havana Street to Parker Road	Corridor Study (with Arapahoe County) to identify capacity, operational, safety, and multimodal improvements
38	Holly Street	County Line Road to Orchard Road	Corridor Study to consider multimodal improvements; tie into C-470 trail to south & Orchard Road
385	Peakview Avenue	Dayton Street to Revere Parkway	Study to evaluate the realignment of Peakview to be more of a thoroughfare, including potential widening and multimodal improvements
515	Bicycle and Pedestrian Plan	Citywide	Develop a citywide Bicycle and Pedestrian Plan
400	Arapahoe Road	Broadway to Liverpool Street	Corridor Study to assess the feasibility of mobility improvements (such as enhanced transit)
403	Yosemite Street	County Line Road to Arapahoe Road	Corridor Study to assess the feasibility of multimodal mobility improvements (such as a multiuse path or two-way separated bike lanes) and to support local businesses, community vitality, and transit access
423	County Line Road	Quebec Street to Yosemite Street	Study corridor capacity improvements and feasibility and multimodal mobility improvements
424	Briarwood Avenue	Havana Street to Jordan Road	Study to evaluate the realignment of Briarwood to be more of a thoroughfare, including potential widening, extension through golf course (with redevelopment) and multimodal improvements
425	Orchard Road	Parker Road to Buckley Road	Corridor study to identify multimodal, operational, and safety improvements
511	Buckley Road	Arapahoe Road to I-70	Corridor Study (with Arapahoe County and other partners) to assess the feasibility of mobility improvements (such as enhanced transit) and to support local businesses and community identity
466	University Boulevard	C-470 to Orchard Road	Corridor Study (with CDOT and other partners) to assess the feasibility of mobility improvements (such as enhanced transit) and streetscape improvements

- IN PROGRESS PROJECT
- CENTENNIAL PROJECT
- CENTENNIAL LED PROJECT WITH PARTNER(S)
- PARTNER LED PROJECT WITH CENTENNIAL PARTICIPATION

New State and Federal Transportation Funds

Colorado Senate Bill 21-260 – Sustainability of the Transportation System

Colorado Senate Bill 21-260, Sustainability of the Transportation System, passed during the 2021 legislative session and will provide nearly $5 billion in new funding for transportation in Colorado. Approximately $3.8 billion will be generated by new enterprises and fees, with an additional $1.5 billion expected to come from the state general fund and stimulus funding.

Senate Bill 21-260 creates the following new enterprises:

Community Access Enterprise – within the Colorado Energy Office (CEO) to support the widespread adoption of EVs. The enterprise is authorized to impose a community access retail delivery fee to fund its operations.

Clean Fleet Enterprise – within the Colorado Department of Public Health and Environment (CDPHE) to support the use of EVs in private and government fleets. The enterprise is authorized to impose a clean fleet fee on retail deliveries and rides provided by Transportation Network Company (TNCs). The enterprise is also authorized to issue grants, loans, and rebates to incentivize the adoption of EVs in fleets.

Clean Transit Enterprise – within CDOT to support public transit electrification. The enterprise is authorized to impose a clean fleet fee on retail deliveries and rides provided by TNCs. The enterprise is also authorized to issue grants, loans, and rebates to support the electrification of public transit.

Nonattainment Area Air Pollution Mitigation Enterprise – within CDOT to mitigate transportation-related emissions in ozone non-attainment areas. The enterprise is authorized to impose an air pollution mitigation fee on retail deliveries and rides provided by TNCs.

The amounts of the various fees have not been determined; some of the funds will be distributed via the mechanisms outlined for the Highway Users Tax Fund. The City should continue to monitor these new enterprise funds and opportunities to apply for funds from new grant programs.

Infrastructure Investment & Jobs Act/ Bipartisan Infrastructure Law

The $1.2 trillion Infrastructure Investment and Jobs Act (IIJA) is a combined piece of legislation that reauthorizes the surface transportation program previously authorized under the Fixing America's Surface Transportation (FAST) Act through FY 2026 and creates a 10-year federal infrastructure investment strategy. New transportation programs, formula and competitive, that could provide funding opportunities for the City of Centennial include the Carbon Reduction Program (formula), the formula / competitive transportation resiliency program called PROTECT, funding for EV charging infrastructure, the Active Transportation Infrastructure Investment Program, the Safe Streets and Roads for All grant program, the Healthy Streets Program to develop environmentally sustainable infrastructure, and the new National Infrastructure Project Assistance Grant program for freight projects to supplement the INFRA grant program. The IIJA also codifies the Rebuilding American Infrastructure with Sustainability and Equity (RAISE) Program and emphasizes projects with significant local or regional impact and continuing the trend observed in FY 21 awards to multimodal transportation facilities, trails, complete streets and resiliency projects.

