



April 2024

# FINAL REPORT





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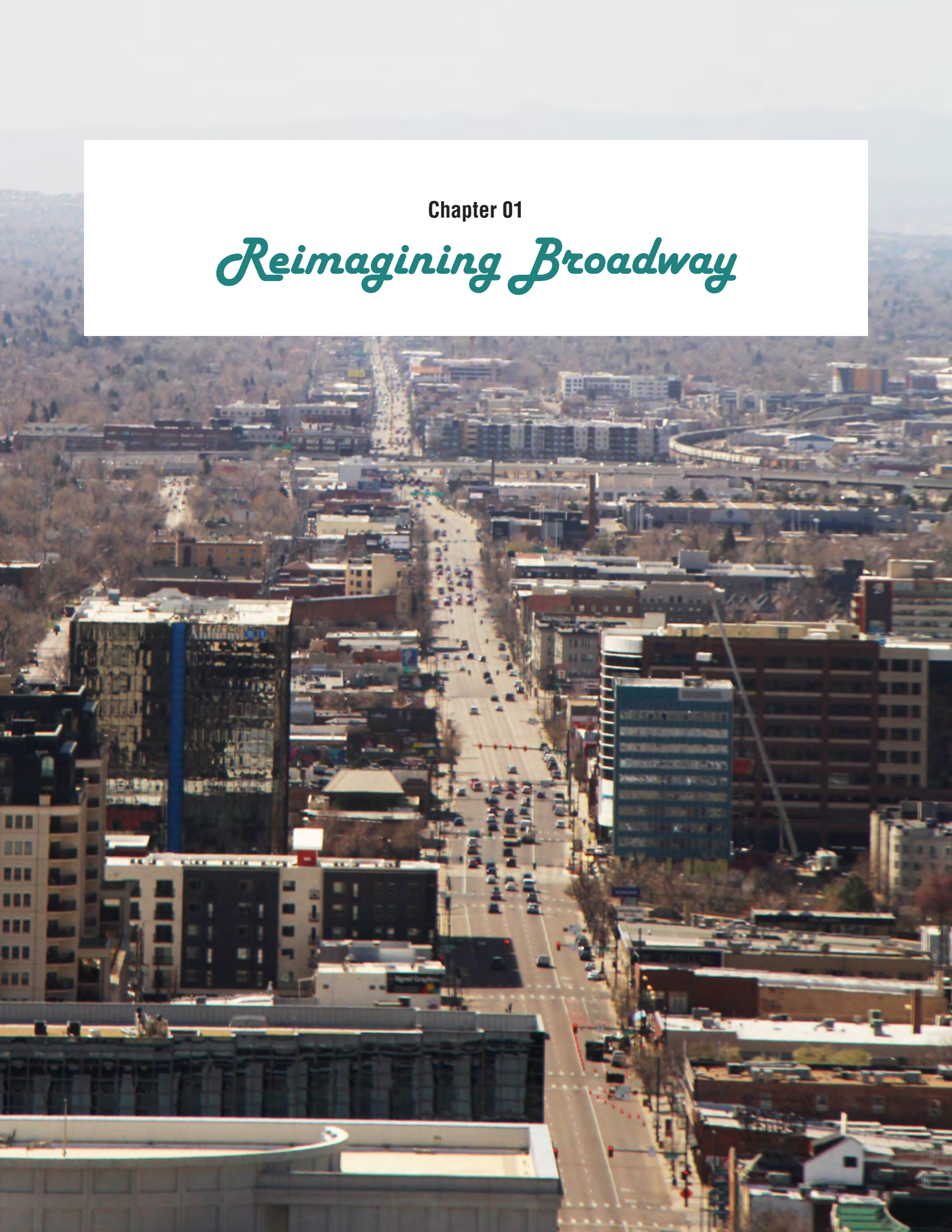
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Chapter 01

# Reimagining Broadway



# Introduction

The **Broadway Corridor Study** is an in-depth examination of transportation and land use challenges and opportunities along Broadway in the southern Denver Metro Area. The purpose of the study is to develop a shared vision and action plan to implement for an 11-mile stretch of Broadway from the Regional Transportation District (RTD) I-25 & Broadway Station to Highlands Ranch Parkway. The study arose out of a collective recognition that Broadway is a critical public asset that can be upgraded to enhance the communities along the corridor.

Over the years, the communities surrounding or adjacent to Broadway have developed plans and recommendations to enhance and guide future investment on the corridor within their jurisdictional boundaries. This study is a continuation and consolidation of those efforts, with the goal of creating a comprehensive vision and cohesive recommendations that span the length of the corridor. The study presents conceptual designs for improvements to the roadway and connecting facilities that would enhance transit operations, increase pedestrian and bicyclist comfort and convenience, and spur private investment. In addition, the study identifies next steps the jurisdictions can take to implement potential policy revisions to achieve the shared vision for Broadway.

## STUDY PARTNERS

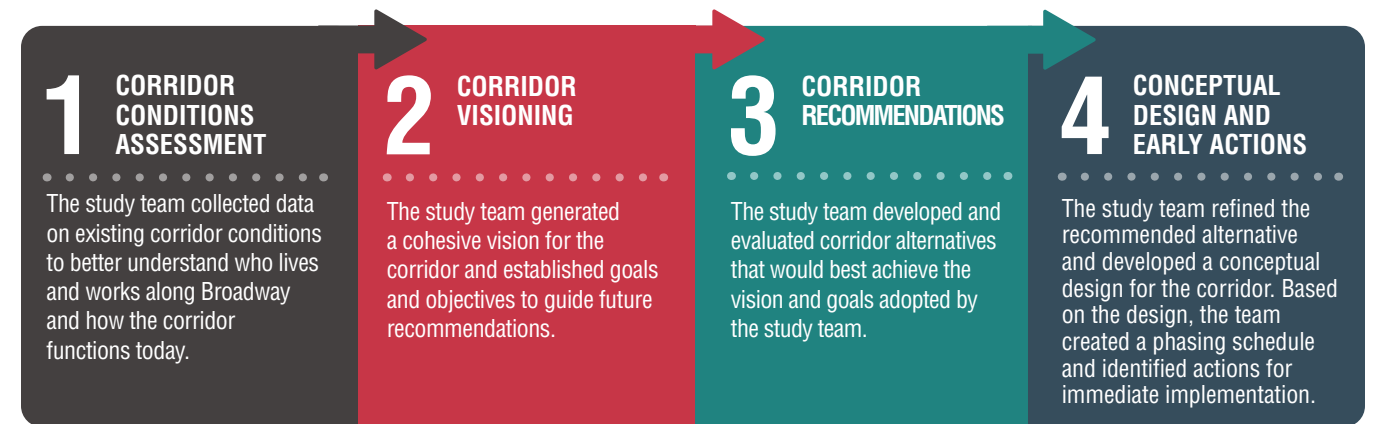
The City of Littleton led the collaborative study process, supported by the City and County of Denver, the City of Englewood, the City of Centennial, Arapahoe County, Douglas County, and Highlands Ranch Metro District. The study team collaborated to guide the study, review documentation and analysis, and provide input based on their jurisdictions' priorities and vision for Broadway.

Denver Regional Council of Governments (DRCOG), Colorado Department of Transportation (CDOT), and RTD participated in the study in an advisory capacity with valuable insight into how recommendations would impact their projects and operations. While local agencies manage the Broadway right-of-way, CDOT manages several facilities that intersect the corridor and RTD provides transit service via Route 0 and 0 Limited.

## STUDY PROCESS

The recommendations in this study are the result of an 18-month collaborative planning process that identified critical issues and needs along the corridor and developed a roadmap for future implementation and investment. The process was informed by a robust engagement process, including monthly project management team meetings, one-on-one interviews with key stakeholders, in-person and online public meetings, and attendance at community events and gathering spaces.

FIGURE 1: BROADWAY CORRIDOR STUDY PHASES



## STUDY AREA

Broadway is a north-south arterial road through the Denver Metro Area that starts in the City and County of Denver in the north and ends in Douglas County in the south. The study area includes Broadway from the I-25 & Broadway Station to Highlands Ranch Parkway and extends a half-mile on either side of the corridor, capturing the more immediate adjacent roadways, land uses, and services to Broadway. The influence area is a broader, two-mile buffer on either side of Broadway. The purpose of the Influence Area is to capture adjacent major north-south corridors, including Santa Fe Drive and University Boulevard, in the corridor evaluation, as proposed design changes on Broadway may impact the function of these corridors.

The study area varies significantly in terms of adjacent land use, roadway design and access, and multimodal facilities. Recognizing these variations, six distinct Character Areas were identified to better identify needs and opportunities, as shown in Figure 2. Character Areas are defined by unifying features, such as land uses and roadway design.

**Character Area 1** extends from the I-25 and Broadway Station to Yale Avenue within the City and County of Denver. This portion of Broadway is vibrant with small retail, restaurants, and bars.

**Character Area 2** extends from Yale Avenue to US 285 within the City of Englewood. Downtown Englewood covers several blocks along Broadway, from Eastman Avenue to US 285, and sports a main street feel.

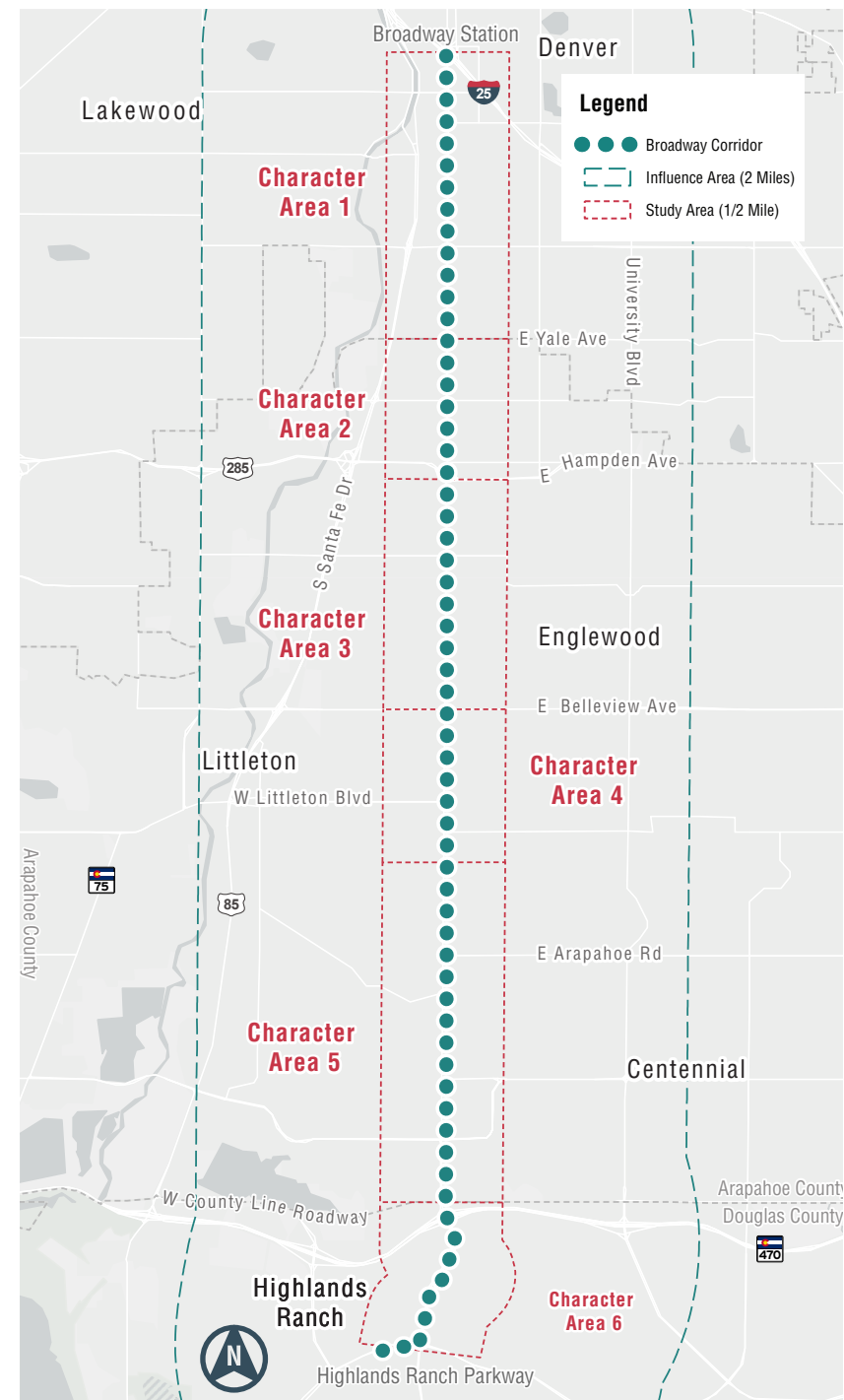
**Character Area 3** extends from US 285 to Belleview Avenue within the City of Englewood. The intensity of land use changes to small storefronts, some with private parking and/or drive-thrus, and narrow pedestrian spaces.

**Character Area 4** extends from Belleview Avenue to Caley Avenue, mostly within the City of Littleton. Parcel sizes increase in this section, and land uses include big-box commercial and car dealerships.

**Character Area 5** extends from Caley Avenue to County Line Road within both the City of Littleton and the City of Centennial. The surrounding land uses are similar to Character Area 4 but several residential neighborhoods are immediately adjacent to Broadway.

**Character Area 6** extends from County Line Road to Highlands Ranch Parkway. Broadway transitions to a suburban thoroughfare with little development fronting Broadway.

**FIGURE 2: BROADWAY CORRIDOR STUDY AREA**



## Chapter 02

# Corridor Context



# Corridor Context

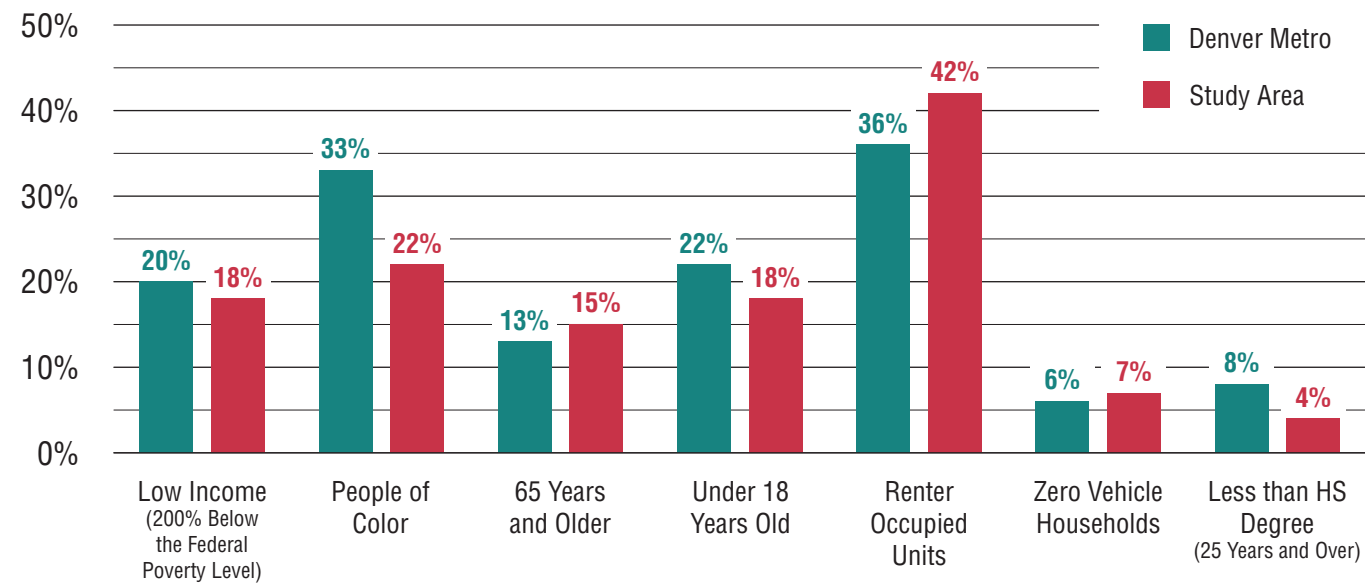
## PROBLEM STATEMENT

Broadway holds special significance for the Denver Metro Area, serving as a regional connection and economic activity center. The communities along Broadway are not as well-served by the corridor as they could be, and several aspects of the roadway’s design contribute to these shortcomings. The corridor suffers from aging infrastructure, limited mobility options, and a design that contributes to unsafe driving behaviors. Additionally, much of the surrounding land uses are large-scale retail, strip malls, underutilized parking lots, and drive-thru services that prioritize vehicular travel. The study process generated recommendations to address these issues.

## COMMUNITY CHARACTERISTICS

Adjacent to this 11-mile stretch of Broadway resides approximately 94,000 people (roughly 3% of the Denver Metro Area) as of 2021. The area is less diverse than the Denver Metro Area overall, with fewer low-income households and less racial and ethnic diversity, as shown in Figure 3. A high share of populations that are more likely to rely on alternative forms of transportation live along Broadway, including renters, households without vehicles, and seniors.

FIGURE 3: STUDY AREA DEMOGRAPHICS



**15%** **65 Years and Older**

**42%** **Renter Occupied Units**

**7%** **Zero Vehicle Households**

Source: American Community Survey 5-Year Estimates, 2018 - 2022

## Economic Conditions

The study area contains approximately 3,000 operating businesses supporting roughly 34,000 jobs – just over 2% of the Denver Metro Area total. The primary industries and highest employing sectors in the area, shown in Figure 5, are Health Care and Social Assistance, Retail Trade, and Professional, Scientific, and Technical Services. Over the past decade, businesses in the study area added approximately 2,700 jobs, with a similar mix of industries. Jobs are clustered in several areas of the corridor, including near I-25, US 285, Littleton Boulevard, County Line Road, and Highlands Ranch Parkway. These areas currently function as activity centers supporting retail, healthcare services, and office space. The density of businesses changes along the corridor, demonstrated in Figure 4, with higher densities in Denver and Englewood and lower densities in Littleton and Centennial. The variety in business types contributes substantially to the look and feel of each Character Area.

FIGURE 4: JOB DENSITY

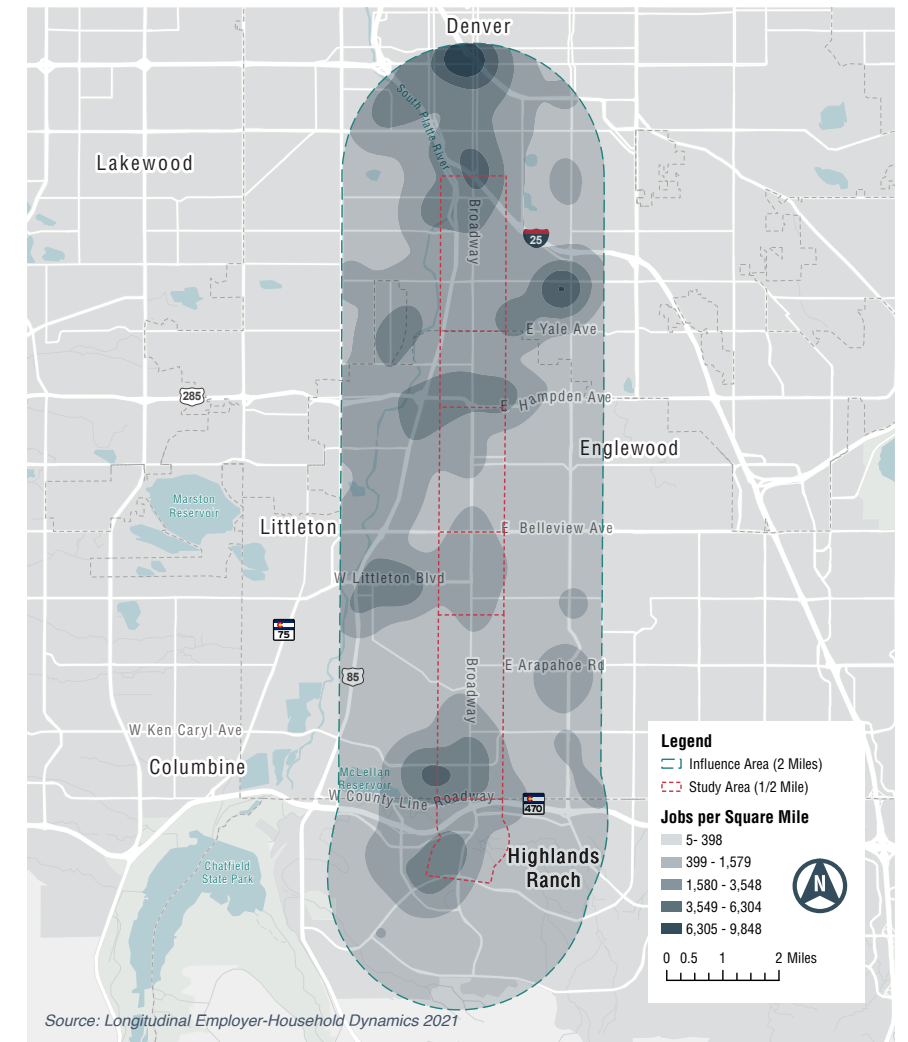
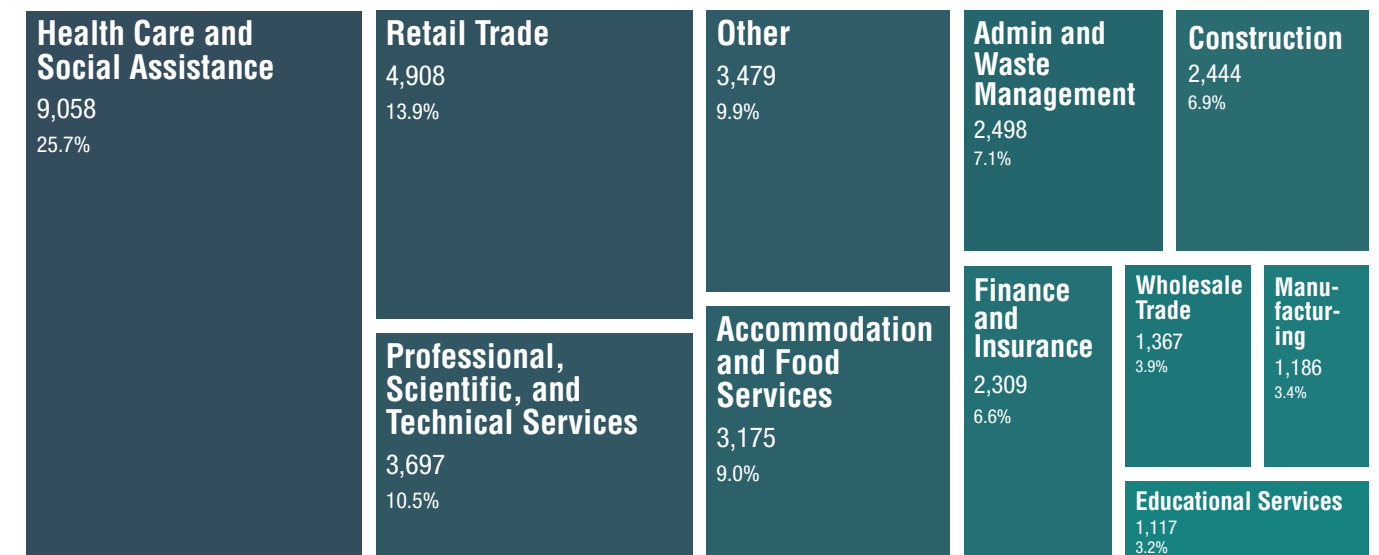


FIGURE 5: PROMINENT INDUSTRIES AND EMPLOYMENT (INFLUENCE AREA)



Source: Quarterly Census of Employment and Wages; Economic & Planning Systems

## URBAN REALM

The study area transitions over the 11-mile corridor from a medium-density urban environment in Denver to a car-oriented suburban environment in Highlands Ranch. Much of the northern section features continuous building fronts, public art, street trees, and resting areas that contribute to an active pedestrian environment. To the south, the lots are larger with buildings situated away from the street and often separated by large parking areas. The streetscape varies along the corridor in some places featuring consistent landscaped buffers between the roadway and sidewalk, and in other places featuring few public amenities and few street trees and sidewalks that are directly adjacent to six lanes of high-volume traffic.

### Graphic Legend



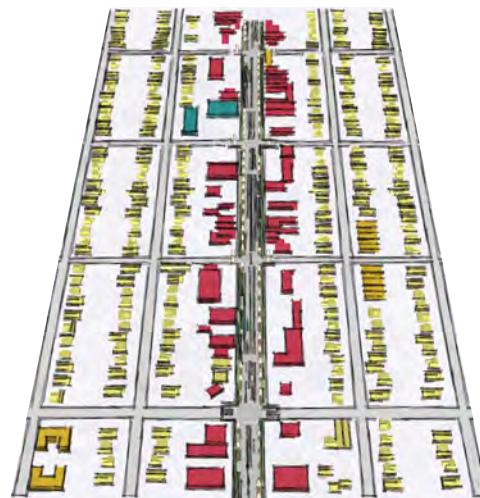
### Urban Main Street

Urban Main Street is most common in Denver and Englewood’s downtown district. It features higher-density development compared to other parts of Broadway, such as multifamily housing, retail, and entertainment. The overall streetscape can feel disjointed due to an inconsistent building edge (placement of buildings along the street) with some buildings fronting the sidewalk and others separated by a parking lot. Many of the existing businesses are commercial, which limits the amount of people who visit and spend time on Broadway.



### Main Street

The Main Street context features commercial and retail with pockets of multifamily housing; however, the land use intensity and scale are less prominent than the Urban Main Street context. Buildings are typically one to three stories and house small, local businesses. This context contains many large empty lots that fragment the streetscape and disrupt the welcoming main street feel.



### Suburban

The Suburban context typically features low-density residential fronting or backing to Broadway with pockets of large-lot retail. These areas are designed for private vehicle travel and have limited to no pedestrian amenities. Low-intensity residential uses directly adjacent to large-lot retail create a hostile and unwelcoming pedestrian environment.



### Suburban Commercial

The Suburban Commercial context features large-scale commercial and retail uses adjacent to low-rise residential uses. These areas are designed for personal vehicle travel and lack amenities for people to navigate comfortably on foot. Large parcels in these areas create more opportunities for redevelopment; however, in their current form, they promote a car culture and create inequities in transportation choices. Typically, a car is required to access these destinations.

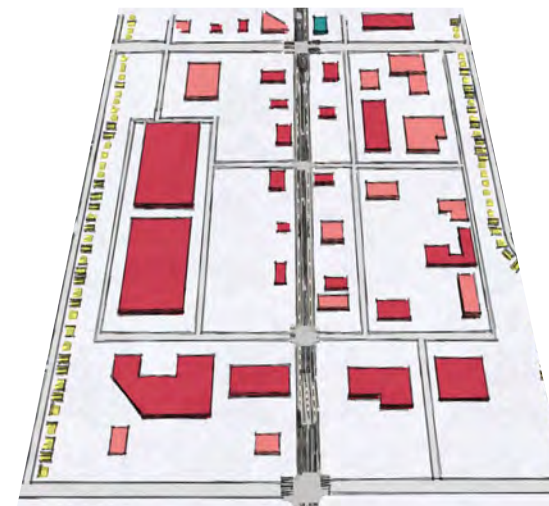
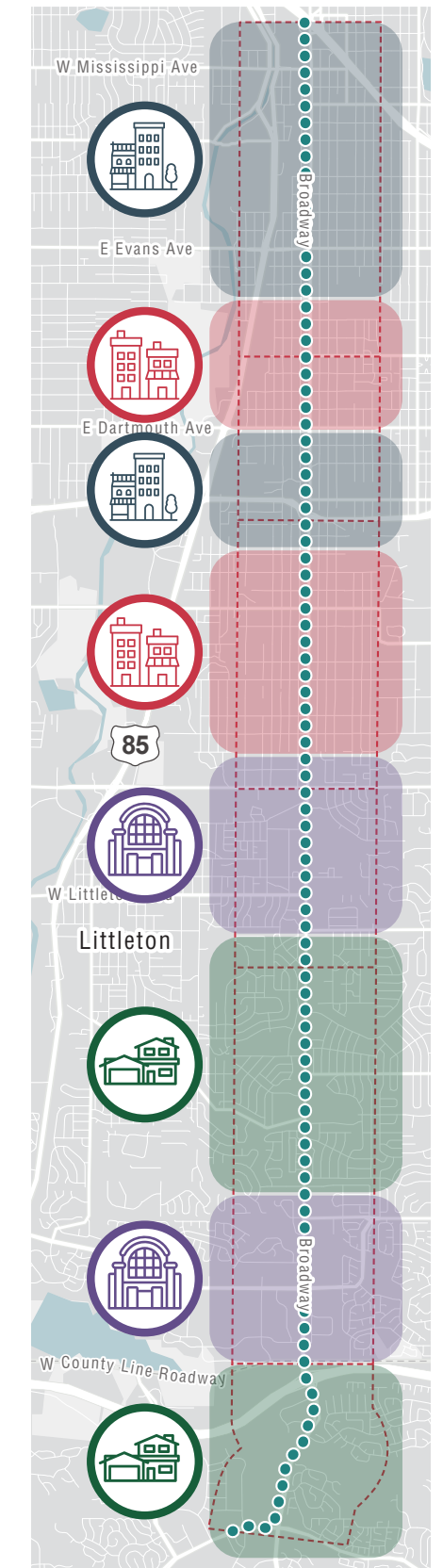


FIGURE 6:  
CONTEXT AREAS





## EXISTING MOBILITY

Broadway's existing roadway configuration prioritizes vehicular movement, even in contexts where the level of pedestrian activity and interaction with businesses would benefit from slower speeds and more comfortable facilities for people biking, walking, and using mobility devices. High vehicular speeds and volumes, wide vehicle travel lanes, and narrow, attached sidewalks make Broadway a challenging corridor to navigate for people using non-vehicular modes. Meanwhile, because Broadway directly connects many people to places they want to visit, it is also one of the highest-ridership RTD transit routes, serving more than 2 million riders per year. However, there are limited transit amenities, and schedule delays are common.

The public right-of-way width along Broadway varies somewhat throughout the corridor but is generally approximately 100 feet. The makeup of the existing cross-section varies more substantially between different Character Areas. Figure 8 presents the typical existing cross-section for each Character Area.

## Vehicle Mobility

The average daily traffic volumes range from 22,000 to 41,000 vehicles per day along the corridor (see Figure 7), with the highest volumes occurring near the Broadway/I-25 interchange, the Broadway/Littleton Boulevard intersection, and the Broadway/C-470 interchange. Volumes are lowest through the Denver portion south of Mississippi Avenue. The corridor generally performs well, though there are some intersections and street segments with regular congestion. Vehicles flow freely with little delay, and there is excess capacity during most of the day, although traffic does build up during peak hours at several major intersections, including Bellevue Avenue, Evans Avenue, and the westbound ramps at C-470. Appendix A provides more detail about traffic operations along Broadway.



The posted speed limit along Broadway is generally 35 miles per hour (mph); some sections have slower posted speed limits of 25 to 30 mph (Downtown Englewood), and some have higher posted speed limits of 40 to 45 mph (south of Fremont Avenue).

For most of the corridor, the right-of-way width is approximately 95 to 100 feet; most of this space is dedicated to general-purpose travel lanes and turn lanes. Curb-to-curb, the widths vary with generally narrower cross-sections in Denver and Englewood and wider cross-sections in Littleton/Centennial. There are exceptions, for instance, south of the Broadway/I-25 interchange. For most of Broadway, there are two travel lanes in each direction and either a turn lane or median to manage access. Sidewalks are wider in Denver and Englewood, at roughly 8 to 10 feet, compared to 5 to 8 feet in Littleton and Centennial.

FIGURE 7: EXISTING TRAFFIC

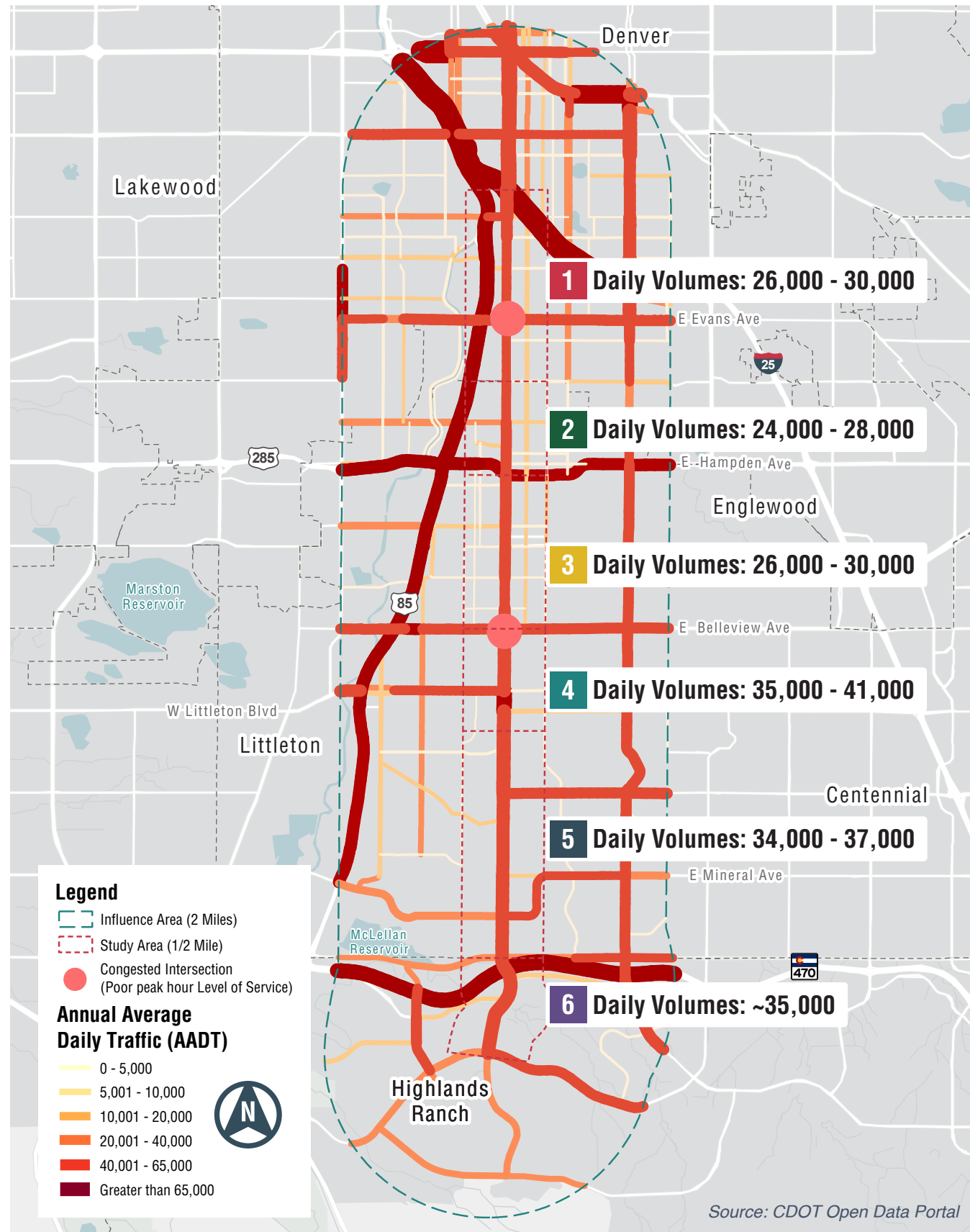
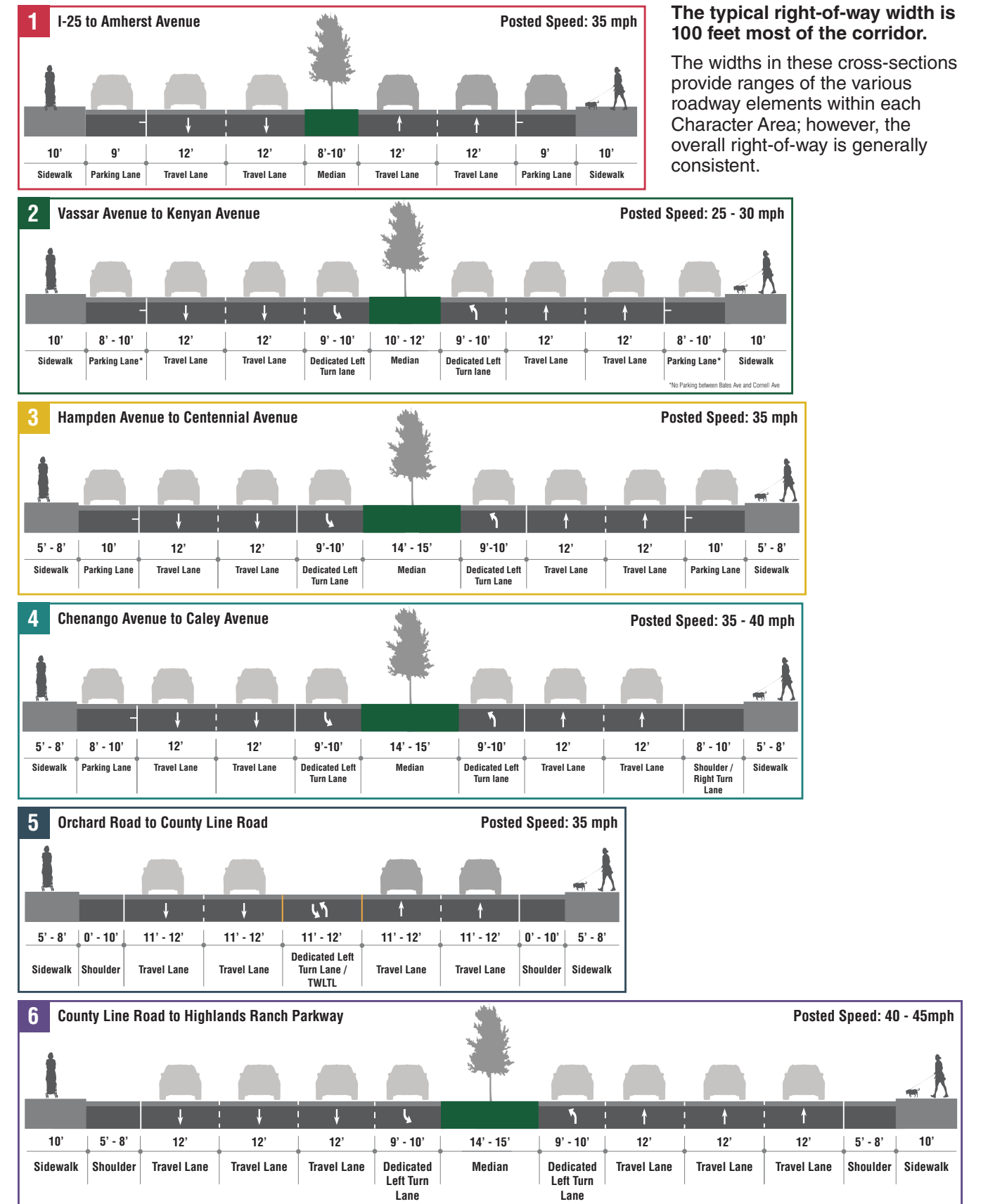


FIGURE 8: EXISTING TYPICAL CHARACTER AREA CROSS-SECTIONS





## Transit Mobility

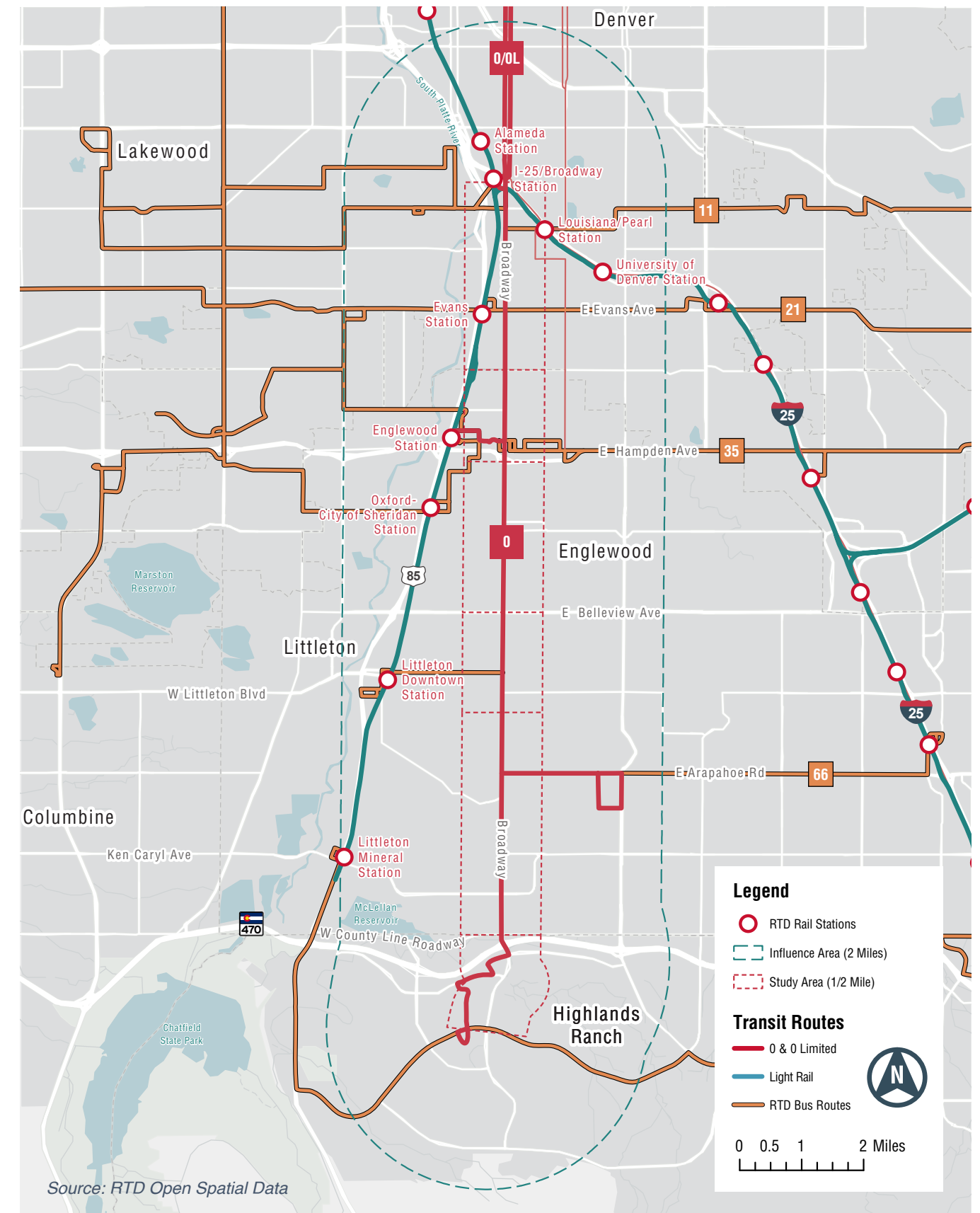
Transit service on Broadway is limited to one primary route, Route 0, which runs between Highlands Ranch Town Center and Denver Union Station. The bus operates every 30 minutes Monday through Friday, with limited service on the weekends. There is also a shortened Route 0, Route 0L (L refers to “limited”), pattern between I-25 & Broadway Station and Denver Union Station that operates every 15 minutes during peak hours, resulting in higher frequencies north of I-25. There are numerous perpendicular connecting bus routes, including Routes 21, 11, 35, 66, and the Englewood Trolley; Route 66 runs along Broadway briefly between Arapahoe Road and Littleton Boulevard.

There are more than 60 bus stops along Broadway in the study area, and they vary widely in their design/configuration and the types of amenities provided for transit riders. In general, stops north of Belleview Avenue have more amenities, such as shelters and benches, compared to stops south of Orchard Road lack amenities. Along Broadway, Route 0 directly serves two light rail stations (I-25 & Broadway Station and Englewood Station) and an end-of-line Park-n-Ride at Highlands Ranch Town Center.

The number of people served varies widely by stop, with a clear pattern of increasing ridership from south to north. In 2019, stops south of Dry Creek Road averaged fewer than 350 boardings and alightings per stop on a typical weekday, while stops north of Evans Avenue generally averaged over 600 per stop. In 2022, weekday ridership along the corridor was generally between 33% and 50% lower than in 2019. This is consistent with the sustained drop in system-wide ridership RTD has seen since the COVID-19 pandemic, although ridership numbers have gradually been growing over the last two years; since 2020, Broadway ridership has recovered slightly faster than the system-wide average for ridership recovery. Overall, pre-pandemic, the Broadway/Lincoln Avenue corridor was the second-most traveled bus corridor in the Denver Metro Area, with nearly 3 million riders per year (including riders both north and south of I-25).



FIGURE 9: EXISTING TRANSIT ROUTES



## Active Mobility

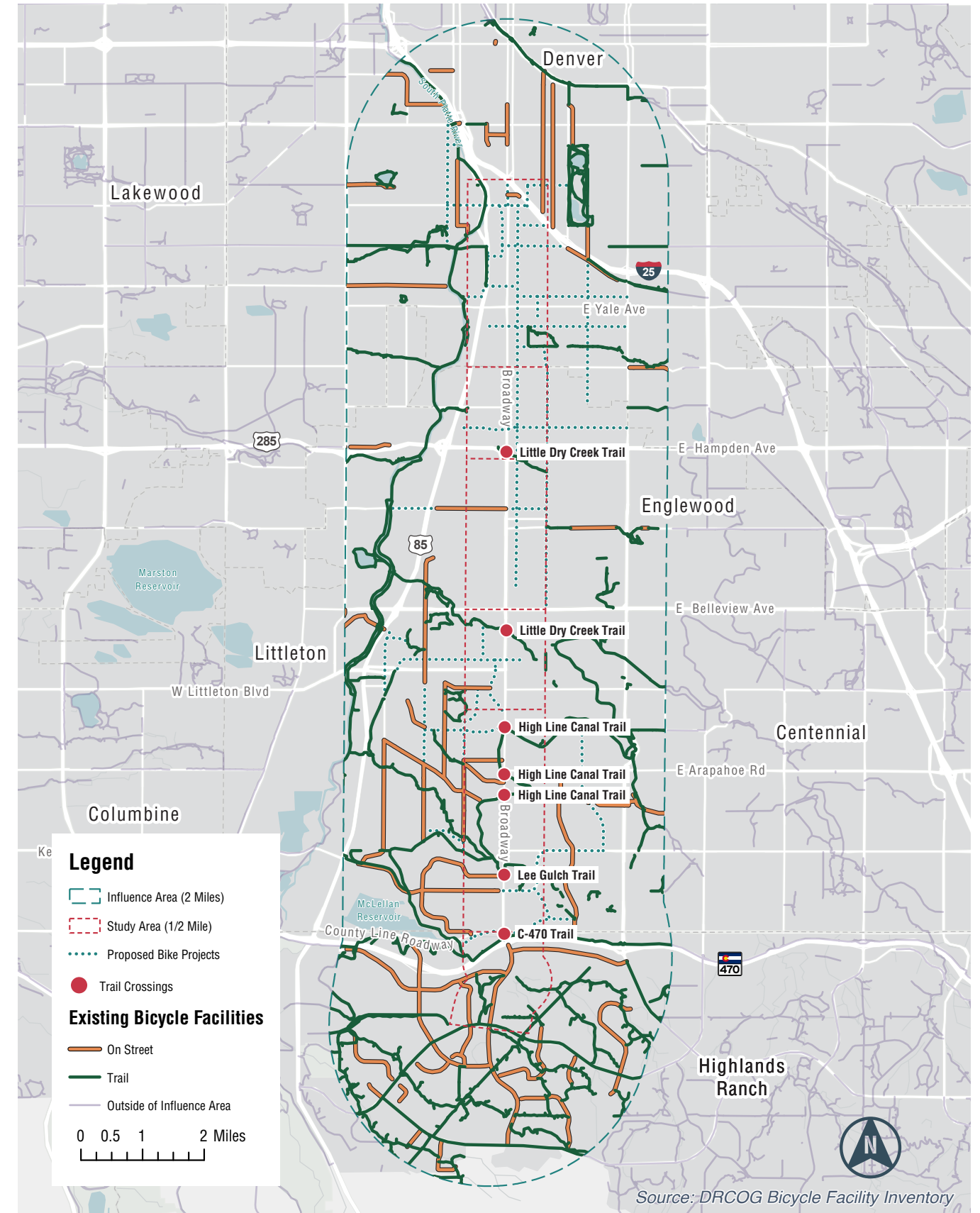
Sidewalks are present along most of Broadway, with small segments where they are missing. However, the level of accommodation and comfort for pedestrians vary widely along the corridor. In general, the sidewalks are not wide or detached enough to provide a comfortable pedestrian environment. The northern sections in Denver and Englewood typically have 10- to 12-foot detached sidewalks with benches and street art. Sidewalk quality diminishes to the south due to more suburban land uses, and there are relatively narrow (5- to 8-foot), attached sidewalks and few amenities. The lack of a street grid south of Belleview Avenue means there are few viable alternate routes to Broadway for pedestrians to use without going unreasonably out of direction.



There are no dedicated bicycle facilities along Broadway, and the existing sidewalks are not wide enough to comfortably accommodate both bicyclists and pedestrians. Bicycle travel primarily occurs on parallel and intersecting facilities, such as on-street connections and several nearby regional trails. Figure 10 shows the existing bicycle network in the study area. However, none of these parallel facilities are continuous through the study area, and connections between them and Broadway destinations are lacking. Broadway is also a major barrier to east-west bicycle and pedestrian travel because of its width and the limited number of grade-separated crossings. Currently, east-west crossings for bicyclists and pedestrians are generally only possible at signalized intersections, and many of the signalized intersections are large and busy, presenting numerous conflict points for pedestrians and bicyclists.

Several major regional trails and on-street bicycle corridors intersect Broadway within the study area, as shown in Figure 10. The High Line Canal Trail, Lee Gulch Trail, and C-470 Trail currently cross Broadway at-grade, while Big Dry Creek and Little Dry Creek cross under Broadway with on street access points. There are numerous existing and planned on-street east-west bikeways that cross Broadway in every Character Area, but many of the Broadway intersections lack bicycle-specific crossing treatments.