Grant Application Preparedness

Several federal, state and local grant funding opportunities can provide supplemental funding for transportation improvement projects and increase the number of completed projects. The following provides a grant preparedness checklist documenting some of the key requirements of competitive grant applications and considerations to strategically match projects to grant opportunities. Many grants/ funding sources provide funding for a range of projects and/or for large projects that can consist of a group of smaller projects (e.g., corridor projects that combine elements of roadway design, bicycle and pedestrian facilities, transit elements and stormwater components).

Typical project categories include highways, streets, bridges, bicycle, pedestrian, transit, stormwater, parks and open space, environmental, freight, etc. Grants also typically specify the eligible funding uses, e.g., capital, planning, construction, operating, design, and administration. These project type and funding type categories are not mutually exclusive, and multiple project/funding types can be eligible under a single grant/funding source.

Common Grant Application Elements

Several grant application requirement elements are typically required for grants at the state, local and federal levels. Common application process requirements include:

- Attendance or participation in a pre-application training/meeting
- Application pre-submittal or review
- Inclusion of letters (letters of support, intent, partnership, financial commitment, etc.)
- Demonstration of external agency concurrence (e.g., CDOT, DRCOG, RTD)

Many grants also establish funding criteria, such as project cost minimums/maximums, grant request maximums, local match minimums and total federalized project dollar maximums. Having reliable cost estimates for potential projects makes it easier to quickly determine whether a project meets the funding eligibility.

Project cost estimates are commonly required for submittal as part of the grant application package. Other project-specific documentation commonly requested in grant applications includes:

- Cost estimates
- Project budget
- Project schedule or workplan
- Risk mitigation assessment

GRANT EVALUATION CRITERIA

The grant evaluation criteria vary across the range of potential grant/funding sources. The following categories are some commonly encountered evaluation criteria:

- Accessibility
- Affordability
- Air Quality/Emission Reductions
- Benefit Cost Ratio (BCA) > 1.0
- Congestion Relief
- Cost-Effectiveness
- Connectivity
- Diversity & Inclusion Considerations
- Economic Development
- Energy Benefits
- Engagement, Outreach, Collaboration, Support
- Environmental Benefits/Climate Change
- Environmental Justice
- Environmental Review/Permitting Complete
- Equity Considerations
- Health & Wellness
- Innovation
- Land Use
- Connectivity
- Livability & Quality of Life (QoL)
- Local Financial Commitment
- Local/Long-Term Planning
- Mobility
- Operating Cost Savings
- Project Implementation/Readiness
- Protection of Lands & Natural Resources
- Resiliency
- Resource Restoration/Protection
- Safety
- Travel Time Savings

There are several ways that grants require and/or suggest demonstrating that the proposed project meets evaluation criteria:

Benefit-Cost Analysis (BCA) Consistent with Federal BCA Guidance – The grant application requires or recommends a BCA completed in compliance with the Federal BCA Guidance. A BCA quantifies the present value of project costs and benefits relative to a baseline condition in which the grant project is not completed. The purpose of the BCA is to evaluate the project's cost-effectiveness by estimating a benefit-cost ratio for the project. The BCA should carefully document the assumptions and methodology used to produce the analysis, including a description of the baseline, the sources of data used to project the outcomes and the values of key input parameters.

Demonstration of Benefits – The application requires or recommends specific documentation demonstrating anticipated project benefits, BCA, an economic analysis, and/or documentation of evaluation analyses.

Application Narrative – The application narrative includes a qualitative or quantitative description of how the project meets grant evaluation criteria should be included in the application narrative.

Strategy Recommendations

Recommendations to support the vision and goals of the Centennial TMP are categorized by three primary tenets: physical, human and digital. Physical recommendations support the built environment and infrastructure that enhance the transportation system. Human-centered recommendations focus on the people – providing people with options for how to travel and enhancing quality of life. Digital recommendations focus on the technology, data, and future-ready strategies and policies to propel Centennial forward as an innovator and leading-edge city.

Within the three categories, the strategies are then broken out into four areas: planning, routine practices, programs, and projects. In many cases, the initial planning efforts and routine practices for a strategy provide the foundation needed to implement an associated program or project. Each strategy is linked to TMP goal areas to demonstrate alignment with the City's transportation vision. **Table 11** includes the supporting planning, routine practice, program, and project recommendations for the TMP.

THE BUILT INFRASTRUCTURE THAT KEEPS PEOPLE MOVING

THE MOBILITY SYSTEMS THAT GET PEOPLE WHERE THEY NEED TO GO

THE DATA SYSTEMS THAT IMPROVE OPERATIONS AND PEOPLE'S ACCESS TO MOBILITY

TABLE 11.TMP STRATEGIES

STRATEGY AREA	PROPOSED STRATEGY	PHYSICAL	HUMAN	DIGITAL/ OPERATIONS	SAFETY	FLEXIBLE MOBILITY	INNOVATION	FISCAL RESPONSIBILITY	EFFICIENCY & RELIABILITY	REGIONALISM & PARTNERSHIPS	ECONOMIC & COMMUNITY VITALITY
	MOBILITY: STREETS										
	Regularly investigate crash patterns and identify mitigation measures at critical locations including benefit-cost analysis	✓	✓		✓						
	Conduct corridor studies to identify specific improvement recommendations	✓		✓	✓	✓			✓		
	Continue to prioritize and support Vision Zero and other safety efforts	✓	✓		✓						
	Incorporate advanced mobility elements in all capital projects	✓		✓			✓				
	Explore implementing a policy to reduce speeds and speed limits on local streets to 25 miles per hour	✓			✓						✓
	Establish a Vision Zero policy		✓		✓						
	Integrate land use and transportation decisions to ensure transportation infrastructure can support travel demands associated with growth	✓						✓	✓		✓
	Develop a safety education campaign		✓		✓						
	Implement high-priority capital projects	✓			✓				✓		
	Implement crash mitigation measures at critical locations	✓			✓						
	Coordinate integration of fiber plan with roadway capital projects	✓		✓			✓				
	MOBILITY: BICYCLE AND PEDESTRIAN PLAN										
	Develop a citywide Bicycle and Pedestrian Plan	✓	✓			✓					
	Establish a complete streets policy to plan, design, build, and maintain streets to provide travel mode choice and to accommodate people of all ages and abilities	✓			✓	✓					✓
	Consider upgrading sidewalk projects to multiuse sidepaths (8'-10') where feasible to enhance multimodal connectivity	✓				✓					
	Consider bicycle and pedestrian facility opportunities with all maintenance/resurfacing projects		✓		✓	✓		✓			
	Host a station for Bike to Work Day		✓			✓					
	Coordinate with school districts to encourage walking and biking to school		✓			✓				✓	
	Implement bi-annual alternative modes marketing campaign to promote the use of alternative modes		✓			✓			✓	✓	✓
	Develop a safety educational campaign specific to interaction between bicyclists and motor vehicles		✓		✓	✓					
	Create a comprehensive wayfinding program (e.g., for bicyclists and trail users) consistent with the City's branding efforts	✓			✓	✓			✓		✓