FIGURE 10: EXISTING BIKE AND TRAIL NETWORK



Source: DRCOG Bicycle Facility Inventory

## SAFETY

Broadway and several intersecting east-west corridors are part of DRCOG's High Injury Network. Between 2015 and 2019, the most recent available five-year period without pandemic-related travel impacts, a total of 3,780 crashes were recorded along the Broadway corridor. There were an average of three crashes per week where somebody was injured or died. Table 1 presents the intersection in each Character Area with the highest concentration of severe crashes, and Figure 11 shows crash distribution throughout the corridor.

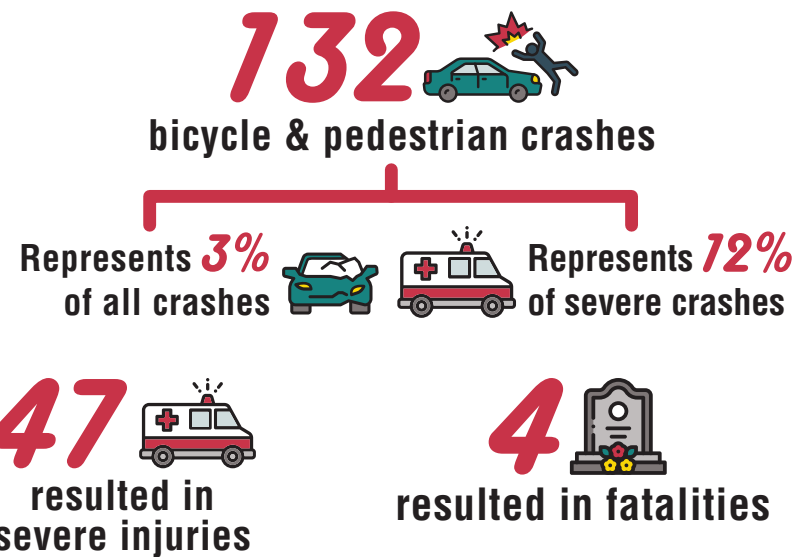


TABLE 1: SEVERE AND FATAL CRASHES ON BROADWAY

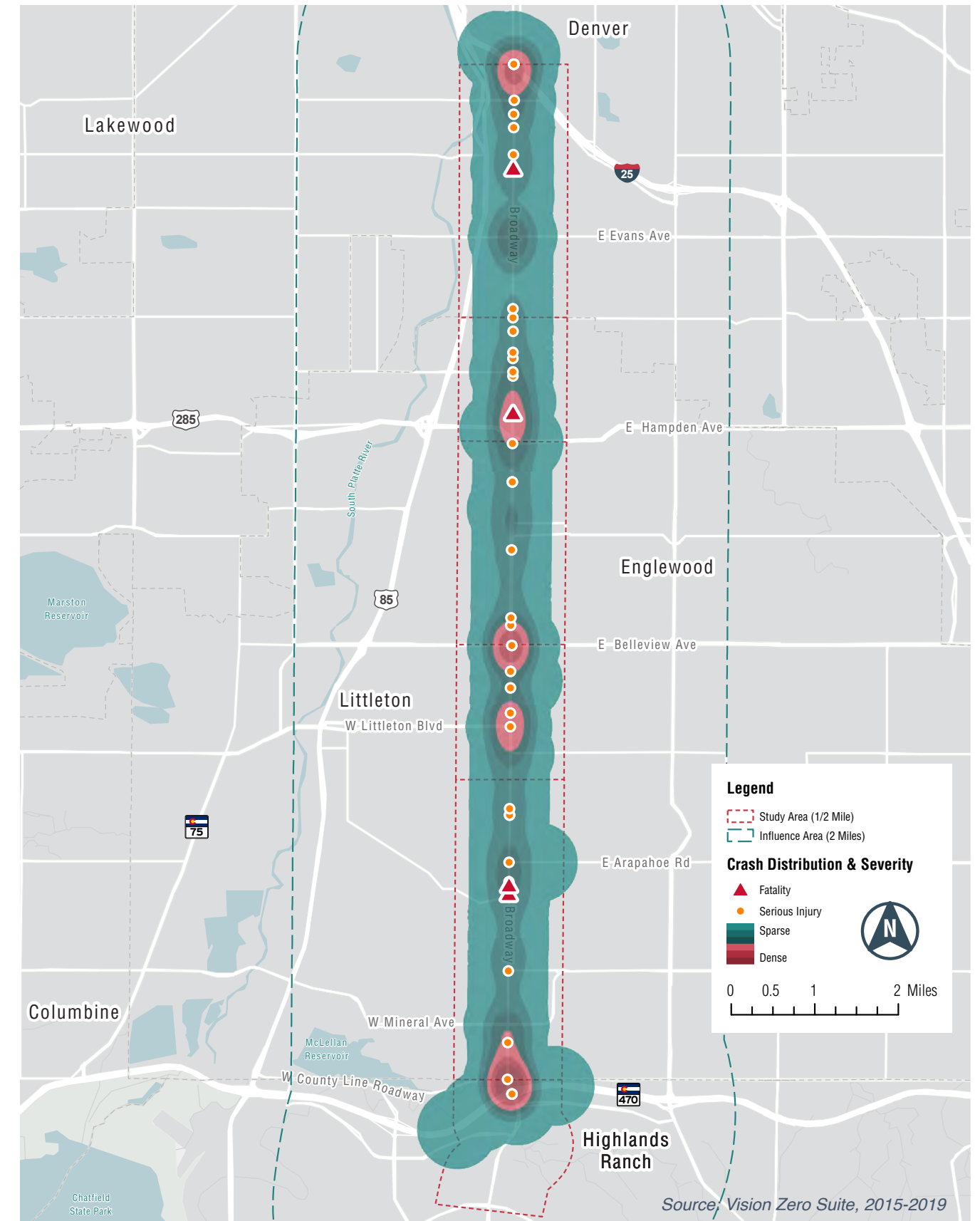
Area	Northern Boundary	Southern Boundary	Total Crashes	Severe Crashes	KSI* Crashes
1	Ohio Ave	Yale Ave	808	163	15
2	Yale Ave	US 285	447	70	7
3	US 285	Belleview Ave	443	84	5
4	Belleview Ave	Caley Ave	715	138	7
5	Caley Ave	County Line Road	607	157	9
6	County Line Road	Highlands Ranch Pkwy	760	161	6

\*KSI: Killed or Serious Injury

Source: Vision Zero Suite, 2015-2019



FIGURE 11: 2015 - 2019 CRASHES ON BROADWAY



## ENVIRONMENT

There are several environmental considerations as a part of this study if the corridor-wide recommendations are to move forward and may require additional analysis under the National Environmental Policy Act (NEPA). The environmental factors include hazardous materials, historic resources, ecology, floodplains, water quality and wetlands, and recreational resources.

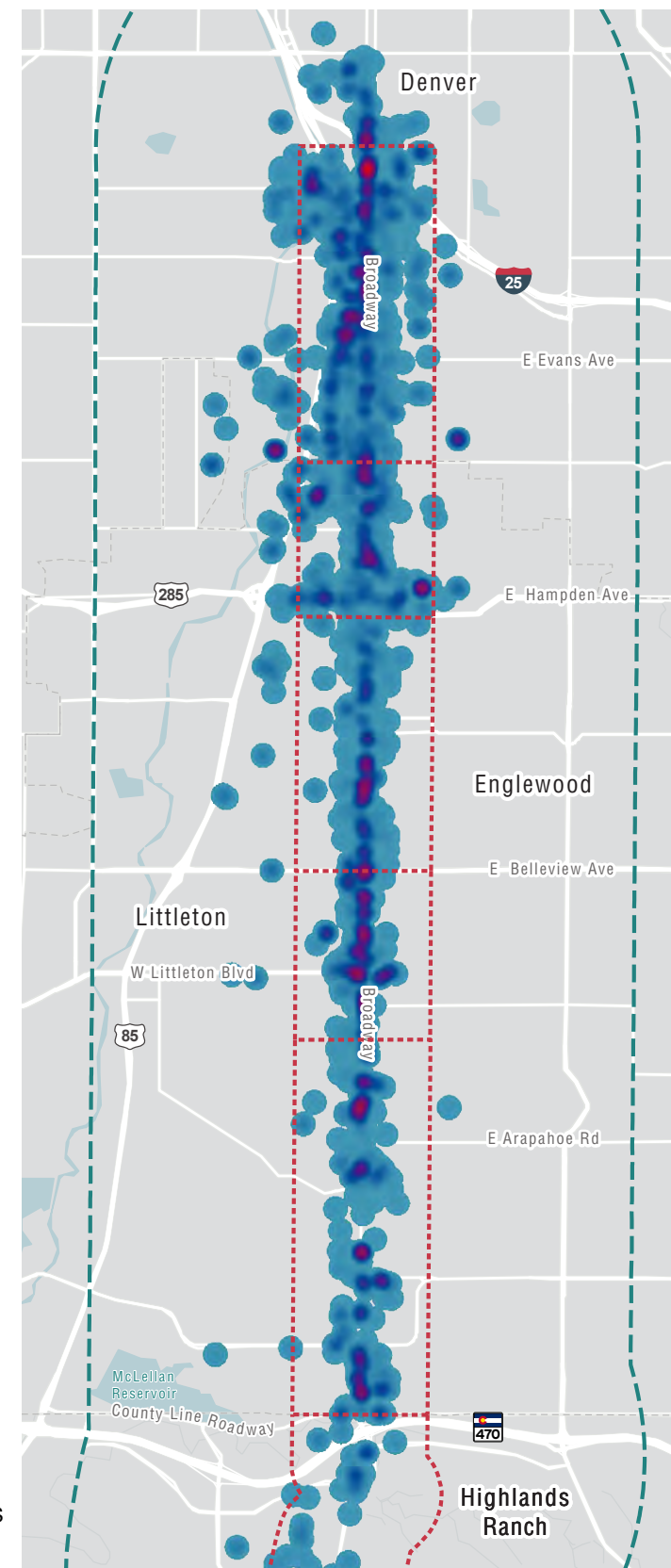
### Hazardous Materials

Approximately 4,757 hazardous materials sites were identified within the Broadway influence area, 1,046 of which are Underground Storage Tanks and 259 are Leaking Underground Storage Tanks. There are also 20 dry cleaners and 21 brownfield sites within the influence area.

### Historic Resources

Two properties within the influence area are listed on the National Register of Historic Places: Englewood Post Office and the Key Savings and Loan Association Building. Both sites are in Downtown Englewood. Additionally, the study area has 17 surveyed sites, 260 other historic resources/sites that have not been surveyed, and 36 historic archeologic sites.

FIGURE 12: EXISTING HAZARDOUS WASTE SITES BY DENSITY



## Ecology

No critical habitat for any threatened or endangered species was identified within the influence area. The corridor is predominantly urban, with tree coverage ranging from 10% to 25% in areas.

### Floodplains

Several major creeks flow under Broadway and pose a minimal flood risk to Broadway. Most of the influence area is higher than the 500-year flood line, with several exceptions near Evans Avenue.

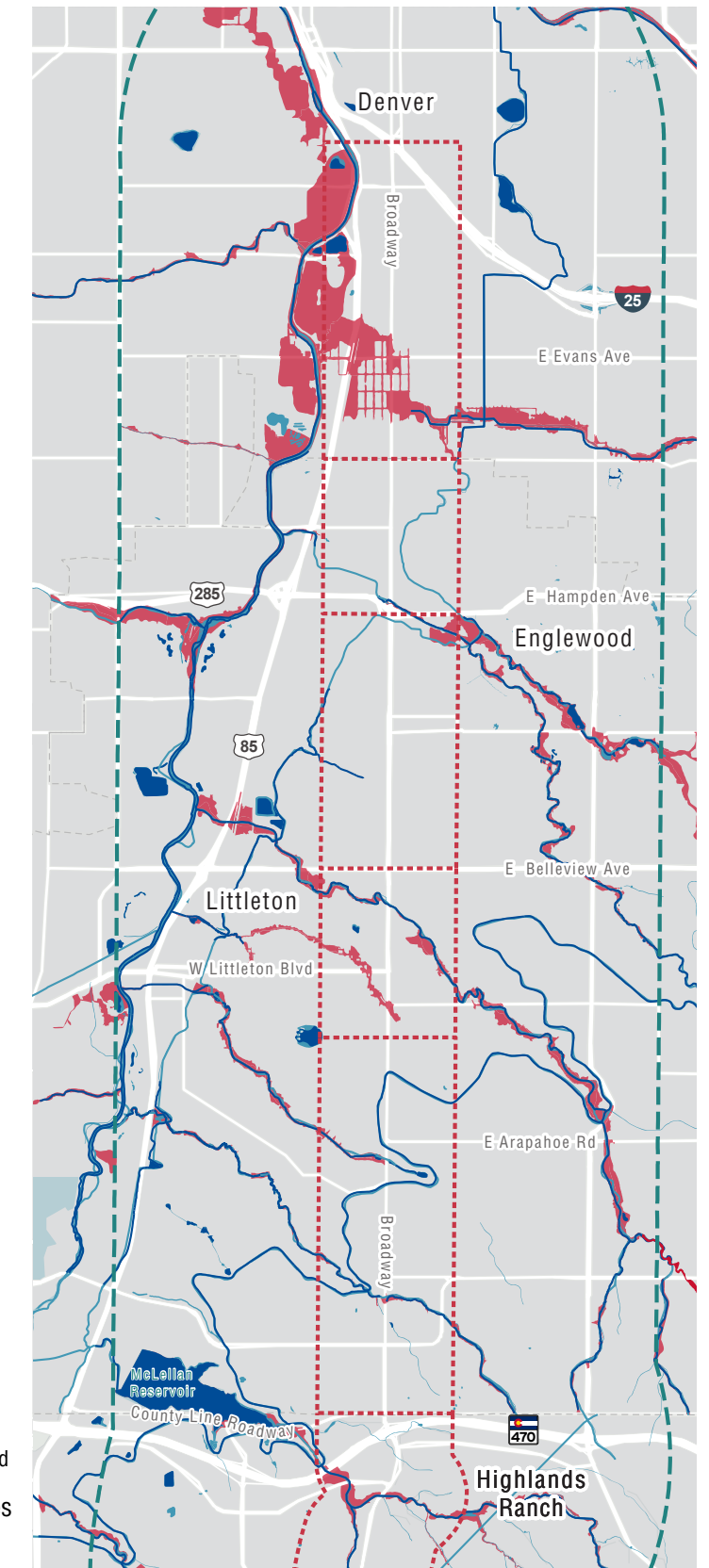
### Water Quality and Wetlands

There are 87 waterbodies, including lakes, reservoirs, natural ponds, and irrigation ponds, located within the influence area. Additionally, there are roughly 109 acres of wetlands in the influence area located along the lakes and rivers. Big Dry Creek, Little Dry Creek, Little's Creek, Lee Gulch, Dad Clark Gulch, and Harvard Gulch flow under Broadway, and all study area segments are flagged as impaired.

### Parks and Open Space

There are 51 parks within the influence area. The largest and most notable parks within the area are Washington Park, Centennial Park, John Meade Park, Huston Lake Park, Harvard Gulch Park, Progress Park, Ketring Park, Arapahoe Park, Redstone Community Park, and Toepfer Park.

FIGURE 13: EXISTING WATERS & FLOODPLAINS



Chapter 03

# Community Engagement



## Community Engagement

The study team used a four-phase engagement strategy to effectively engage the public throughout the planning process. Each phase used tools and strategies to educate the community and stakeholders about the study and solicit feedback to be integrated into the final concepts. The Community Engagement Task Force supported the engagement effort and included communications staff from all the partner agencies. Each community had a promotional toolkit that contained template social media posts, eblasts, and newsletters that they could share with partners.

### *Community Engagement Toolbox*

The following notification outlets and materials were utilized to build awareness about the study and opportunities for the community to provide input.

- Social media campaigns, including paid advertisements
- Press releases to local jurisdictions and publications
- Project webpage on City of Littleton's website
- Postcards and letters to those along Broadway
- Articles in the Littleton Report
- Eblasts to the study distribution list
- Educational video
- Study fact sheet and presentations



The public process began with targeted interviews with key community representatives. These stakeholder interviews were designed to develop a deeper understanding of community needs and desires for Broadway. Participants included local business owners, residents, hospital staff, and representatives from advocacy groups and other community organizations. The interviews were followed by broader public engagement that captured the perspective of community members and commuters. Activities to capture their input included online public meetings, questionnaires, open houses, and pop-up events.

Phase	Engagement Tools	Collected Feedback
<p><b>1</b> Study Initiation</p>	<ul style="list-style-type: none"> <li>▶ Stakeholder interviews</li> <li>▶ Online public meeting</li> <li>▶ Introduction video</li> </ul>	<ul style="list-style-type: none"> <li>▶ Existing conditions</li> <li>▶ Vision and goals</li> </ul>
<p><b>2</b> Alternatives Development and Screening</p>	<ul style="list-style-type: none"> <li>▶ Existing event attendance</li> <li>▶ Two public open houses (Englewood and Littleton)</li> <li>▶ Resident stakeholder meeting</li> </ul>	<ul style="list-style-type: none"> <li>▶ Eliminated improvement options</li> </ul>
<p><b>3</b> Preferred Alternative</p>	<ul style="list-style-type: none"> <li>▶ Two pop-up events (Englewood and Littleton)</li> </ul>	<ul style="list-style-type: none"> <li>▶ Urban design elements</li> </ul>
<p><b>4</b> Final Report</p>	<ul style="list-style-type: none"> <li>▶ Final Recommendations Video</li> </ul>	<ul style="list-style-type: none"> <li>▶ Alternative 2</li> <li>▶ General comments</li> </ul>

# Community Engagement at a Glance

Below is a summary of the engagement activities that occurred over the course of the study. Feedback gathered from stakeholders and the public are captured throughout the following study chapters.

## PHASE 1

### Study Initiation (October – March 2023)

**Stakeholder Interviews:** Helped the study team identify opportunities and challenges along Broadway.

- 16** Interviews
- 24** Participants
- 23** Organizations

**Online Public Meeting:** Educational meeting to inform the public about the study and the known conditions on Broadway and to gather input on the community's vision and major concerns and experiences along the corridor.

- 798** Visitors
- 212** Survey Responses
- 184** Comments
- 14,533** Social Media Reach  
# of people who saw post

## PHASE 2

### Alternatives Development & Screening (June 2023)

**Online Public Meeting:** The study team shared the adopted study vision and goals, an overview of the Phase 1 engagement results, and asked for feedback on the types of transportation improvements the community wanted to see on Broadway. Additionally, participants were asked about how they want Broadway to look and feel as a visitor and user and the style of specific element details like lighting, paving, art, and seating.

- 507** Visitors
- 22** Comments
- 158** Survey Responses
- 97,501** Social Media Reach  
# of people who saw post

**Public Open Houses:** The public had the opportunity to meet the study team and learn about the four alternatives identified during Phase 1 of the study. The attendees were asked to provide input on the transportation elements they wanted to be considered for Broadway and how they want Broadway to look and feel as a traveler.

<b>Englewood</b>	<b>Littleton</b>
Tuesday, June 13, from 5:00 - 6:30 p.m.	Tuesday, June 17, from 5:00 - 6:30 p.m.
<b>18</b> Attendees	<b>18</b> Attendees

### Existing Events

- 2** Events
- Englewood Neighborhood Night on June 1 at Rotolo Park
- Littleton Meet, Eat, and Greet on June 21 at Geneva Park

## PHASE 3

### Preferred Alternative (December 2023)

**Online Public Meeting:** The final online public meeting gathered community and stakeholder input on the recommended alternative conceptual design. The study team shared high-level technical analysis and the community feedback gathered during Phase 2 that led to the preferred alternative identification.

- 993** Visitors
- 198** Survey Responses
- 113** Comments
- 24,994** Social Media Reach  
# of people who saw post

### 2 Pop-Up Events

- Kaladi Coffee in Englewood on December 15
- YMCA in Littleton on December 16

## PHASE 4

### Final Report (April 2024)

The final report was published in April 2024, with an opportunity for the public to provide feedback by contacting the City of Littleton Public Works department.

*Engagement Snapshot*

**2,298**  
Visitors

**568**  
Survey Responses

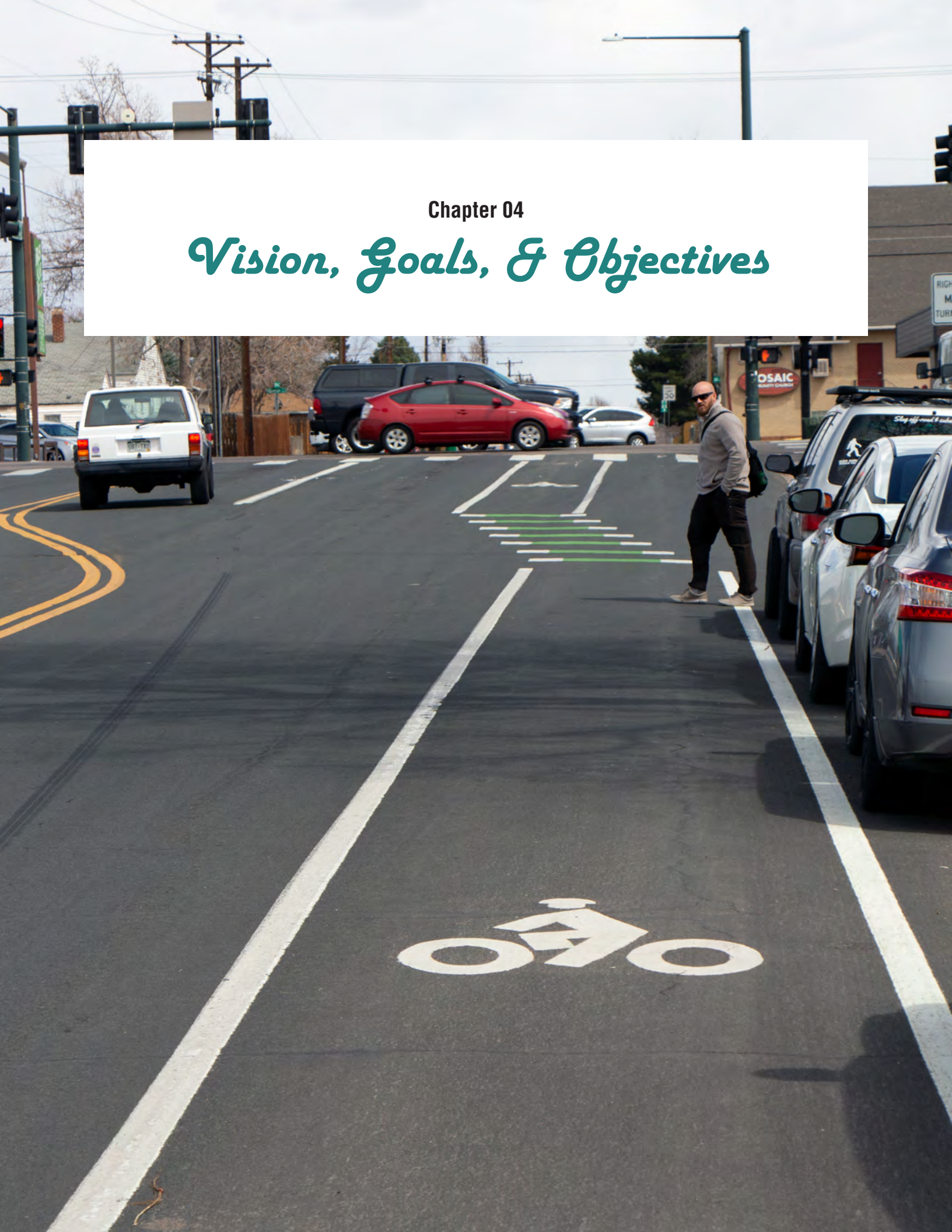
**319**  
Comments

**137,028**  
Social Media Reach  
# of people who saw post



Chapter 04

# Vision, Goals, & Objectives



## Vision, Goals, & Objectives

The vision for Broadway directly stems from the problems identified through the existing conditions analysis and stakeholder and community input. In its current form, Broadway functions generally well for cars, but is a less desirable place for the people-centered movement that the community desires. Together, the analysis and community input informed the study's goals that were used to evaluate the alternative conceptual corridor designs. Additionally, the objectives directly tie to other regional and local planning efforts, including **DRCOG's 2050 Metro Vision Regional Transportation Plan**, **RTD's Regional Bus Rapid Transit (BRT) Feasibility Study**, and the U.S. DOT's general priorities based on funding criteria.

*Vision*

Broadway will celebrate and connect the unique identities of our communities, foster economic vibrancy, provide safe and comfortable spaces, and support regional mobility options for all.

To achieve this vision, the study partners identified goals and objectives that the improvements should accomplish. The improvement packages meet these goals to varying degrees, and the recommended alternative represents the alternative determined to best achieve these goals and, ultimately, the vision.

Most respondents agreed with:

Vision **83%**

Goals **87%**



# Safety

## GOAL

**Attaining a future with zero transportation-related fatalities and serious injuries.**

Safety is a major challenge on Broadway. The corridor is part of the Denver Metro Area’s High Injury Network. The existing design, configuration, and operation of Broadway are major contributors to the corridor’s safety issues. Vulnerable users of the corridor in particular, including students at numerous nearby schools, have a lack of comfortable facilities and crossing points.

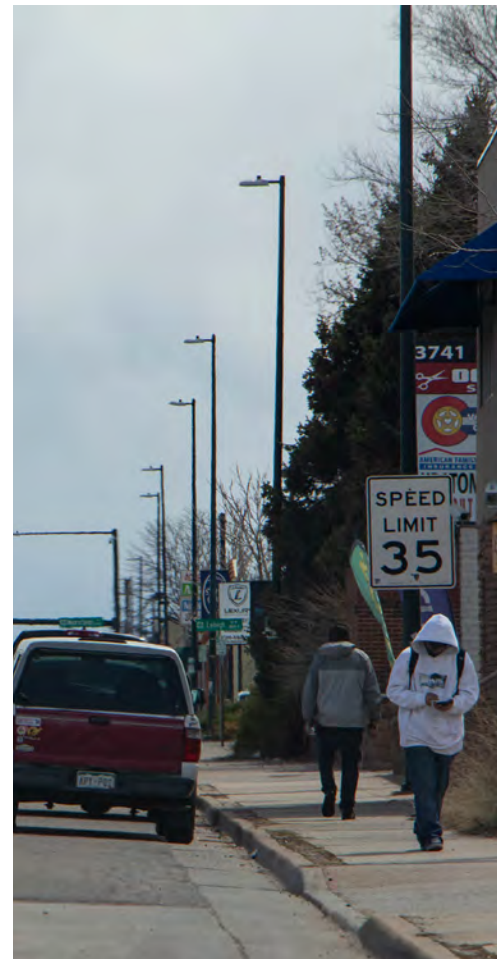
## OBJECTIVES



Reduce serious injury and fatal crashes for motorists, bicyclists, and pedestrians by 50% by 2030.



Reduce serious injury and fatal crashes for motorists, bicyclists, and pedestrians by 100% by 2050.



## High Injury Network

The High Injury Network is a collection of streets – primarily arterials – that experience a particularly high number of fatal and severe-injury crashes. Between 2015 and 2019, crashes on Broadway resulted in over 700 injuries and 4 fatalities.

## CHALLENGES



Character Area 1 (Denver) has a high prevalence of serious injury crashes due to a higher potential for conflicts between different modes.



Distracted driving is a contributing factor to over 16% of all crashes on the corridor.



Bicyclists and pedestrians are involved in over 12% of severe corridor crashes, a significant over representation relative to total crashes.



Many major intersections along the corridor are hot spots for crashes.



Many bus stops lack basic amenities such as benches and shelters, which detracts from feelings of personal safety.



The high number of driveways is a safety concern for Broadway users because every driveway is a potential conflict point between bicyclists, pedestrians, and motorists.










# Connectivity

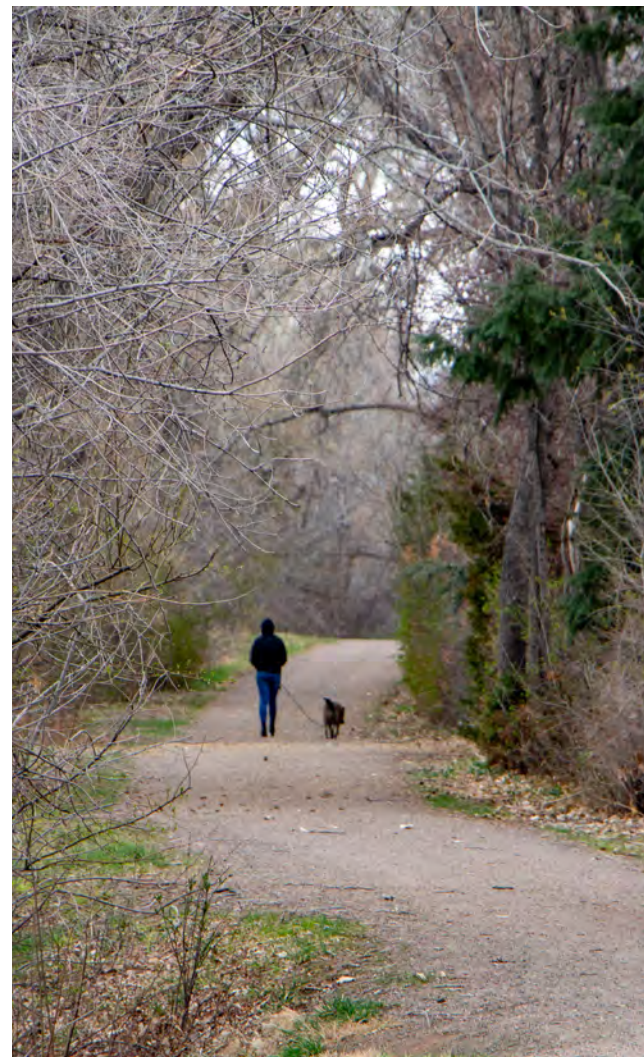
## GOAL

**Completing a cohesive and well-connected corridor for all modes and users.**

Broadway is a critical north-south corridor in the Denver Metro Area, but its current configuration does not connect well to or support the regional active transportation and transit networks. The corridor was designed to facilitate efficient vehicular travel, which makes it more of a barrier than a link in the active transportation network and detracts from the transit experience.


## OBJECTIVES

-  Fully and safely connect the walking networks along the corridor.
-  Fully and safely connect the biking networks along the corridor.
-  Fully and safely connect the transit network along the corridor.
-  Enhance business and residential access on the corridor for all modes.
-  Provide convenient connections between modes.



## *Broadway Transit Service*

Broadway has one primary transit service, RTD Route 0, which operates at 15-minute frequencies north of US 285 and just 30-minute frequencies south of US 285 throughout the day. These frequencies, combined with frequent schedule delays, limit the convenience of transit on Broadway.



## CHALLENGES



Broadway's width, travel speeds, and traffic volumes make it a barrier to east-west active travel.



Much of the corridor lacks comfortable space for biking and walking, with the entire corridor rating as high-stress for bicycling, and the portion of the corridor south of Belleview Avenue rating as high-stress for walking.



Low bus service frequencies (30 minutes or greater) and few east-west transit connections south of US 285 limit the convenience of transit trips.



There are no existing mobility hubs that facilitate convenient transfers between different travel modes.



# Mobility

## MOBILITY GOAL

**Offering reliable and predictable transportation options.**

Broadway generally works well for vehicular travel, but its current make up does not work well for other modes. Most of the existing cross-section is taken up by general-purpose travel lanes, turn lanes, and roadway medians. The corridor's comfort and convenience for bicyclists, pedestrians, and transit users is inhibited by the lack of dedicated space for those modes.

## OBJECTIVES



Balance local access and regional travel.



Balance multimodal mobility options throughout the corridor.



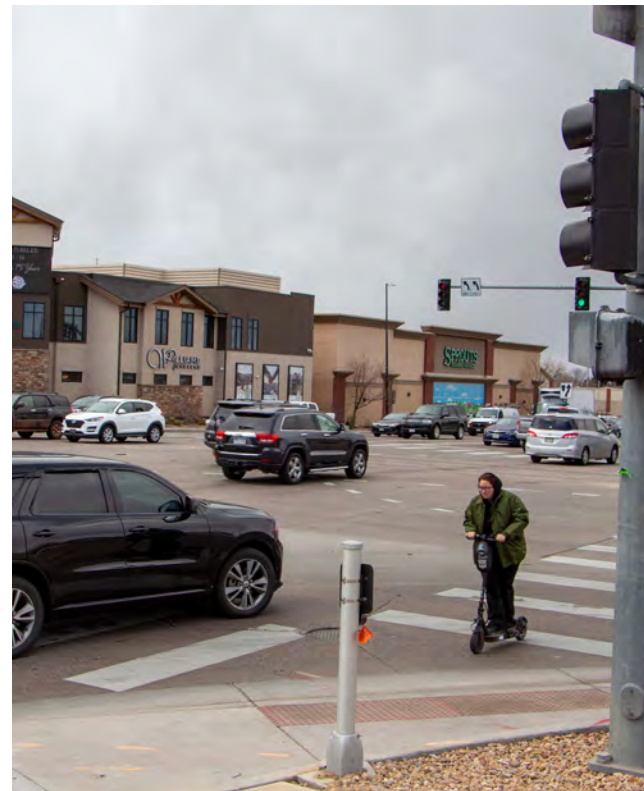
Provide comfortable facilities for all modes.



Provide a corridor that is easy to navigate for all modes.



Increase the accessibility for non-motorized travelers in underserved communities.



## Active Transportation on Broadway

Broadway is considered a high stress corridor for pedestrians and bicyclists due to high speeds, high traffic volume, and minimal or no separation from vehicle traffic.



## CHALLENGES



There are no dedicated bicycle facilities along Broadway.



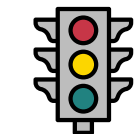
Broadway is a multipurpose corridor with important regional connections and direct access to many local destinations.



A substantial portion of Broadway's existing sidewalks are attached, creating a relatively high-stress environment for pedestrians.



Most of the existing cross-section is dedicated to private vehicle travel, which is less efficient from a person-carrying standpoint than transit and active transportation.



Transit delay between stops is substantial along much of the corridor due to congestion.



Several major intersections along the corridor currently experience significant congestion.



# Placemaking

## GOAL

**Creating spaces where people want to spend time.**

Much of the Broadway corridor lacks a distinct character, especially south of US 285, and generally lacks unique placemaking elements such as public art, branded signage, and paving treatments, which help entice people to spend time on a corridor. The roadway is busy, loud, and dominated by vehicular travel, significantly detracting from the appeal of spending time in the corridor.

## OBJECTIVES



Provide a high level of pedestrian comfort throughout the corridor.



Provide a high level of perceived safety.



Enhance the positive character of the corridor.



Expand and embrace the unique identities present on the corridor.



Mitigate urban heat islands to protect the health of at-risk residents, outdoor workers, and others.



## CHALLENGES



There is limited space for seating, outdoor dining, and other features that encourage personal interaction.



There are few gateway treatments or other cultural installations that reflect local character.



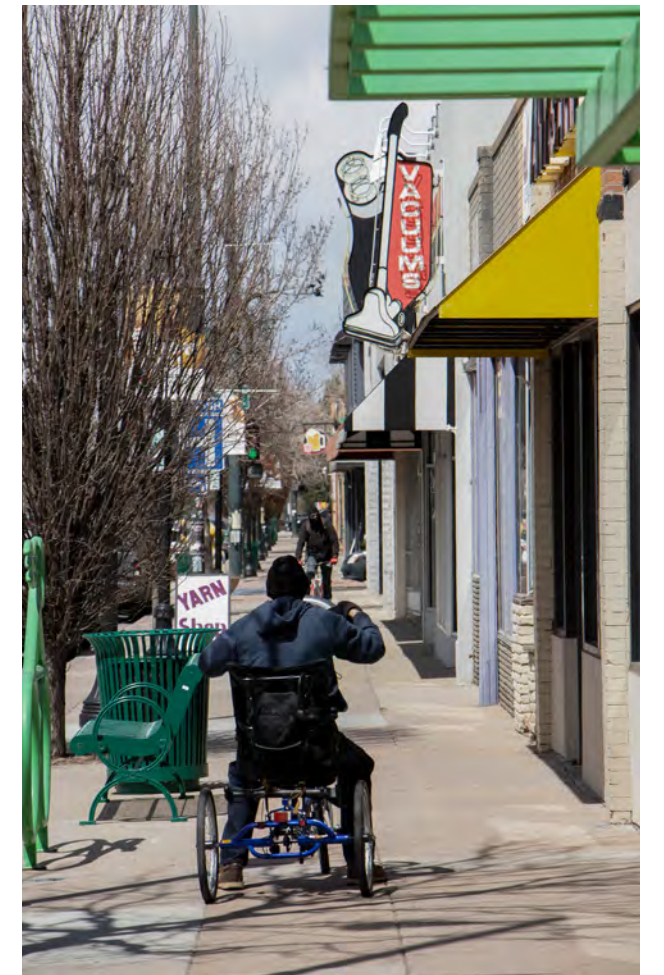
High travel speeds and the resulting noise detract from the pedestrian experience.



The southern portion of the corridor largely lacks buffers such as landscaping and a place for amenities between the sidewalks and the roadway.



Adjacent land uses south of Bellevue Avenue are largely car-oriented.



# Economic Development

## GOAL

**Fostering investment that positively impacts the community.**

Broadway is rich with local destinations and economic potential, but as an arterial that is designed to facilitate efficient regional vehicular travel, the corridor does not highlight these destinations well. Current adjacent land uses are largely car-oriented and low density, especially south of Bellevue Avenue.


## OBJECTIVES

-  Attract capital and align investment from both the public and private sectors.
-  Facilitate economic development and investment.
-  Attract developments that are positive revenue-generators for the surrounding communities.
-  Align land use with the needs of the community.
-  Promote long-term economic growth and other broader economic and fiscal benefits.







## Corridor Employment

There are over 700 businesses and over 6,000 jobs within the study area, and 15% of the businesses are classified as auto-oriented.



## CHALLENGES

-  The existing cross-section is more oriented toward moving people regionally rather than to destinations along the corridor.
-  There is a lack of affordable housing regionally and locally.
-  There is significant unrealized redevelopment potential along the corridor.
-  Several major intersections along the corridor currently experience significant congestion.



# Sustainability

## GOAL

### Maintaining and enhancing ecological, human, and economic health.

Broadway's configuration generates additional vehicle travel and discourages travel by more sustainable modes, contributing to increased air pollution, greenhouse gas emissions, and associated environmental problems.

## OBJECTIVES



Align infrastructure improvements with regional and local sustainability goals.



Direct infrastructure investments to historically underserved communities.



Align policy and programming with regional and local sustainability goals.



Restore and modernize the existing core infrastructure assets that have met their useful life.



Avoid or minimize negative environmental impacts.



Reduce construction and maintenance burdens through efficient and well-integrated design.



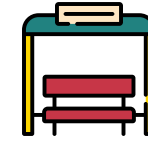
Increase affordable transportation choices by improving and expanding active transportation usage or significantly reducing vehicle dependence, particularly in underserved communities.



Prioritize improvement of the condition and safety of existing transportation infrastructure within the existing footprint.



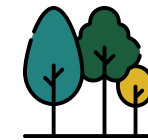
## CHALLENGES



Infrastructure that enhances the convenience and comfort of more sustainable modes of travel along the corridor is limited.



There are numerous census block groups in the study area with high proportions of disadvantaged communities, and they are exposed to high concentrations of air pollution due to the proximity of Broadway, a high-speed, high-volume arterial.



Greenspace and tree cover are limited, especially south of Belleview Avenue.



Car-oriented roadways like Broadway, and the automobile travel they induce, contribute to environmental problems, including climate change.



# Guiding Principles

The guiding principles provided a framework for how the project team intended to approach the study. They reflect the core values and standards that were essential to guiding the team in its decision-making through the study process.



Create and maintain a regional collaborative partnership to carry the vision forward.



Support and integrate with local and regional planning efforts and other projects that address other issues in the area.



Capitalize upon and maximize development and redevelopment efforts along the corridor.



Consider local community context.



Respect and elevate unique characteristics of the various places along the corridor.



Engage residents and community-based organizations to ensure equity considerations for underserved communities are meaningfully integrated throughout the life cycle of the project.



Deploy technologies, project delivery, or financing methods that are new or innovative to the applicant or community.



## Chapter 05

*Corridor Recommendations*

## Corridor Recommendations

Achieving the desired vision for the corridor requires reimagining the right-of-way to better balance all travel modes; increasing the frequency, speed, and reliability of bus transit; enhancing the streetscape to provide a more comfortable space for people walking; providing placemaking elements to draw people to the community; and spurring economic activity. In addition, policies to address congestion and mobility challenges, such as travel demand management, should be developed and implemented by the partner agencies. The multimodal enhancements proposed here aim to equitably balance the needs of drivers, walkers, bikers, rollers, and transit riders and to create safe and comfortable spaces for people to move and gather along Broadway.



## ALTERNATIVE DEVELOPMENT & SCREENING PROCESS

The study team followed an extensive screening process to identify appropriate improvements for Broadway. The screening process was broken into two phases. The first phase evaluated various multimodal concepts and infrastructure improvements organized into transit, bike, pedestrian, and auto categories. Each concept or improvement was evaluated and weighted by how well it supported the adopted vision, goals, and objectives of the study. During the evaluation process, several concepts or elements were eliminated due to lack of feasibility, safety concerns, or incompatibility with project goals. Table 2 shows the initial screening results.

**TABLE 2: LEVEL 1 SCREENING RESULTS**

	Transit	Bicycle	Pedestrian	Auto
Maintained	<ul style="list-style-type: none"> <li>▶ Side Running BRT</li> <li>▶ Center Running BRT</li> <li>▶ Dedicated Bus Lane</li> <li>▶ Mobility Hubs</li> <li>▶ Transit Stop Enhancements</li> </ul>	<ul style="list-style-type: none"> <li>▶ Raised Off-Street Bikeway</li> <li>▶ On-Street Bike Lane</li> <li>▶ Protected Bike Lane</li> <li>▶ Two-Way Bikeway</li> <li>▶ Bike Amenities</li> <li>▶ Bike Intersection Enhancements</li> <li>▶ Grade-Separated Bike Crossings</li> </ul>	<ul style="list-style-type: none"> <li>▶ Detached Sidewalks</li> <li>▶ Pedestrian Crossing Improvements</li> <li>▶ Wide Sidewalks</li> </ul>	<ul style="list-style-type: none"> <li>▶ At-Grade Intersection Capacity Improvements</li> <li>▶ Roundabouts</li> <li>▶ Medians</li> <li>▶ Frontage Road</li> </ul>
Eliminated	<ul style="list-style-type: none"> <li>▶ Light Rail</li> <li>▶ Shared Bus/ Bike Lane</li> </ul>		<ul style="list-style-type: none"> <li>▶ Attached Sidewalks</li> </ul>	<ul style="list-style-type: none"> <li>▶ Additional Travel Lanes</li> <li>▶ Grade-Separated Intersection Improvements</li> <li>▶ HOV Lanes</li> </ul>

Based on the feedback provided, four alternatives for the corridor and three for the residential areas were developed that integrate the desired design features. These alternatives were evaluated in the Level 2 screening using qualitative and quantitative criteria to determine how well the alternative supported the adopted study goals and achieved the desired vision. The benefits of tradeoffs for each alternative are presented in Tables 3 - 7.

Ultimately, Alternative 2: Enhance Non-Car modes was recommended as the conceptual design for Broadway because it best fits the current and future priorities of the surrounding communities. The proposed design supports the goals of enhancing the livability and safety on Broadway by dedicating space for high-capacity transit, pedestrians, and bicyclists.

**Vehicle Mobility:** Maintains the existing vehicle capacity through Littleton and Centennial while enhancing the transit experience.

**Transit Mobility:** Dedicates space for high-capacity transit through Denver and Englewood to increase the frequency and reliability of service.

**Bicycle Mobility:** Enhances bicycle facilities to increase connectivity to the broader network and encourage mode shift for shorter trips.

**Pedestrian Mobility:** Activates the streetscape by providing places for people to gather and businesses to expand operations.

**Safety:** Features design elements such as narrower lane widths, reduced turn radii, medians, and raised driveways proven to reduce vehicle speeds.

**Economic Development:** Drives private investment and development that aligns with the jurisdictions' comprehensive plans.





**TABLE 3: MAXIMIZE NON-CAR MODES (1)**

Description	Benefits	Tradeoffs
<p>Alternative 1 de-emphasized personal automobile travel and separates all travel modes. Features included:</p> <ul style="list-style-type: none"> <li>▶ Dedicated transit lanes</li> <li>▶ Wide, detached sidewalks</li> <li>▶ Raised bikeways</li> <li>▶ Expanded curb space for seating, art, or landscaping</li> <li>▶ On-street parking (where appropriate)</li> </ul>	<ul style="list-style-type: none"> <li>▶ Corridor-wide investment in safety infrastructure</li> <li>▶ Significant decrease in vehicle traffic on Broadway</li> <li>▶ Greatest shift to alternative travel modes (transit, bike, walking)</li> <li>▶ Significant investment in transit service and reliability (5-minute service)</li> <li>▶ Greatest potential to attract private investment</li> <li>▶ Potential for emission reductions and air quality improvements</li> </ul>	<ul style="list-style-type: none"> <li>▶ Increased traffic on parallel routes, such as Santa Fe Drive and University Boulevard</li> <li>▶ Congestion during peak periods based on existing daily volumes</li> <li>▶ Increased spacing between bus stations, which may result in longer walking distances to destinations</li> </ul>

**TABLE 4: ENHANCE NON CAR-MODES (2)**

Description	Benefits	Tradeoffs
<p>Alternative 2 enhanced all travel modes except personal automobile travel. Features included:</p> <ul style="list-style-type: none"> <li>▶ Dedicated transit lanes (North of Belleview Avenue)</li> <li>▶ Enhanced bus service (South of Belleview Avenue)</li> <li>▶ Wide, detached sidewalks</li> <li>▶ Raised bikeways</li> <li>▶ Expanded curb space for seating, art, or landscaping</li> <li>▶ On-street parking (where appropriate)</li> </ul>	<ul style="list-style-type: none"> <li>▶ Major enhancements to user safety</li> <li>▶ Significant decrease in vehicle traffic north of Belleview Avenue</li> <li>▶ Significant investment in transit service and reliability north of Belleview Avenue (5-minute service)</li> <li>▶ Increased comfort for pedestrians and bicyclists</li> <li>▶ Will attract private investment and development at mobility hubs</li> <li>▶ Alignment with vision and goals for all communities along Broadway</li> </ul>	<ul style="list-style-type: none"> <li>▶ Less reliable transit service south of Belleview Avenue</li> <li>▶ Increased traffic on parallel routes such as Santa Fe Drive</li> <li>▶ Increased traffic south of Belleview Avenue due to regional growth</li> <li>▶ Congestion during peak periods based on existing daily volumes</li> <li>▶ Increased spacing between bus stations, which may result in longer walking distances to destinations</li> </ul>

**TABLE 5: MAXIMIZE ACTIVE TRANSPORTATION (3)**

Description	Benefits	Tradeoffs
<p>Alternative 3 provided additional space for active transportation while maintaining existing car capacity. Features included:</p> <ul style="list-style-type: none"> <li>▶ Enhanced bus service</li> <li>▶ Existing car capacity</li> <li>▶ Wide, detached sidewalks</li> <li>▶ Raised bikeways</li> <li>▶ Expanded curb space for seating, art, or landscaping</li> <li>▶ On-street parking (where appropriate)</li> </ul>	<ul style="list-style-type: none"> <li>▶ Major improvements to pedestrian and bicyclist comfort and safety</li> <li>▶ Some enhancements to user safety</li> <li>▶ Significant investment in transit service (5-minute service)</li> <li>▶ Less congestion during peak periods</li> </ul>	<ul style="list-style-type: none"> <li>▶ Less reliable transit due to mixed traffic lanes</li> <li>▶ Increased traffic on Broadway due to regional growth</li> <li>▶ Will attract less private investment compared to other alternatives</li> </ul>

**TABLE 6: MAXIMIZE PEDESTRIAN MOBILITY (4)**

Description	Benefits	Tradeoffs
<p>Alternative 4 maximized pedestrian mobility. Features included:</p> <ul style="list-style-type: none"> <li>▶ Dedicated transit lanes (North of Belleview Avenue)</li> <li>▶ Enhanced Bus Service (South of Belleview Avenue)</li> <li>▶ Wide, detached sidewalks</li> <li>▶ Off-Broadway bike routes (North of Belleview Avenue)</li> <li>▶ Shared use path (South of Belleview)</li> <li>▶ Expanded curb space for seating, art, or landscaping</li> <li>▶ On-street parking (where appropriate)</li> </ul>	<ul style="list-style-type: none"> <li>▶ Enhancements to user safety</li> <li>▶ Significant decrease in vehicle traffic north of Belleview Avenue</li> <li>▶ Significant investment in transit service and reliability north of Belleview Avenue (5-minute service)</li> <li>▶ Will attract private investment and development at mobility hubs</li> </ul>	<ul style="list-style-type: none"> <li>▶ Less reliable transit south of Belleview Avenue</li> <li>▶ Lack of dedicated bike facilities on Broadway – Sherman Street Bikeway from Denver through Englewood and transitions to shared use path south of Belleview Avenue</li> <li>▶ Increased traffic on parallel routes such as Santa Fe Drive</li> <li>▶ Increased traffic south of Belleview Avenue due to regional growth</li> <li>▶ Significant congestion during peak periods based on existing daily volumes</li> <li>▶ Increased spacing between bus stations may result in longer walking distances to destinations</li> </ul>

**TABLE 7: RESIDENTIAL CONCEPT**

Frontage Road	
Benefits	Tradeoffs
<ul style="list-style-type: none"> <li>▶ Greatest potential to reduce transportation conflicts</li> <li>▶ Slow traffic in front of homes</li> <li>▶ Provides comfortable space for bicyclists and pedestrians</li> <li>▶ Creates physical buffer between homes and the high-volume corridor</li> <li>▶ Retains on-street parking</li> </ul>	<ul style="list-style-type: none"> <li>▶ Limits turn movements</li> <li>▶ Access concerns for emergency vehicles</li> <li>▶ No space for dealership truck deliveries to park on-street</li> </ul>