LEGEND

- PLANNING
- ROUTINE PRACTICE
- PROGRAMS
- PROJECTS

TABLE 11. TMP STRATEGIES

STRATEGY AREA	PROPOSED STRATEGY	PHYSICAL	HUMAN	DIGITAL/ OPERATIONS	SAFETY	FLEXIBLE MOBILITY	INNOVATION	FISCAL RESPONSIBILITY	EFFICIENCY & RELIABILITY	REGIONALISM & PARTNERSHIPS	ECONOMIC & COMMUNITY VITALITY
MOBILITY: BICYCLE AND PEDESTRIAN PLAN											
	Implement high-priority sidewalk and other bicycle and pedestrian projects in coordination with the Trails and Recreation Plan recommendations	✓			✓	✓					
	Ensure sidewalk projects comply with ADA Transition Plan		✓		✓	✓					
MOBILITY: TRANSIT AND MOBILITY SERVICES											
	Study and conduct a microtransit pilot project for the area surrounding the Streets at SouthGlenn		✓	✓		✓	✓		✓		✓
	Assess opportunities to "buy-up" transit service to increase frequency and/or coverage			✓		✓					
	Monitor RTD's progress toward rolling out a grant funding program for local agencies to implement local transit service; apply for funding		✓	✓		✓	✓		✓	✓	✓
	Coordinate with CDOT/municipalities to preserve ROW and plan for BRT on Arapahoe Road, University Boulevard, and Broadway	✓							✓	✓	✓
	Develop a mobility hub framework with a fully integrated Equity Index in partnership with local/regional priorities	✓	✓			✓			✓	✓	✓
	Evaluate Mobility-on-Demand platforms			✓		✓	✓		✓		✓
	Adopt mobility hub framework	✓	✓			✓				✓	✓
	Adopt shared mobility data policy/specifications			✓		✓	✓		✓	✓	✓
	Develop a mobility amenities policy	✓		✓		✓				✓	✓
	Develop a micromobility policy (usage on City infrastructure)	✓	✓	✓	✓	✓	✓			✓	
	Develop Transportation Demand Management strategy		✓			✓				✓	✓
	Continue partnering with the DSTMA, RTD, and CDOT to promote the use of alternative modes for commuting		✓			✓			✓	✓	✓
	Build mobility and micromobility hubs in partnership with property owners	✓				✓	✓			✓	✓

LEGEND

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- ROUTINE PRACTICE
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TABLE 11.TMP STRATEGIES

STRATEGY AREA	PROPOSED STRATEGY	PHYSICAL	HUMAN	DIGITAL/ OPERATIONS	SAFETY	FLEXIBLE MOBILITY	INNOVATION	FISCAL RESPONSIBILITY	EFFICIENCY & RELIABILITY	REGIONALISM & PARTNERSHIPS	ECONOMIC & COMMUNITY VITALITY
CONNECTED / AUTOMATED											
	Develop and partner on an Intelligent Transportation System (ITS)/Connected/ Automated Vehicle (CAV) education program		◔				✓		✓	✓	
	Evaluate future regional Transportation Management Center (TMC) feasibility			◔	✓		✓			✓	
	Implement fiber strategy	◔					✓				
	Adopt Connected Road Classification System (CRCS)			◔			✓		✓	✓	
	Complete TMC data sharing agreements			◔	✓					✓	
	Develop CAV infrastructure and preparedness policy for automated delivery devices	◔	◔	◔							
	Complete CRCS mapping of the City to prepare for connected and automated vehicles			◔			✓			✓	
	Implement real-time operation program			◔	✓				✓		
	Identify CRCS investment corridors			◔			✓			✓	
	Develop a Phase 2 ITS and fiber strategy	◔		◔		✓	✓		✓		
	Pilot a Smart Work Zone project			◔	✓		✓		✓		
	Complete Transportation Management Center	◔		◔	✓		✓		✓		
SUSTAINABILITY											
	Adopt mobility energy productivity (MEP) metric			◔			✓		✓		✓
	Complete MEP baseline mapping of the City			◔			✓		✓		✓

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- PLANNING
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TABLE 11. TMP STRATEGIES

STRATEGY AREA	PROPOSED STRATEGY	PHYSICAL	HUMAN	DIGITAL/ OPERATIONS	SAFETY	FLEXIBLE MOBILITY	INNOVATION	FISCAL RESPONSIBILITY	EFFICIENCY & RELIABILITY	REGIONALISM & PARTNERSHIPS	ECONOMIC & COMMUNITY VITALITY
	ELECTRIFICATION										
	Implement EV Plan	✓					✓				
	Adopt EV infrastructure policy	✓	✓	✓			✓			✓	
	Create multi-family EV charger program		✓			✓	✓		✓	✓	✓
	Pilot a dynamic/inductive charger project	✓					✓		✓	✓	
	Build out high-priority EV stations	✓				✓	✓			✓	
	FUTURE-READY (2030 AND BEYOND)										
	Create an innovation pilot project CIP and budget (e.g., for drone delivery)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Adopt innovation pilot program policy	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Complete innovation pilot program projects from CIP			✓			✓				

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Centennial

TRANSPORTATION MASTER PLAN