## PEDESTRIAN IMPROVEMENTS

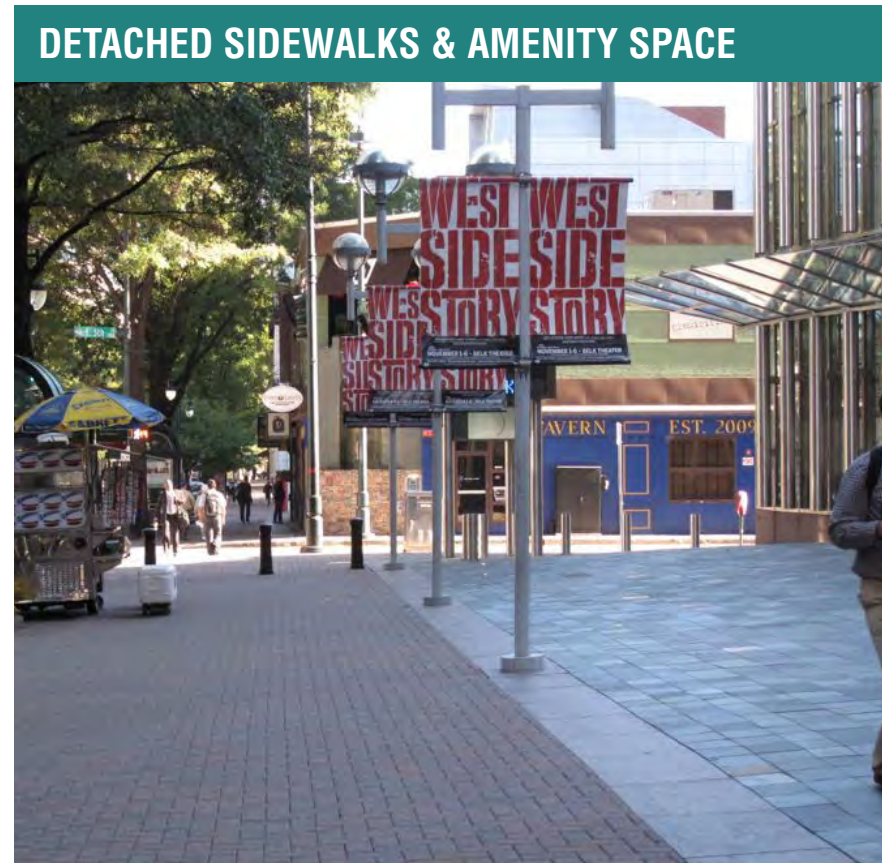
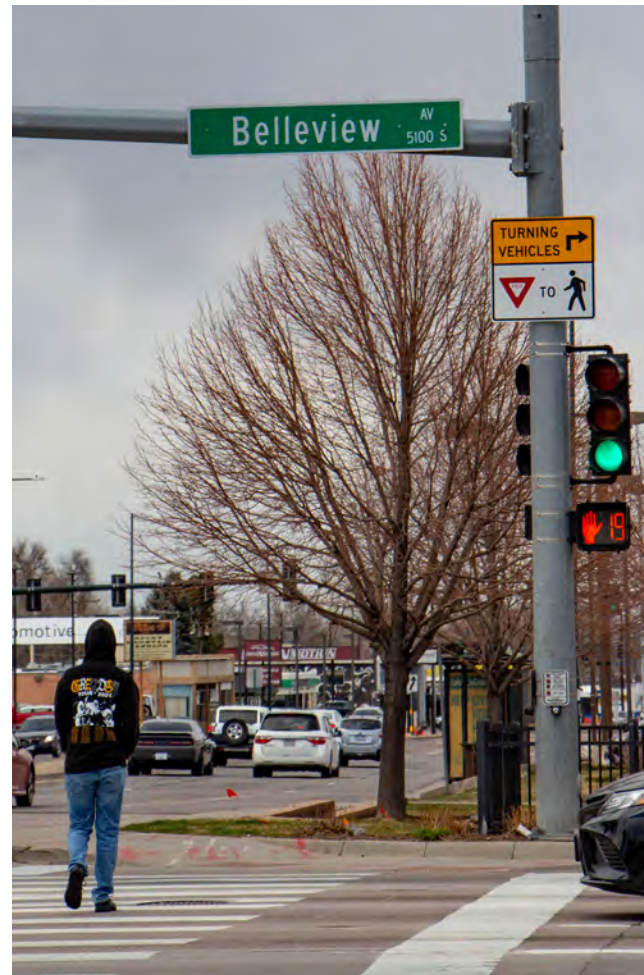
Enhancing the environment for people walking along Broadway is essential to improving the quality and livability of the surrounding communities. Stakeholders, community members, and prior planning efforts, including the **2021 Englewood Downtown Plan** and the **2018 Centennial NEXT Comprehensive Plan**, expressed visions for Broadway that build on the existing character of the corridor while embracing a future that recenters on people with:

### Benefits

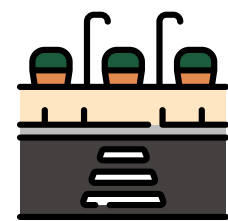
- ▶ Six miles of upgraded, detached sidewalks on each side of the roadway to create a safe and comfortable environment for pedestrians and bicyclists.
- ▶ Attractive streetscape that features street trees, café seating, pedestrian-scale lighting, and community-inspired artwork.
- ▶ New destinations where people can shop, eat, and gather with friends and family.

### Tradeoffs

- ▶ Reduction in parking north of Belleview Avenue.
- ▶ While properties will retain access, improvements may result in the removal of some driveways.



**Detached Sidewalks & Amenity Space:** Detached sidewalks are physically separated from the roadway by a buffer zone, such as landscaping or pedestrian amenities (seating, bike racks, etc.). This creates a more pleasant and safer pedestrian experience.



To get closer to zero deaths and serious injuries:

**2** new midblock crossings installed

**27** signalized intersections retrofitted with safety features

### Community Engagement

The lack of pedestrian safety and comfort along Broadway is a common concern. Community members expressed hesitation about crossing Broadway or avoiding it altogether because of high vehicle speeds, narrow sidewalks, and an unpleasant environment. Improving safety and enhancing bicycle and pedestrian were high priorities for the communities.

- 91% are very concerned about safety
- 72% want safer and more comfortable crosswalks
- 69% want improved sidewalks



**Crossing Improvements:** Enhanced crossing improvements such as prioritized crossing signals, enhanced lighting, signage, refuge islands, and shorter crossing distances.

## TRANSIT IMPROVEMENTS

Broadway is identified as a regional bus rapid transit (BRT) corridor in DRCOG's **2050 Metro Vision Regional Transportation Plan**. To further that vision, this study recommends dedicated transit lanes from I-25 to Belleview Avenue with 5-minute service throughout the day. South of Belleview Avenue, 5-minute service would continue in mixed traffic to Highlands Ranch Parkway with the potential to transition to a full BRT system in the future as land uses change and ridership increases.

### Benefits

- ▶ Dedicated transit lanes north of Belleview, and speed and reliability treatments south of Belleview would keep buses on time and on schedule.
- ▶ Intersection treatments, including transit signal priority (TSP) and queue jump lanes, would improve reliability. Enhanced transit stops feature high-quality shelters with comfortable seating and real-time arrival information.
- ▶ RTD modeling projects that 5-minute service could increase corridor ridership in 2050 by up to 175% compared to a baseline scenario.

### Tradeoffs

- ▶ Increased traffic on parallel routes such as Santa Fe Drive and Logan Street.
- ▶ Increased travel delays at several intersections, including Evans Avenue, Belleview Avenue, Arapahoe Road, and County Line Road.
- ▶ South of Belleview Avenue, bus travel times may be impacted by traffic congestion.



**Travel time from Downtown Denver to Highlands Ranch via transit reduced from:**

*1 Hour* (Today)

*~30 Minutes* (Future)

These improvements would make transit travel times competitive with a personal vehicle.



**Side Running BRT:** Dedicated space for transit within the right-of-way to provide frequent and high-volume transit service.




**Stop Enhancements:** High-quality shelters, real-time arrival information, and off-board fare collection improve transit attractiveness, accessibility, and operations.

*Community Engagement*

As an already high-performing corridor for RTD, community members expressed a need for transit operations and conditions to be improved on Broadway, especially in sections of Denver and Englewood.

- 54% of respondents indicated that transit operations and stop improvements is important to them.



## BICYCLE IMPROVEMENTS

The recommended bikeway along Broadway would be a high-comfort facility that better integrates with bikeways in the greater Denver area. The bikeway would be raised and integrated into the sidewalk space, clearly delineated from pedestrians and vehicles. Its width would provide ample space for bicycles, e-bikes, and scooters to comfortably share the facility.

### Benefits

- ▶ Raised bikeways to create a high level of comfort for bicyclists of all ages and abilities.
- ▶ Protected intersections to decrease high-speed vehicle turns, improve sight lines, and reduce crossing times.
- ▶ Improved east-west connectivity to enhance the regional bike network.
- ▶ Improved trail access and wayfinding to the regional trail system.

### Tradeoffs

- ▶ Reduction in parking north of Belleview Avenue.
- ▶ While properties would retain access, improvements may result in the removal of some driveways.
- ▶ Dedicated bicycle and/or pedestrian signal time may increase delay for turning vehicles.
- ▶ Comes at the expense of additional curb-side amenities and pedestrian space.



**Enhanced connectivity to the regional bike network:**

*9 miles* of raised bikeway

*10* improved trail connections and protected intersections



**Off-Street/Raised Bikeway:** Raised bikeways are vertically separated from vehicles and have markers, vertical separation, or barriers that separate them from the pedestrian areas.



**Protected Intersection:** Protected intersections extend the physical separation between cars and people and provide dedicated bicycle signal time to reduce conflict and increase safety.

*Community Engagement*

There are currently few options for bicyclists traveling south past I-25. In Denver and Englewood, there are plans to create a neighborhood bikeway on Sherman Street; however, this facility ends north of Littleton. Many people called out the need for bike facilities on Broadway to enhance safety and provide alternative travel modes.

- 55% want bicycle facilities on Broadway



## ROADWAY IMPROVEMENTS

Broadway is an important corridor for people accessing jobs, goods, services, and freight movement. The recommended roadway improvements increase safety through speed reduction and access management.

### Benefits

- ▶ Medians, right-in/right-out driveway access, and protected left-turn movements at signalized intersections to better manage access and improve safety, efficiency, and capacity on Broadway for all modes.
- ▶ Lane width reductions, tighter turn radii, raised medians, and street trees to calm traffic and reduce speeds and speeding.
- ▶ Improved transit facilities and service shift people out of their cars, resulting in an overall reduction in traffic demand north of Belleview Avenue compared to today.
- ▶ Reduced traffic demand on Broadway north of Belleview Avenue ranges between 12% and 35% less traffic than today, which will reduce noise and pollution and improve safety on the corridor, making it a much more pleasant place to be.

### Tradeoffs

- ▶ Several intersections will lose turn lanes, which may result in additional delays for turning traffic.
- ▶ Access to properties and on-street parking may be reduced to accommodate enhanced bicycle and pedestrian facilities and streetscaping, but access will be safer.
- ▶ Because Broadway will have less capacity to move people in cars, other parallel roads may see additional traffic.

**Broadway will see less traffic overall making it a nicer space for all people and modes.**

Decreased traffic volumes north of Belleview Avenue:

**12% to 35% Reduction**

Increased traffic volumes south of Belleview Avenue:

**6% - 19% Increase**

(Design maintains existing roadway capacity)



**Medians:** Medians are designed to separate opposing lanes of traffic and can come in many different forms. Common median types include raised, painted, and landscaped. The type of median is determined through engineering and cost-benefit analyses.

### Community Engagement

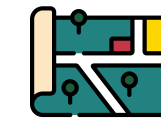
Traffic congestion was consistently a top concern. Many commuters use Broadway as an alternative route to Santa Fe Drive and I-25 and experience a congested corridor at peak times.

- 50% view consistent speeds as important
- 61% want improved business access
- 57% want to reduce congestion

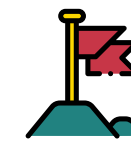


## COMMUNITY HUBS

Community hubs are spaces along Broadway where the surrounding communities can come together and celebrate their unique identities. These hubs create a livelier street by enhancing the pedestrian environment and spurring economic development. They are designed to easily accommodate people accessing them via vehicles, bicycles, transit, or on foot. Community hubs are activity centers that are likely to attract private investment and support the vision for additional transit services and amenities along the corridor.



**Spatial Organization:** Creates a sense of place and a hub within a corridor with an organized layout for clear circulation and connections to surrounding areas.



**Focal Point:** Prominent landmarks or landscape elements become visual anchors and create a memorable identity.



**Social Interaction Spaces:** Public gathering places encourage social interaction.



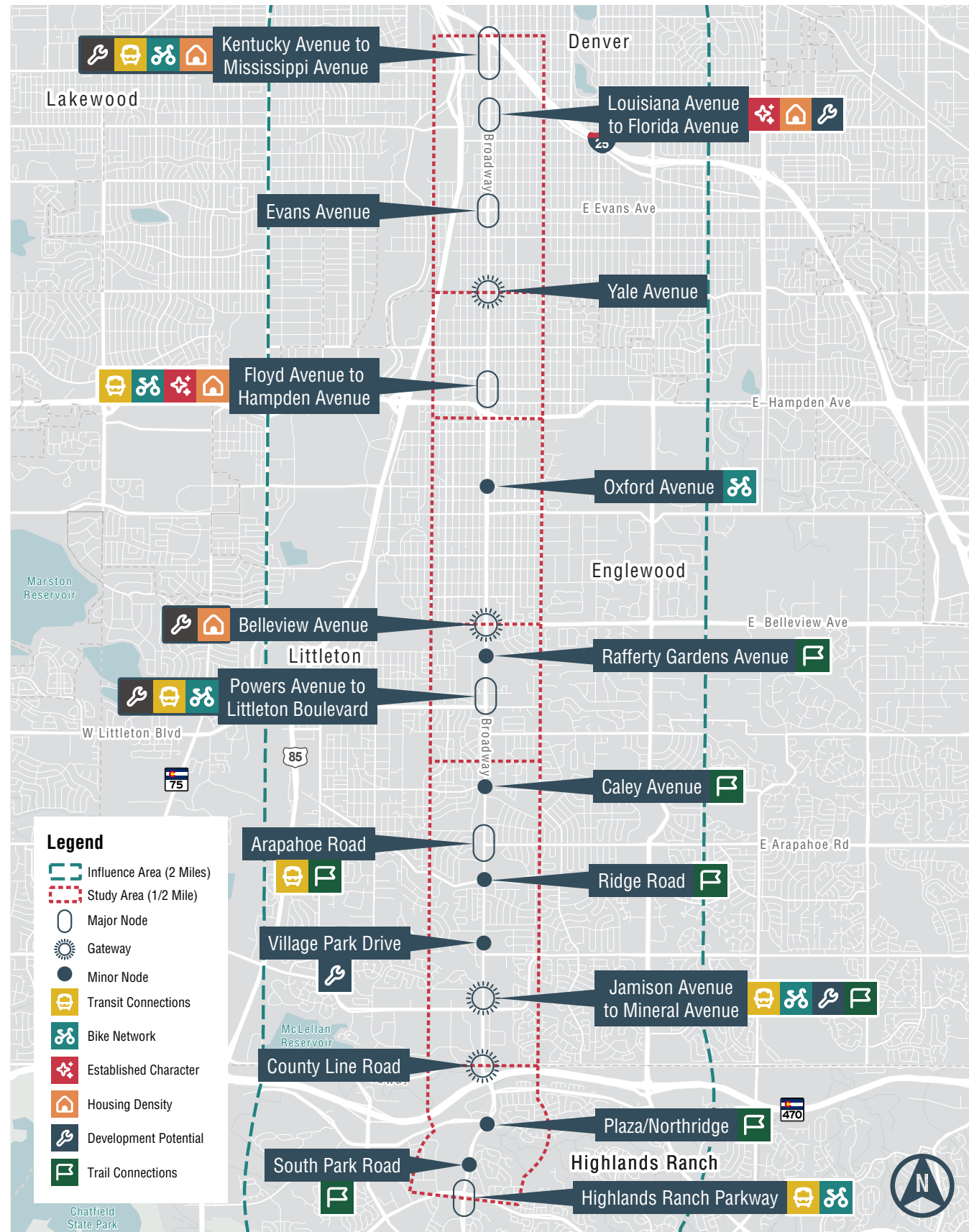
**Green Spaces and Landscape:** Trees and landscape elements contribute to the corridor's character and aesthetics, provide shade, manage stormwater, scale down the street, and improve air quality.



**Connectivity and Accessibility:** Improve connectivity for pedestrians, bicyclists, and transit other users.

The recommendation is for each Character Area to have at least one Major Community Hub and one Minor Community Hub. Both the major and minor nodes will serve as a focal point and junction for various elements and pedestrian-focused functions. They will be strategically designed and developed to enhance connectivity, provide amenities, and create attractive gathering spaces within the corridor. The difference between the major and minor nodes is the number of placemaking amenities used in the node design. Major nodes will be more visually prominent with more types of placemaking elements, whereas minor nodes will have less.

FIGURE 14: BROADWAY COMMUNITY HUBS



Chapter 06

*Character Area Recommendations*



# Character Area 1

## I-25 TO YALE AVENUE

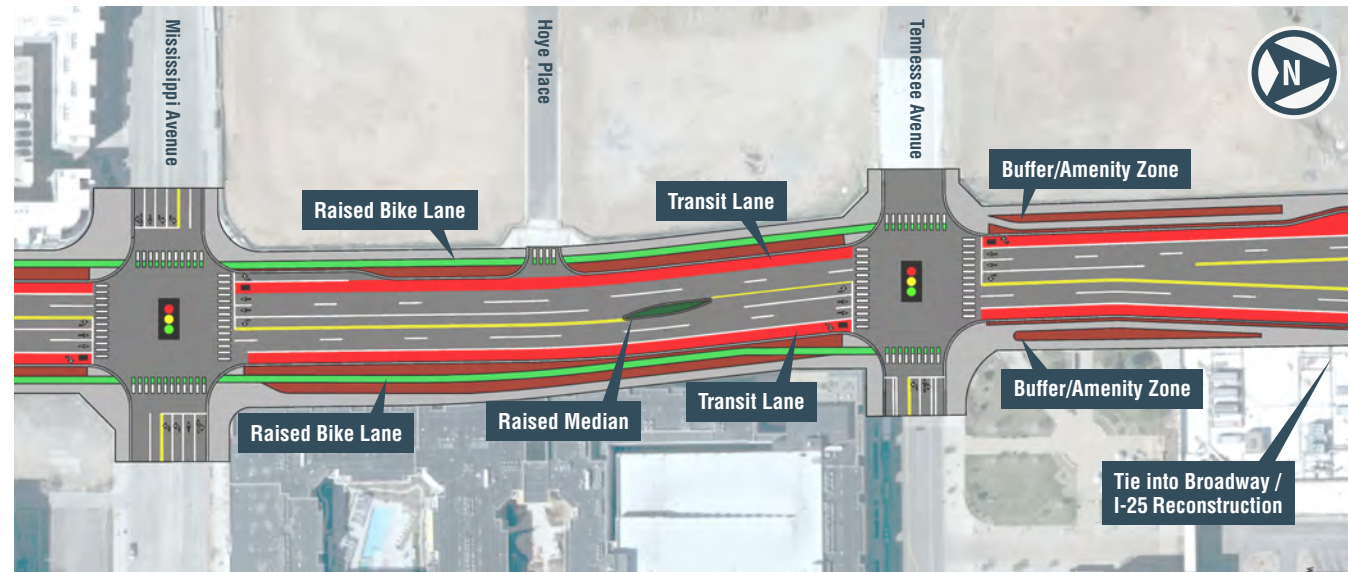
Character Area 1 is envisioned as an inviting urban arterial that prioritizes multimodal safety, comfort, and access to local destinations. The design supports the future vision by extending the existing dedicated transit lanes further north in Denver, expanding space for pedestrians, bicyclists, and amenities, and making intersections smaller and safer to cross for all modes of travel.

Currently, the City and County of Denver is reconstructing the Broadway/I-25 interchange, and the former Gates industrial site is slated for substantial redevelopment. There is potential for some of the corridor recommendations to be implemented in the near term through coordination with these projects.

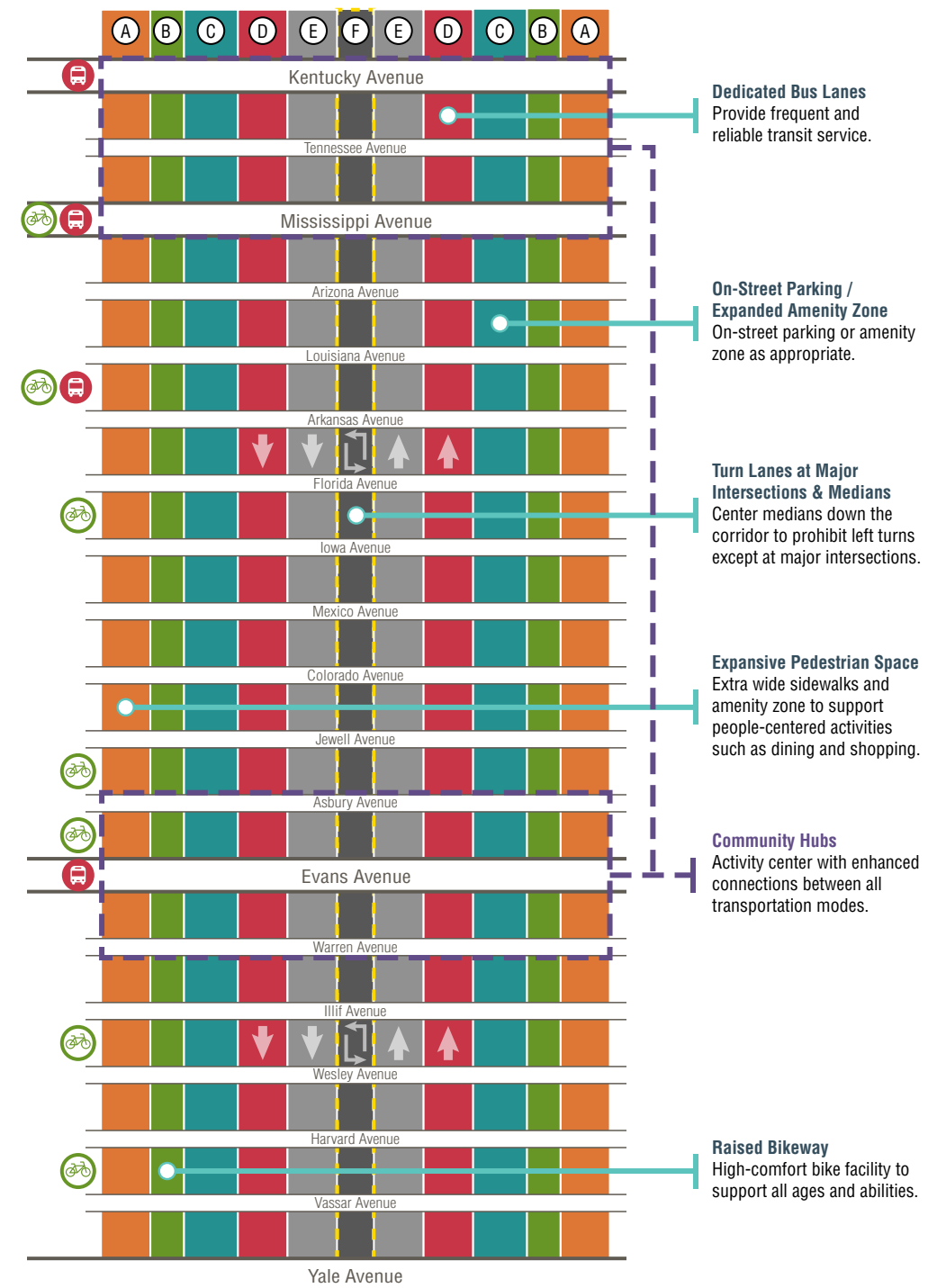
### Implementation Considerations

- Adjust design based on bus routing in and out of the I-25 & Broadway Station
- Adopt measures to protect and mitigate removal of mature trees
- Mitigate potential traffic impacts on parallel streets, such as Logan Street and Sherman Street
- Address applicable environmental requirements, including hazardous materials, water quality, and floodplains

## BROADWAY FROM TENNESSEE AVENUE TO MISSISSIPPI AVENUE



The roadway from Kentucky Avenue to Mississippi Avenue would be narrowed and space extended for raised bike lanes and pedestrian activity. Intersections would be redesigned as protected bike intersections to enhance safety and comfort.



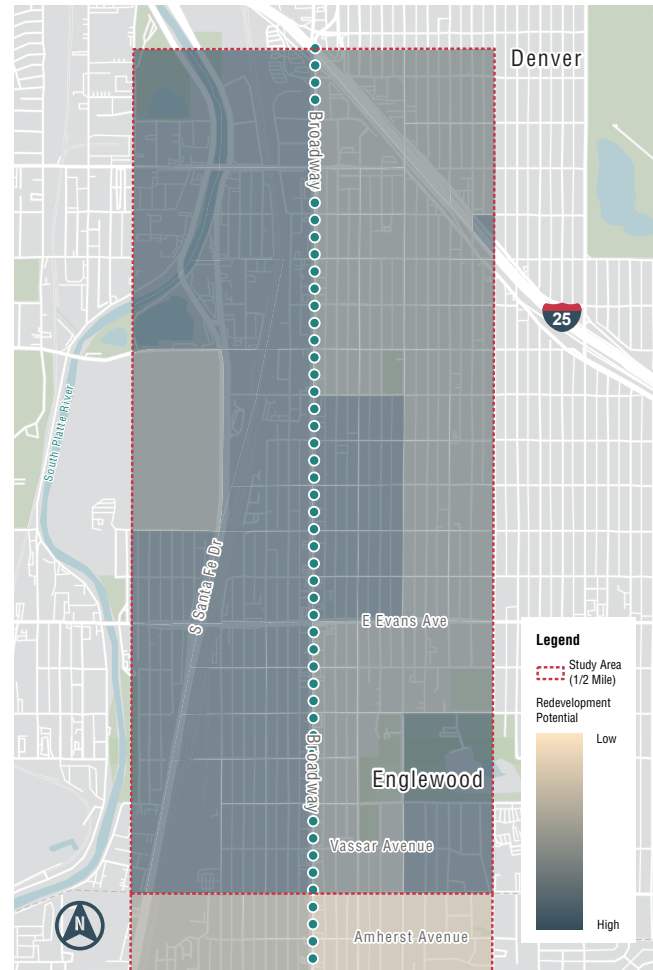
### Legend

- |                                 |                             |                                 |                        |
|---------------------------------|-----------------------------|---------------------------------|------------------------|
| <b>(A)</b> Pedestrian Zone      | <b>(E)</b> Travel Lane      | <b>Existing</b> <b>Proposed</b> | Bike Facility Crossing |
| <b>(B)</b> Raised Bike Lane     | <b>(F)</b> Median/Turn Lane |                                 | Trail Crossing         |
| <b>(C)</b> Amenity Zone/Parking |                             |                                 | Transit Connection     |
| <b>(D)</b> Transit Lane         |                             |                                 |                        |



## Redevelopment Potential

Character Area 1 has a high redevelopment potential due to its proximity to Downtown Denver and the Light Rail Stations. There is a high likelihood the area will attract private investment in the future.



Map reflects where redevelopment is likely to occur based on market forces.

## Redevelopment Patterns



**Primary Land Use**  
Context: Urban Main Street



**Land Use Types:** Retail, office, services, and multifamily housing



**Redevelopment Forecast:** Limited number of parcels for large-scale redevelopment; new business activity to drive demand for new hotels, office space, and healthcare facilities

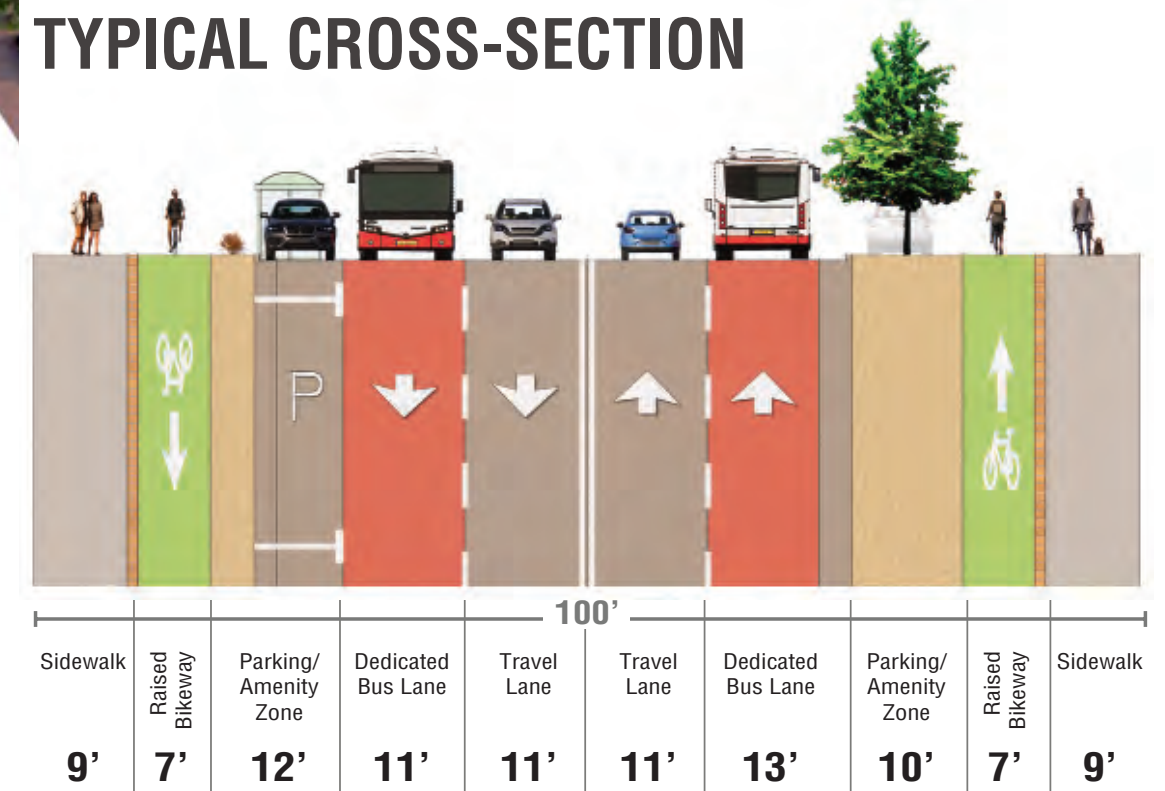


**Building Form:** Up to five stories with the ground floor used for retail or structured parking

## TYPICAL BLOCK LAYOUT



## TYPICAL CROSS-SECTION



# Character Area 2

## YALE AVENUE TO US 285

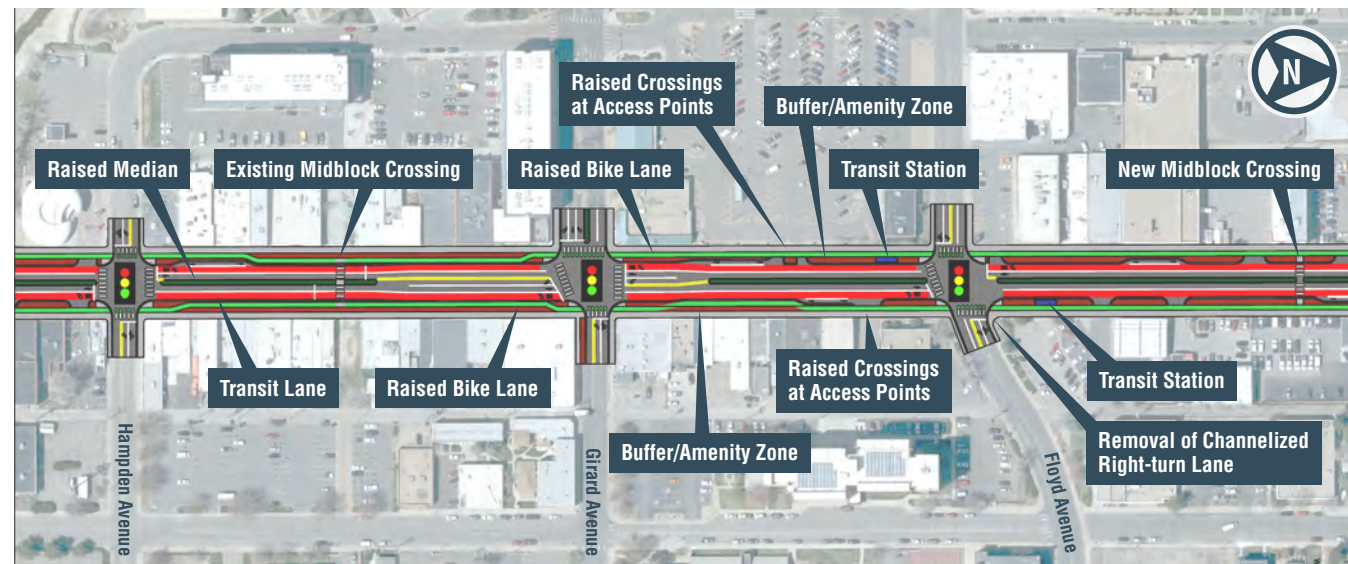
Character Area 2 is envisioned as a low-speed, urban arterial that encourages people to walk, bike, or take transit to local businesses in and around downtown Englewood. The future corridor will expand upon the mixed-use character of downtown with more housing options and main street businesses. The design supports the vision by expanding space for amenities and placemaking, creating more comfortable pedestrian, transit, and biking infrastructure, and promoting a lively street scene by accommodating access via all modes of travel.

The City of Englewood is currently reconstructing the Broadway and US 285 interchange and constructing complete street improvements along Broadway. There is potential for portions of the corridor recommendations to be implemented in the near future through coordination with these projects. There are also additional east-west bikeways planned that will improve connectivity between Broadway and nearby parallel bikeways.

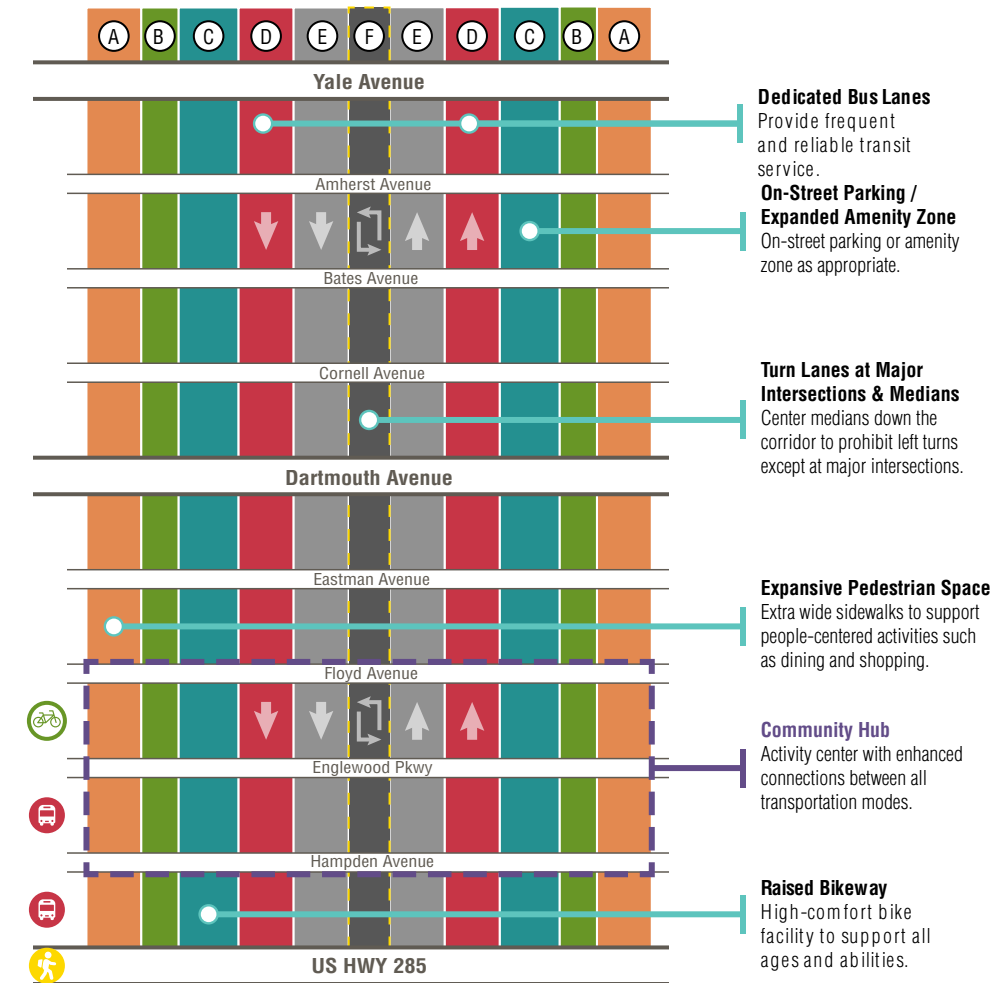
### Implementation Considerations

- Evaluate parking and loading needs for businesses on Broadway
- Mitigate potential traffic impacts on parallel streets such as Logan Street and Sherman Street
- Address applicable environmental requirements, including hazardous materials and historic resources

## DOWNTOWN ENGLEWOOD



To activate Downtown Englewood, the raised bikeway would shift to provide space for businesses to extend into the public realm. Intersections would be redesigned to shorten crossing distances. A limited number of parking spaces would be included for quick access and deliveries to businesses.



### Legend

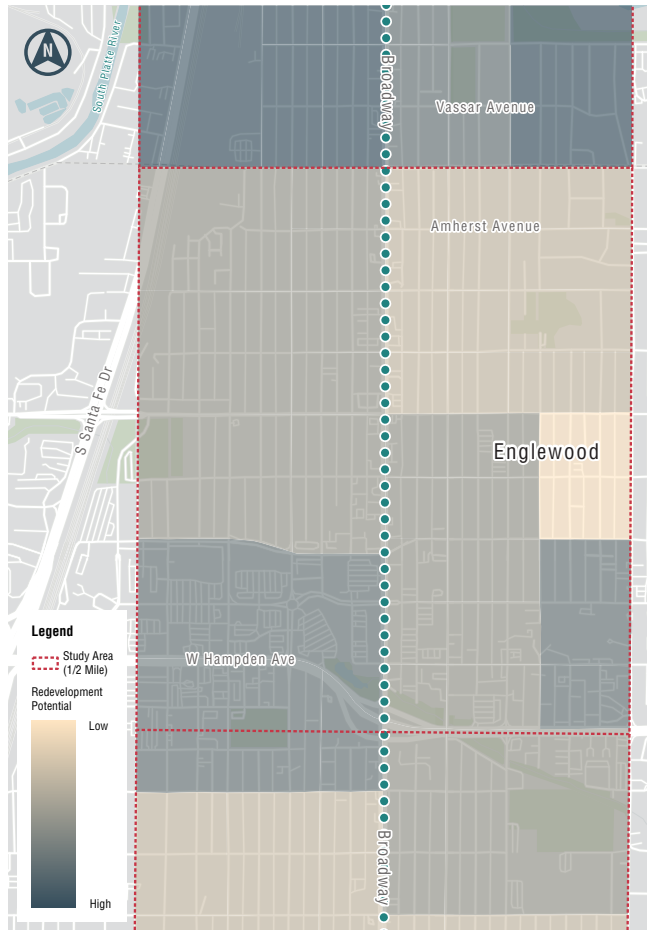
- |                                 |                             |                                 |                        |
|---------------------------------|-----------------------------|---------------------------------|------------------------|
| <b>(A)</b> Pedestrian Zone      | <b>(E)</b> Travel Lane      | <b>Existing</b> <b>Proposed</b> | Bike Facility Crossing |
| <b>(B)</b> Raised Bike Lane     | <b>(F)</b> Median/Turn Lane |                                 | Trail Crossing         |
| <b>(C)</b> Amenity Zone/Parking |                             |                                 | Transit Connection     |
| <b>(D)</b> Transit Lane         |                             |                                 |                        |





## Redevelopment Potential

There is moderate redevelopment potential within Character Area 2, specifically near the Englewood Civic Center, Swedish Medical Center, and Craig Hospital.



Map reflects where redevelopment is likely to occur based on market forces.

## Redevelopment Patterns

**Primary Land Use Context:** Urban Main Street & Main Street

**Land Use Types:** Retail, office, services, and multifamily housing

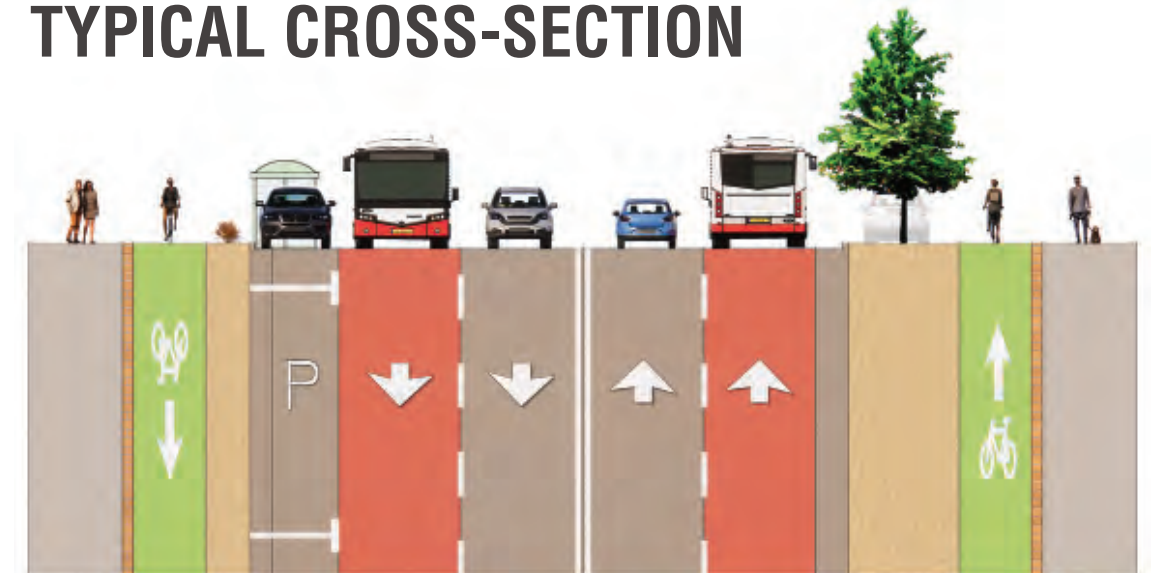
## TYPICAL BLOCK LAYOUT

### Community Hub Elements

- ▶ Gateway signage
- ▶ Specialty pavers
- ▶ Covered bike parking
- ▶ Landscaping
- ▶ String lights
- ▶ Artwork



## TYPICAL CROSS-SECTION



100'									
Sidewalk	Raised Bikeway	Parking/Amenity Zone	Dedicated Bus Lane	Travel Lane	Travel Lane	Dedicated Bus Lane	Parking/Amenity Zone	Raised Bikeway	Sidewalk
9'	7'	12'	11'	11'	11'	13'	10'	7'	9'

### Redevelopment Forecast:

- ▶ **Urban Main Street:** Limited number of parcels for large-scale redevelopment; new business activity to drive demand for new hotels, office space, and healthcare facilities
- ▶ **Main Street:** Stand-alone retail will be concentrated around community hubs and major intersections; mid-rise office, with structured parking

### Building Form:

- ▶ **Urban Main Street:** Office buildings up to eight stories in Downtown Englewood, as permitted by existing land use regulations, with ground floor structured parking
- ▶ **Main Street:** Buildings up to five stories with upper floors used for residential or office space and ground floor for structured parking

# Character Area 3

## US 285 TO BELLEVIEW AVENUE

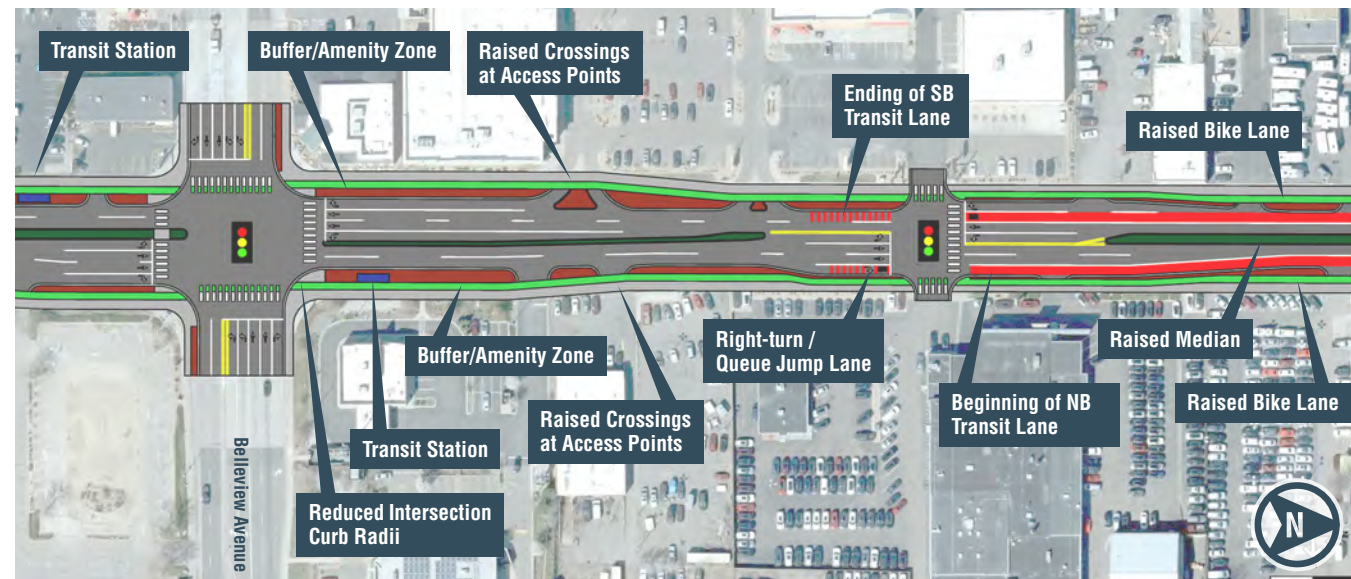
Character Area 3 is envisioned to be more like the northern portion of Broadway – denser, main street development, reduced vehicular speeds, and aesthetically pleasing. It will continue to act as a transition zone between the more Urban Main Street context further north and the more Suburban context further south. The design supports the vision by reallocating underutilized public right-of-way from inefficient vehicular travel and storage to efficient and comfortable pedestrian, transit, and bicycle infrastructure. This combination will enhance the user experience for people walking, biking, and taking transit and provide more space for placemaking treatments.

In this section, the corridor transitions from dedicated transit lanes to mixed traffic lanes just north of Belleview Avenue. As the Broadway/US 285 interchange reconstruction moves forward, Little Dry Creek Trail crossing enhancements and gateway features for Downtown Englewood will be incorporated as near-term improvements.

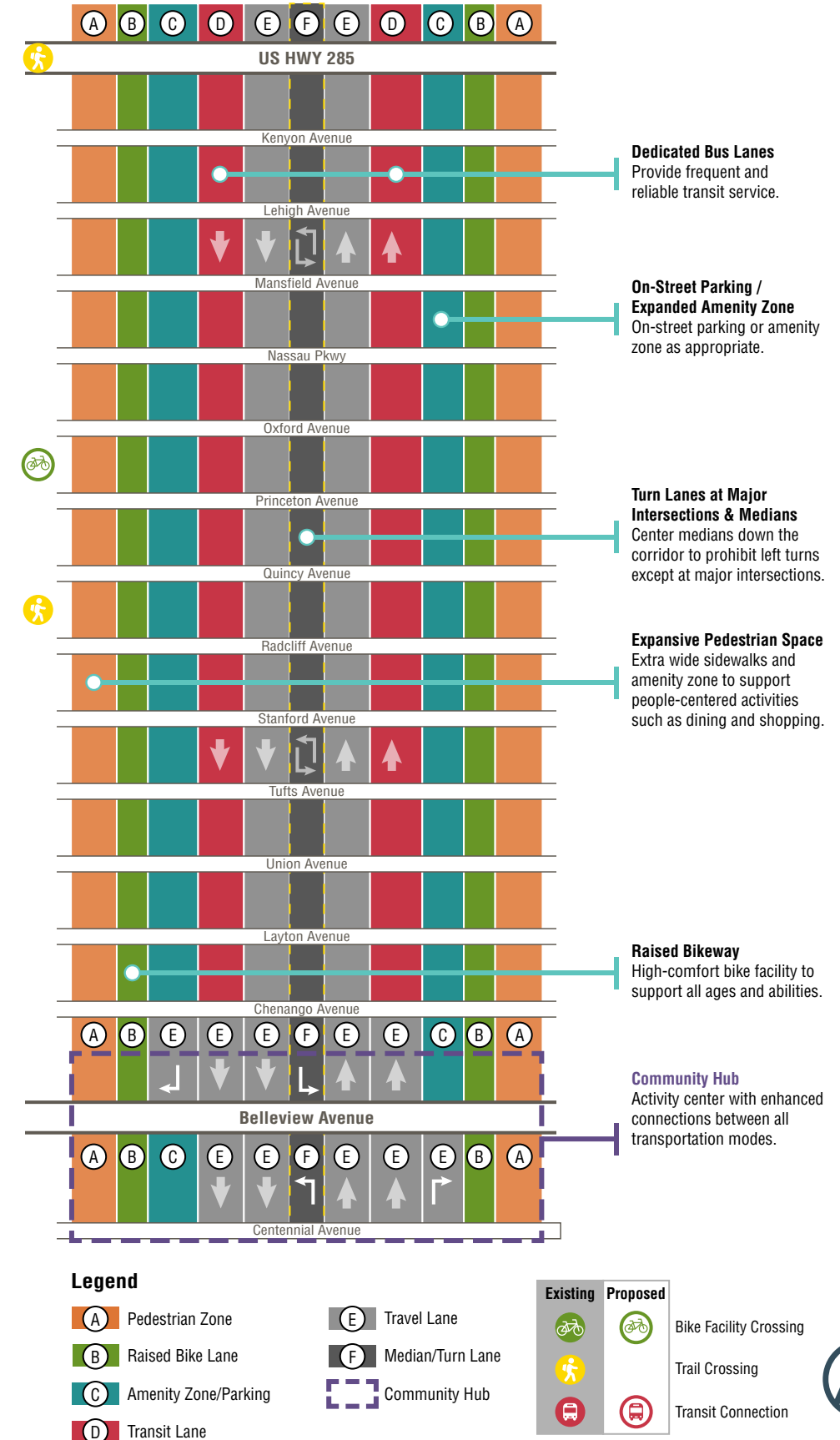
### Implementation Considerations

- Evaluate parking and loading needs for businesses on Broadway
- Manage and consolidate access points to improve safety and comfort for people walking and biking
- Address applicable environmental requirements, including hazardous materials, historic resources, and floodplains.
- Avoid and minimize impacts to trails that cross the corridor

## BROADWAY AND BELLEVIEW AVENUE

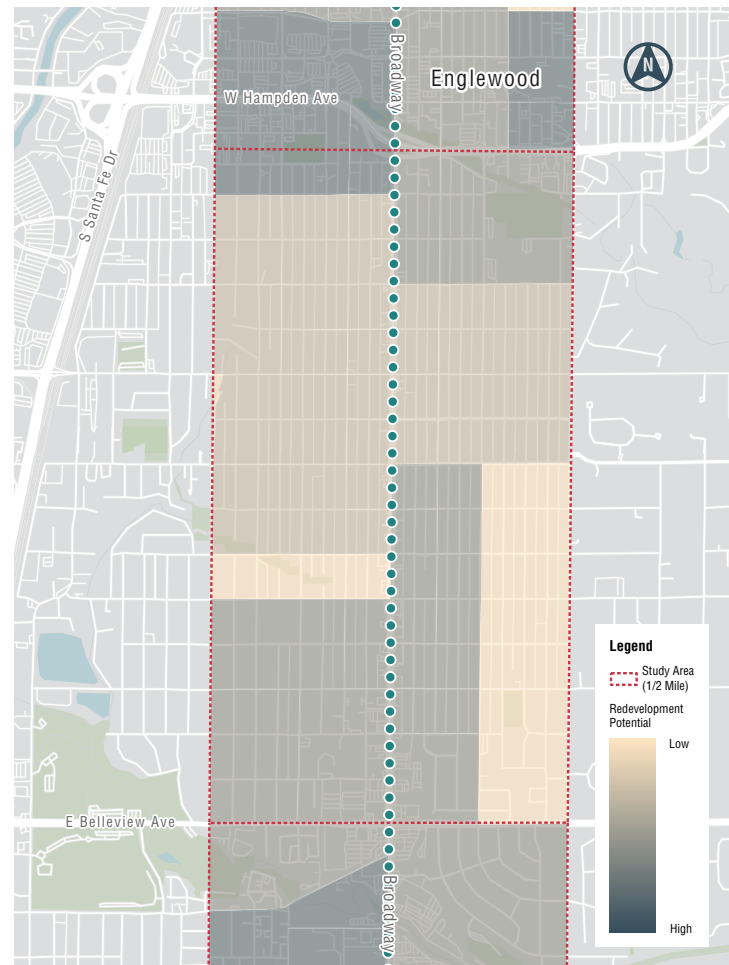


At Belleview Avenue, dedicated bus lanes would transition to mixed travel lanes while maintaining high-frequency service. The intersection features two through lanes to accommodate the heavier traffic volume.



## Redevelopment Potential

Character Area 3 has low to moderate redevelopment potential due to smaller lot sizes. Any substantial redevelopment efforts would necessitate parcel consolidation facilitated by a single developer. However, smaller-scale, single-use projects are anticipated to materialize within this area.

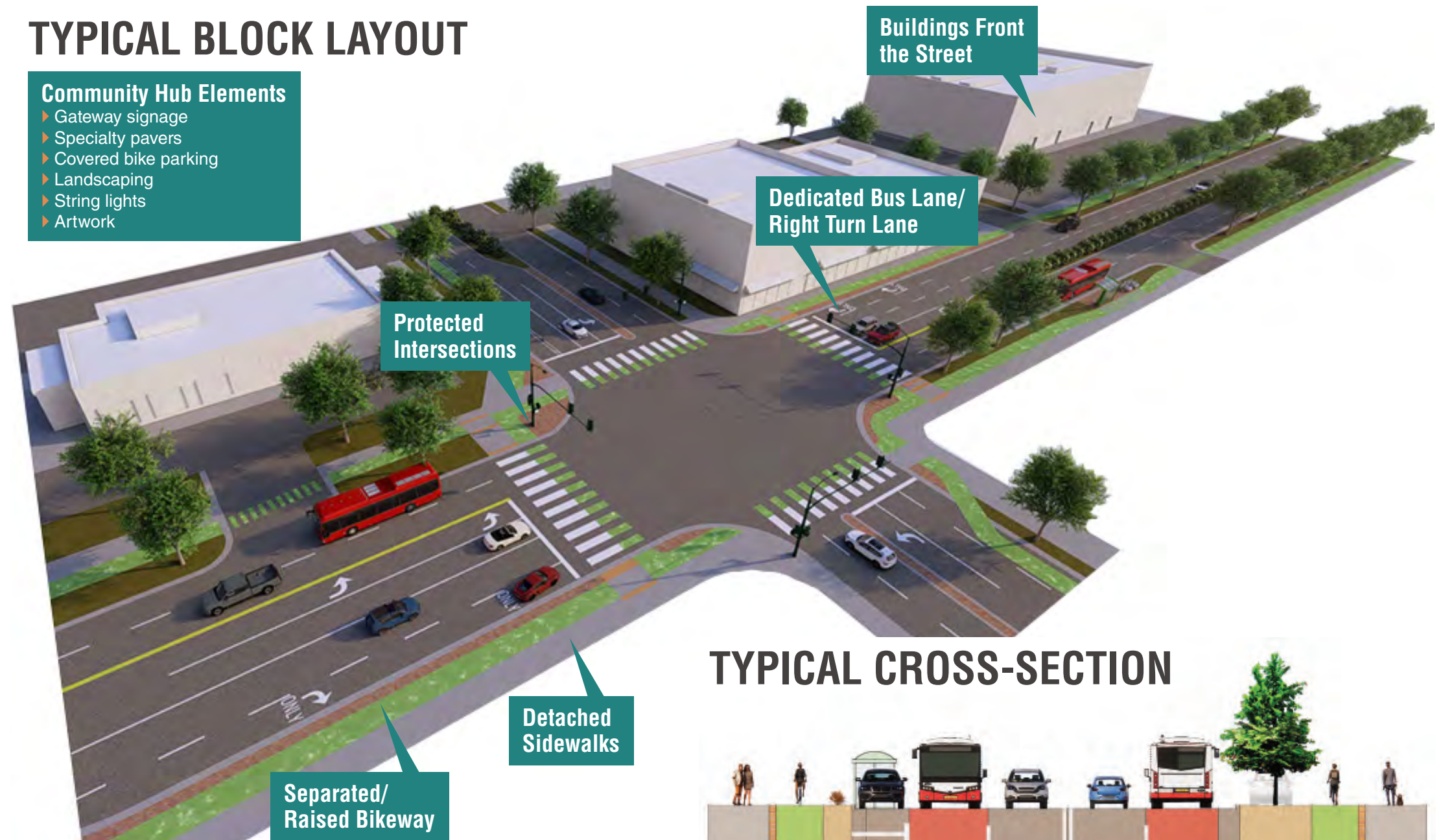


Map reflects where redevelopment is likely to occur based on market forces.

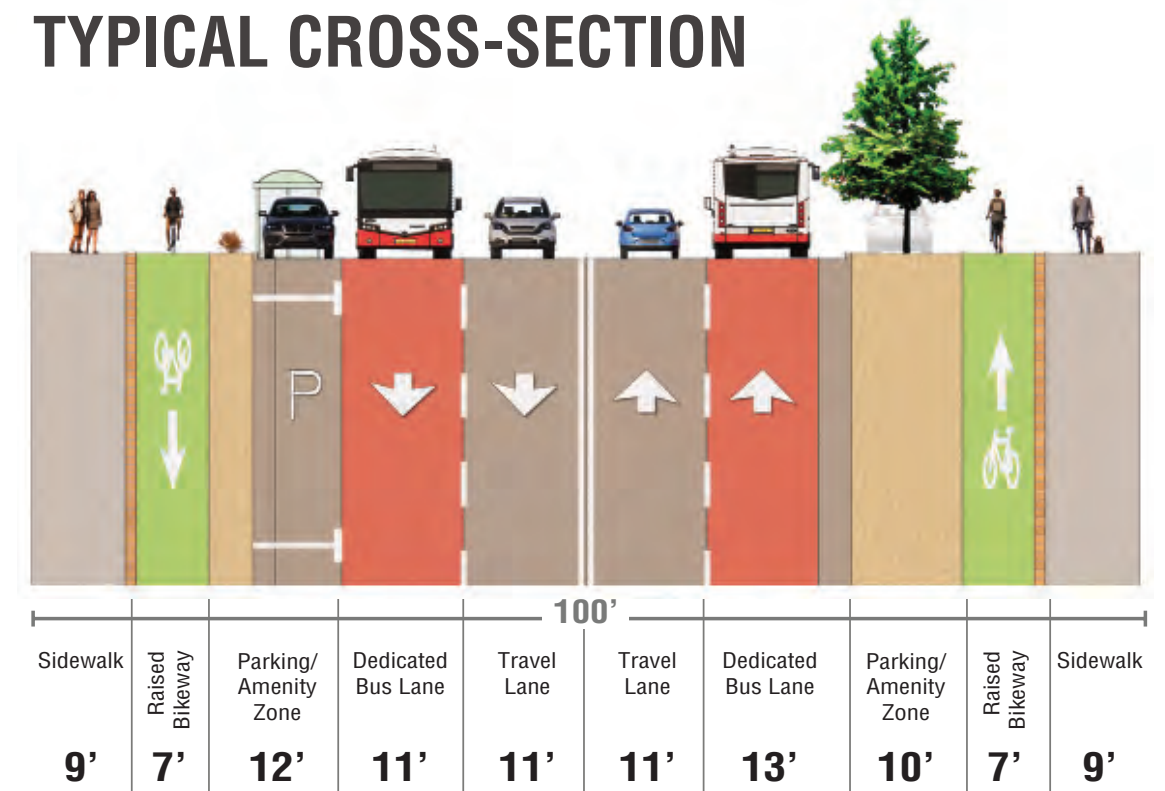
## TYPICAL BLOCK LAYOUT

### Community Hub Elements

- ▶ Gateway signage
- ▶ Specialty pavers
- ▶ Covered bike parking
- ▶ Landscaping
- ▶ String lights
- ▶ Artwork



## TYPICAL CROSS-SECTION



## Redevelopment Patterns



**Primary Land Use Context:**  
Main Street



**Redevelopment Forecast:** Stand-alone retail and office will be concentrated around community hubs and major intersections; hotel uses will be constructed in response to increased employment driving demand for overnight stays; economic pressure will likely be insufficient to support mixed-use development



**Land Use Types:** Retail, office, services, multifamily housing, and single-family housing



**Building Form:** Buildings up to five stories with upper floors used for residential or office space and ground floor for structured parking

# Character Area 4

## BELLEVIEW AVENUE TO CALEY AVENUE

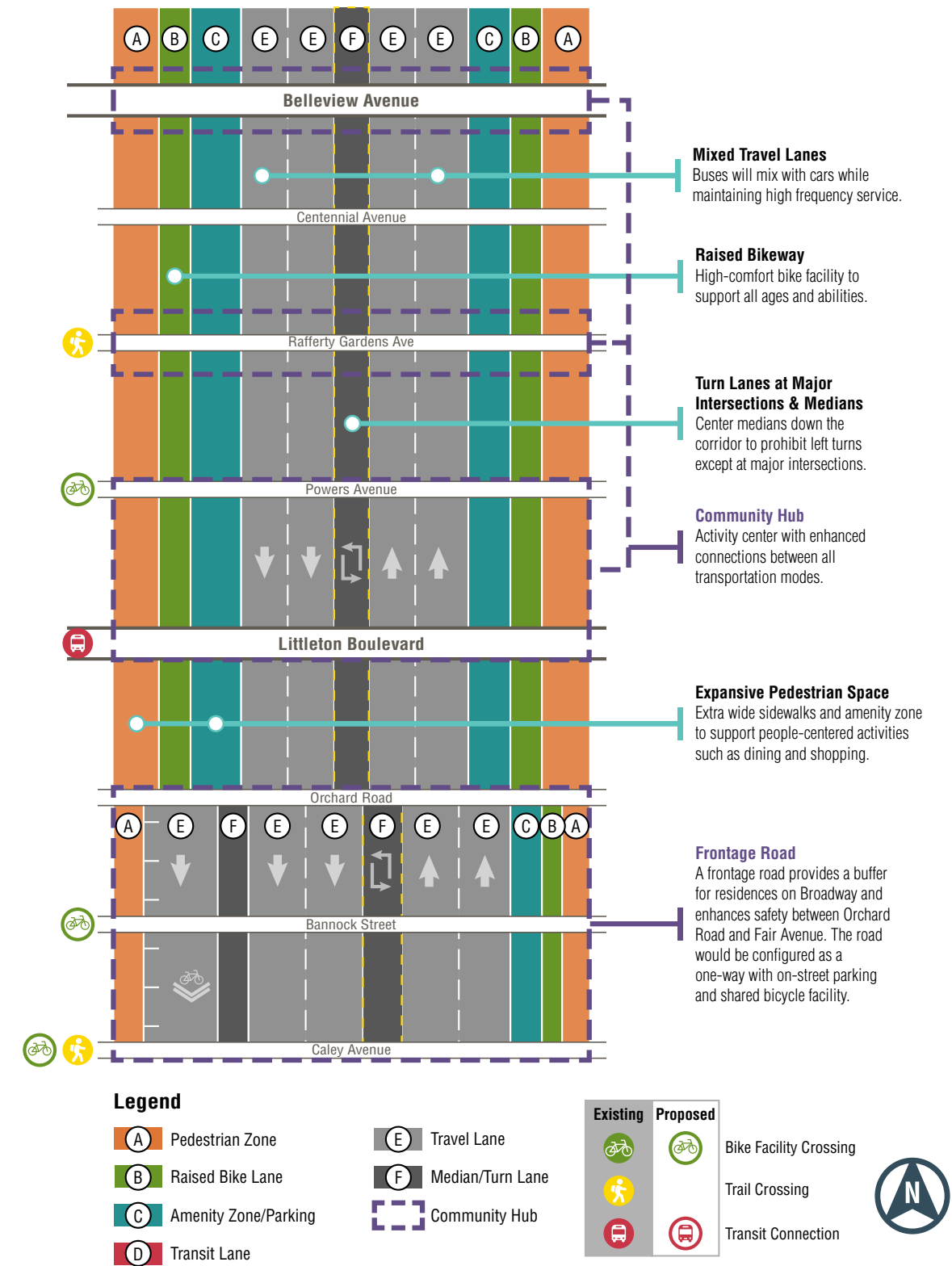
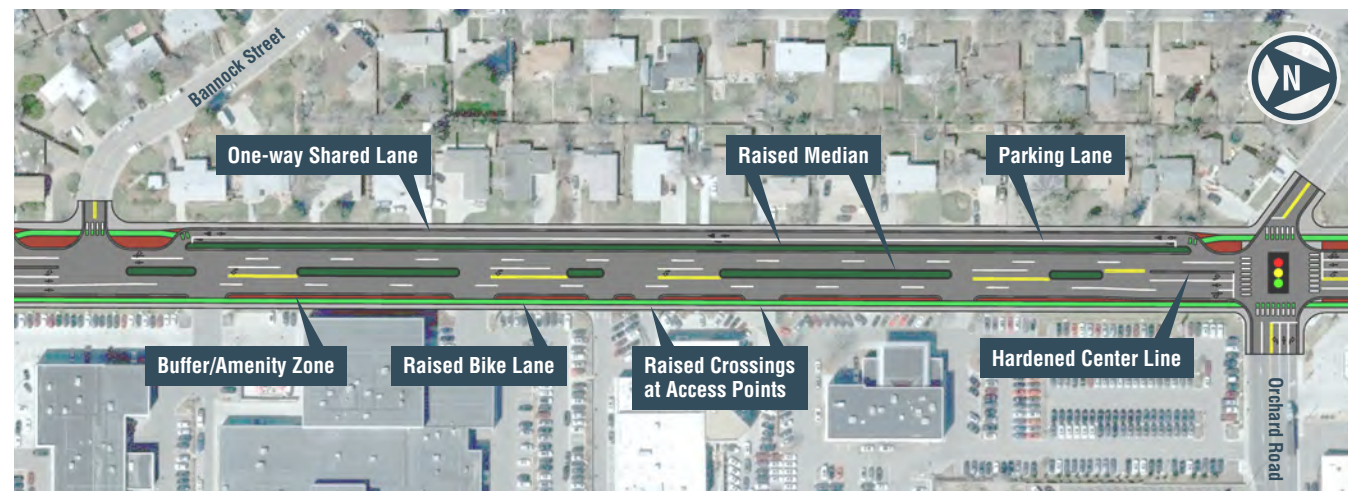
Character Area 4 is envisioned as a less car-centric arterial that maintains its suburban character and functionality while better-serving users of transit and active travel modes like biking and walking. Land uses are likely to undergo subtle changes with the redevelopment of large commercial lots that integrate a mix of uses and are less car-dependent. Because the surrounding street network is suburban and curvilinear, there are few parallel alternate routes for any mode of travel. For this reason, this area comfortably accommodates bicyclists and pedestrians on Broadway to improve regional connectivity. The design supports the vision by significantly widening space above the curb for active transportation buffered from traffic by a landscaped amenity zone, creating smaller and safer intersections, and providing a buffer between traffic and homes that front the corridor.

The City of Littleton is currently redesigning the Littleton Boulevard intersection and is considering options for a future bicycle facility on Littleton Boulevard. This study recommends a new connection to the Big Dry Creek Trail on the east side of Broadway to provide more direct access to the trail users from neighborhoods to the east. There is potential to coordinate the recommendations with these projects as they move toward implementation.

### Implementation Considerations

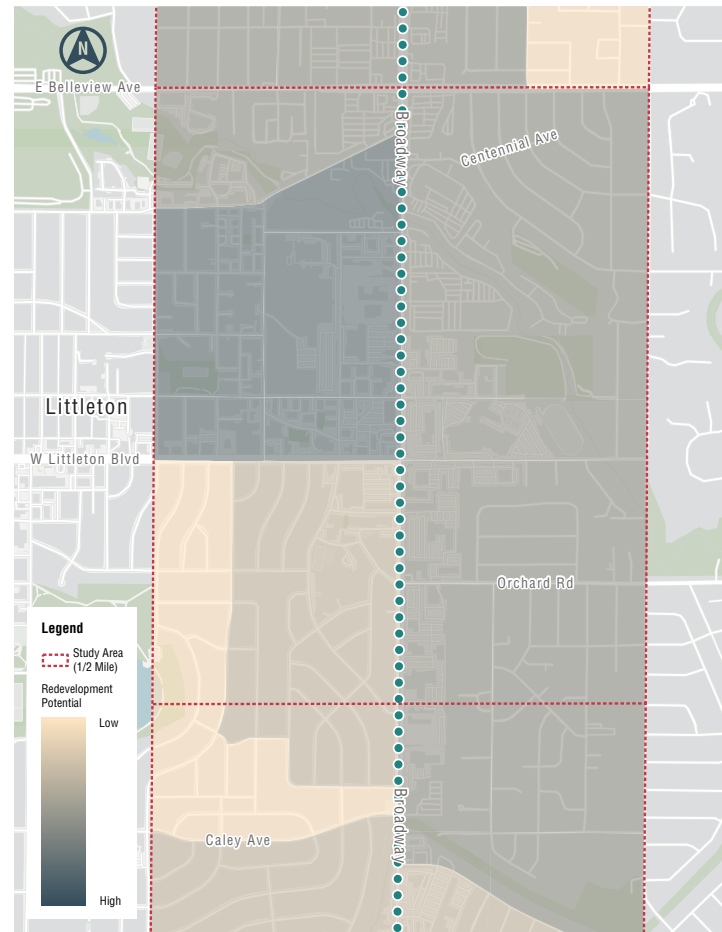
- Evaluate parking and loading needs for businesses on Broadway
- Manage and consolidate access points to improve safety and comfort for people walking and biking
- Address applicable environmental requirements, including hazardous materials, historic resources, and floodplains.
- Avoid and minimize impacts to the Big Dry Creek Trail

## BROADWAY FROM ORCHARD ROAD TO BANNOCK STREET



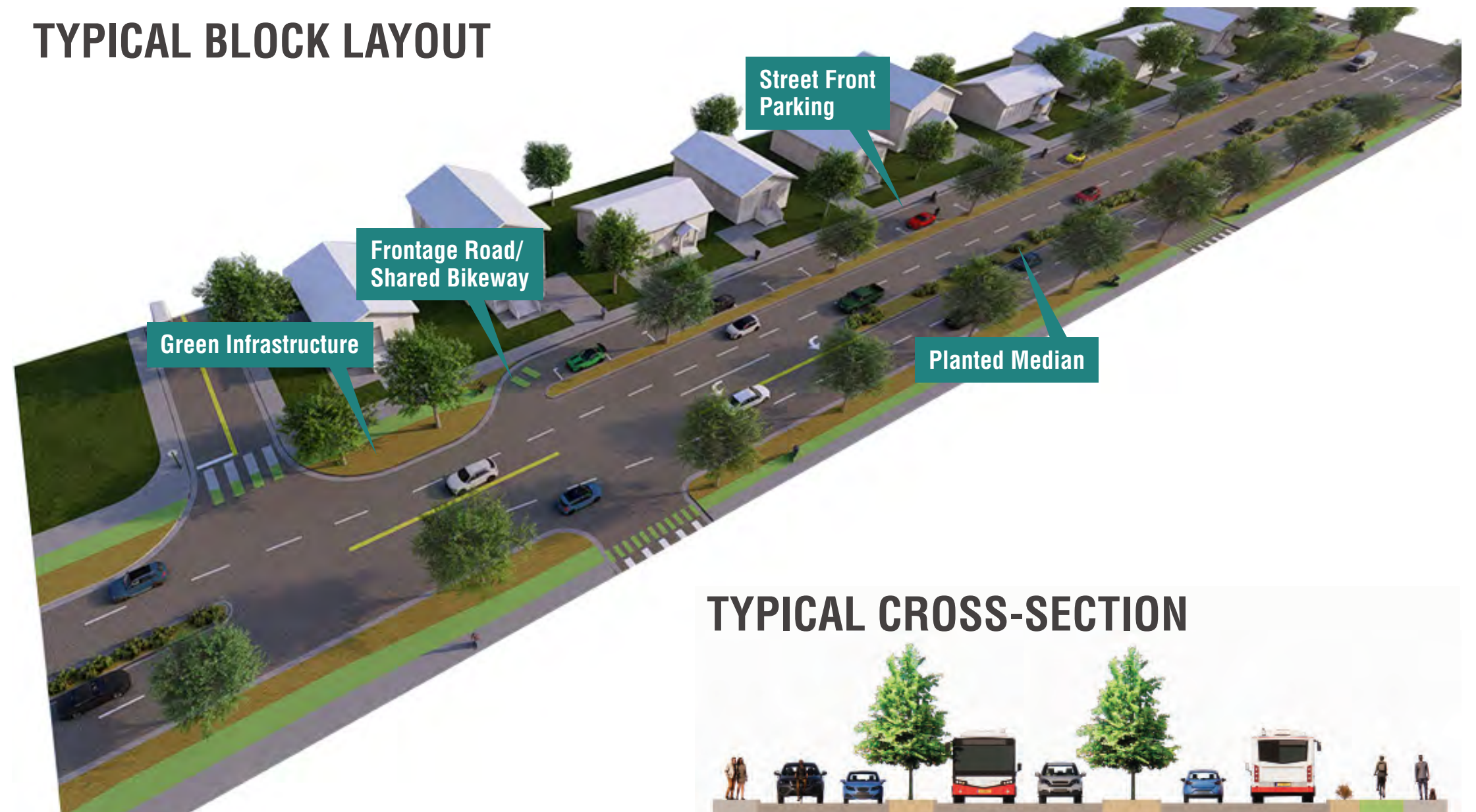
## Redevelopment Potential

The map below indicates moderate to high redevelopment opportunities within Character Area 4. Many of the medium-sized parcels in the area are poised for redevelopment.



Map reflects where redevelopment is likely to occur based on market forces.

## TYPICAL BLOCK LAYOUT



## Redevelopment Patterns



**Primary Land Use Context:** Suburban Commercial



**Redevelopment Forecast:** Low-rise multifamily residential and office development; retail concentrated in stand-alone centers, with a combination of mid-box and ancillary shops

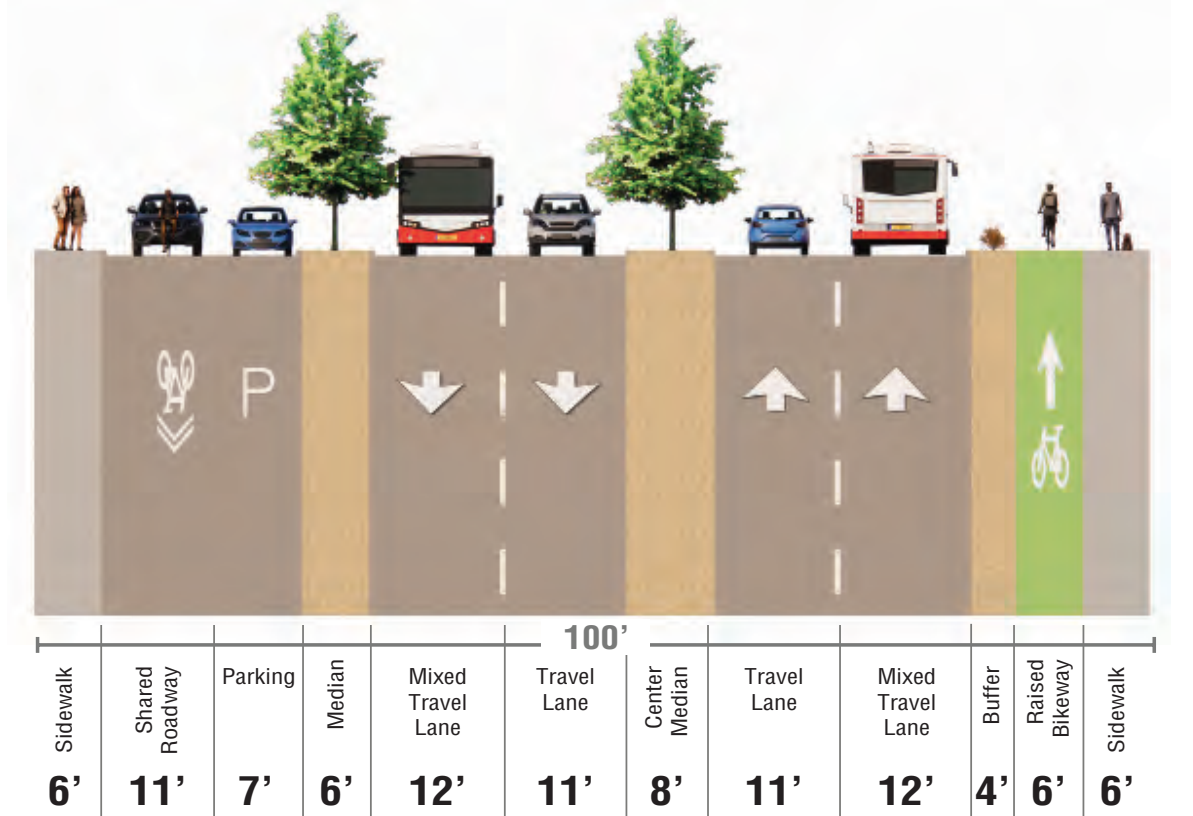


**Land Use Types:** Retail, office, services, multifamily housing, and single-family housing



**Building Form:** Buildings up to five stories with upper floors used for residential or office space; Stand-alone one-story retail; surface parking

## TYPICAL CROSS-SECTION



# Character Area 5

## CALEY AVENUE TO COUNTY LINE ROAD

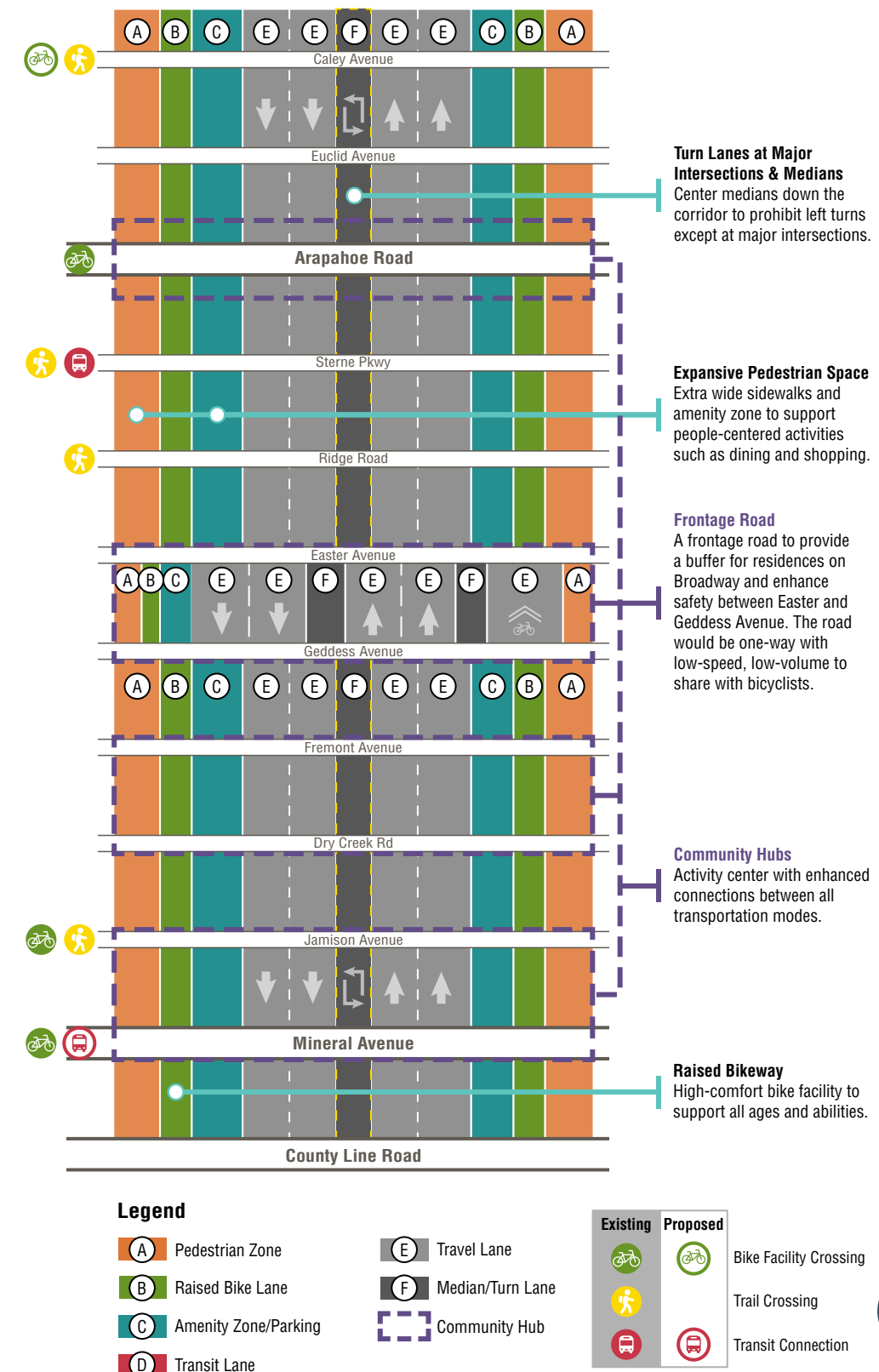
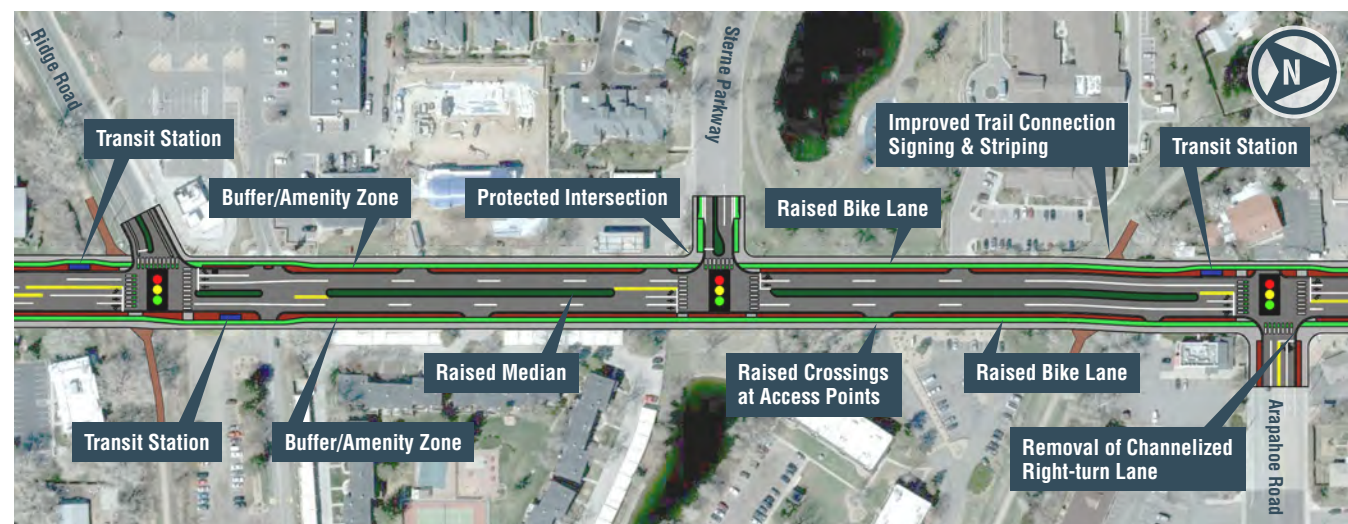
Character Area 5 is envisioned as a multimodal arterial that maintains its suburban character and functionality while better-serving users of transit and active modes. The area is well-positioned for significant redevelopment in the future due to its regional connectivity, market demand, and high-income households. The design supports the vision by significantly widening space above the curb for active transportation buffered by a landscaped amenity zone, providing a buffer between homes that front the corridor and the adjacent roadway and enhancing the numerous regional trail crossings.

Upcoming projects include a trail underpass planned south of Arapahoe Road and the construction of east-west bicycle facilities on Euclid Avenue, Sterne Parkway, and Ridge Road. There is potential for some of the corridor recommendations to be implemented in the near term through coordination with these projects, such as protected intersections and improved wayfinding.

### Implementation Considerations

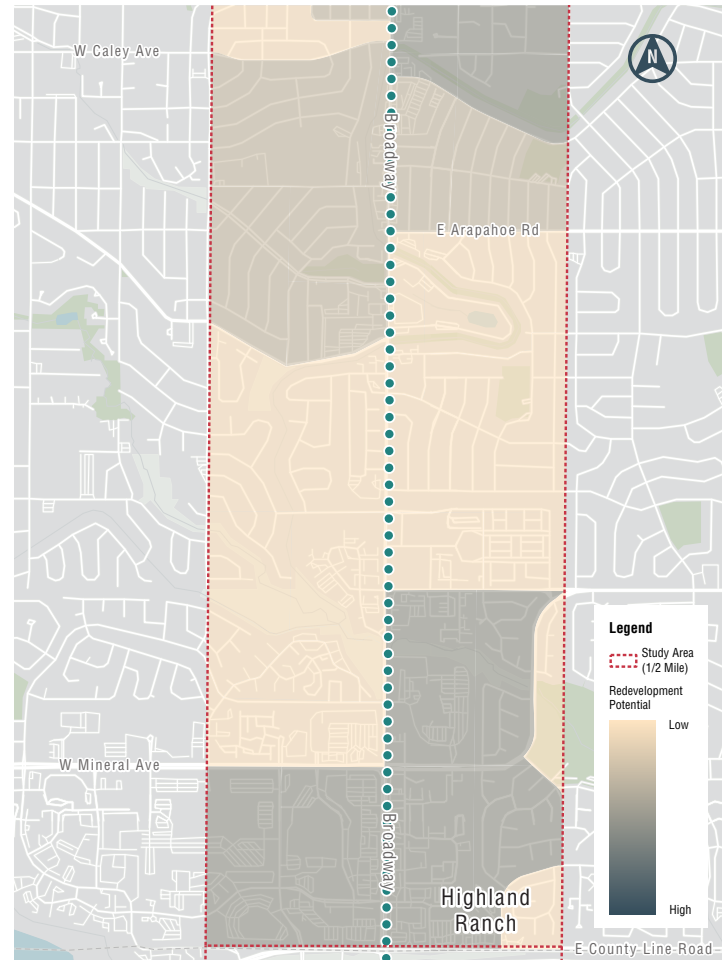
- Manage and consolidate access points to improve safety and comfort for active users
- Coordinate with existing or planned intersection improvement projects
- Coordinate with homeowners along Broadway as the Broadway frontage road concept moves forward
- Address applicable environmental requirements, including hazardous materials and floodplains.
- Avoid and minimize impacts to the High Line Canal and the Highline Canal Trail

## BROADWAY AND ARAPAHOE ROAD: HIGHLINE CANAL CROSSINGS



## Redevelopment Potential

The map below shows moderate redevelopment potential within Character Area 5. Redevelopment will be concentrated near Littleton Village due to aging shopping centers and the planned expansion of Littleton Village.

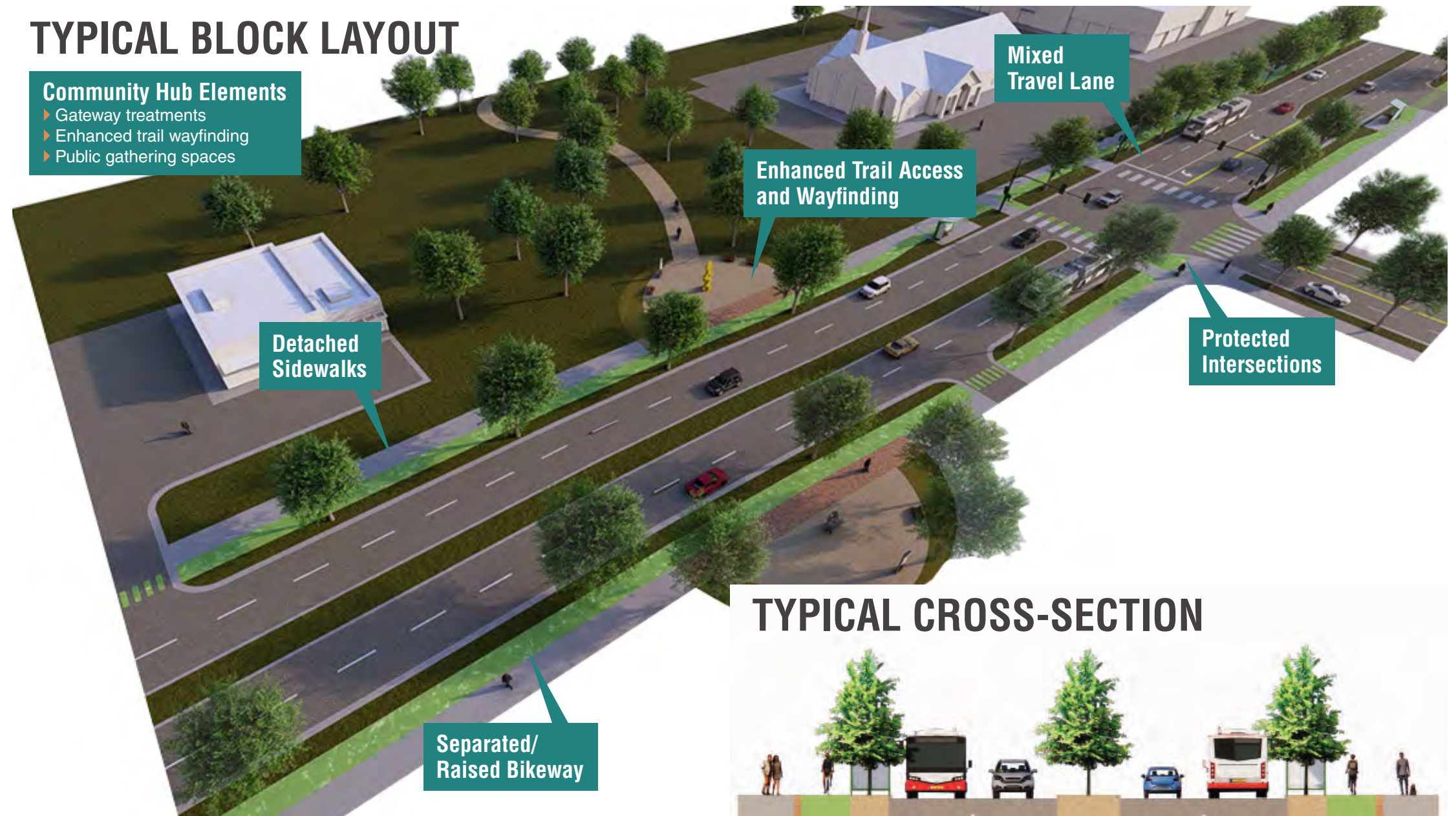


Map reflects where redevelopment is likely to occur based on market forces.

## TYPICAL BLOCK LAYOUT

### Community Hub Elements

- ▶ Gateway treatments
- ▶ Enhanced trail wayfinding
- ▶ Public gathering spaces



## TYPICAL CROSS-SECTION



Sidewalk	Raised Bikeway	Amenity Zone	Dedicated Bus Lane	Travel Lane	Center Median	Travel Lane	Dedicated Bus Lane	Amenity Zone	Raised Bikeway	Sidewalk
9'	7'	5'6"	12'	12'	9'	12'	12'	5'6"	7'	9'

## Redevelopment Patterns



**Primary Land Use Context:** Suburban and Suburban Commercial



**Redevelopment Forecast:** Conventional retail concentrated in stand-alone centers; town homes as a buffer to existing single-family homes; mixed-use multifamily and office redevelopment



**Land Use Types:** Retail, office, services, multifamily housing, and single-family housing



**Building Form:** Buildings up to five stories with upper floors used for residential or office space; stand-alone one-story retail; surface parking

# Character Area 6

## COUNTY LINE ROAD TO HIGHLANDS RANCH PARKWAY

Douglas County and Highlands Ranch do not have immediate needs to improve this section of Broadway. However, there are safety issues for drivers and active transportation users that need to be addressed. Between 2015 and 2019, 293 crashes were recorded along Broadway between Dad Clark Drive and Highlands Ranch Parkway; this was identified as a safety hot spot compared to other areas of Broadway. Broadway in Character Area 6 is envisioned to provide better bicycle facilities, more frequent transit service, and safer facilities for people driving.

- ▶ Total, severe, and fatal crash frequency (crashes per mile) are lower than the corridor average.
- ▶ A higher proportion of the crashes in this Character Area are at or related to intersections.
- ▶ Rear-end and fixed-object crashes had higher representations in the severe crash history for this Character Area than for the rest of the corridor.
- ▶ Broadside and approach turn crashes make up 17% and 14% of the total crash history but 26% and 21% of the severe crash history.

Most severe crashes in the Character Area occurred between 9:00 a.m. and 9:00 p.m.

### Recommendations

Safety concerns in Character Area 6 vary from intersection to intersection, but some general recommendations could be applied throughout. These include reviewing design criteria for horizontal curves, assessing and modifying sight distances and clearance intervals, and implementing protected-only left-turn phasing and right-turn on red restrictions. Widening existing sidewalks along Broadway between County Line Road and Plaza Drive is recommended to improve connectivity between Littleton, the C-470 Trail, and Highlands Ranch's trail system because the existing on-street bike lanes and 5-foot attached sidewalks are not comfortable for most people.

Specific intersection recommendations include:

#### Centennial Boulevard/Dad Clark Drive

- ▶ Improve signal visibility to address rear-end and broadside crash frequency, especially for southbound traffic. Potentially add upstream supplemental signal heads that improve visibility around horizontal curves.
- ▶ Review and modify (as needed) intersection sight distance, stopping sight distance, and yellow/all-red clearance intervals to address broadside and rear-end crashes.

#### Plaza Drive/Northridge Road

- ▶ Review design criteria for southbound traffic on the horizontal curve approaching Plaza Drive/Northridge Road. Consider adding Dynamic Speed Feedback signs.
- ▶ This intersection was recently redesigned with new signal heads with flashing yellow arrows. Monitor crash history to see if the frequency of approach turn crashes has been resolved. If not, consider implementing protected-only phasing by time of day.

#### Southpark Road

- ▶ Vegetation appears to be limiting sight distance for westbound motorists. Conduct a formal review of intersection sight distance to identify opportunities for improvements that address broadside crashes.

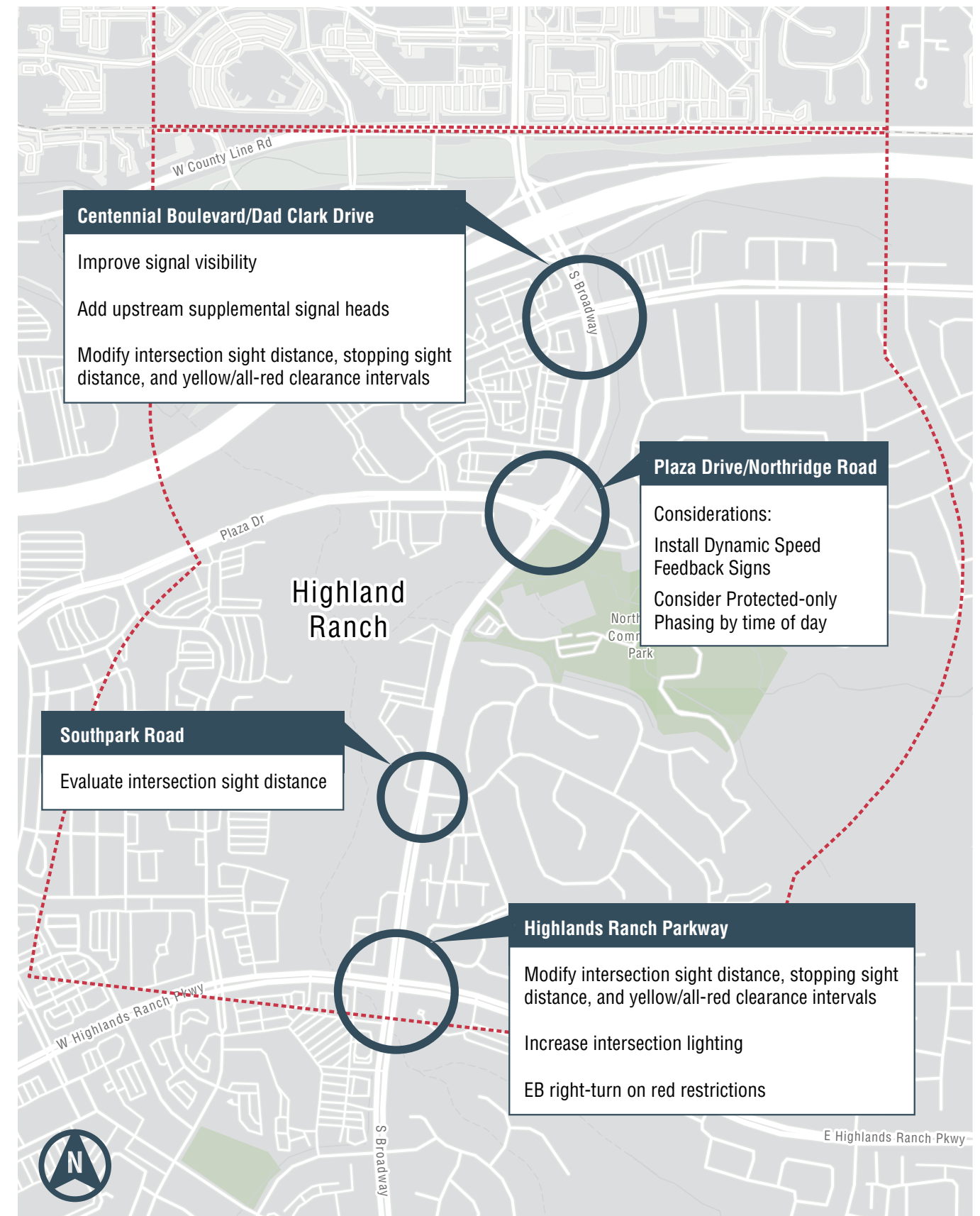
#### Highlands Ranch Parkway

- ▶ Review and modify (as needed) intersection sight distance, stopping sight distance, and yellow/all-red clearance intervals to address broadside and approach turn crashes.
- ▶ Review and increase (as needed) lighting conditions at and approaching the intersection.
- ▶ Consider implementing right-turn-on red restrictions for eastbound motorists.

#### Character Area Recommendation

- ▶ Address applicable environmental requirements, including hazardous materials and floodplains.
- ▶ Avoid and minimize impacts to the Centennial Trail.

FIGURE 15: CHARACTER AREA 6 RECOMMENDATIONS





Chapter 07

# Economic Revitalization



## Economic Revitalization

The introduction of reliable and frequent transit service on Broadway, coupled with enhanced bicycle and pedestrian amenities, presents a bright future for the corridor. The economic development potential on the corridor is significant based on employment forecasts, increased household spending, and strong commercial tenants, given the expanding economic landscape. A central driver of economic development effectiveness is the ability to find talent to fill jobs. Areas with enhanced transit systems are particularly attractive to employers and employees since they create an efficient linkage between work and residence. Similarly, areas with comfortable walkable and bicycle infrastructure attract new development and businesses as these spaces facilitate enhanced access to goods and services. This access bolsters the desirability of the location as people are more willing to pay a premium for the convenience of being able to reach work, shopping, and leisure destinations on foot or by bike. The increased foot traffic often translates into higher retail spending, which in turn contributes to greater revenues to surrounding communities in the form of sales tax.

The Broadway corridor is poised to capture approximately 3 percent of the projected regional economic growth. This is remarkable, given that the corridor is almost entirely developed, and this growth would result from infill development and redevelopment. Broadway is uniquely positioned in the Denver metro due to its proximity to Downtown Denver, the south I-25 employment hubs (Tech Center et al.), the full range of housing (from entry-level to executive), and an existing economic strength attributed to strong household incomes.



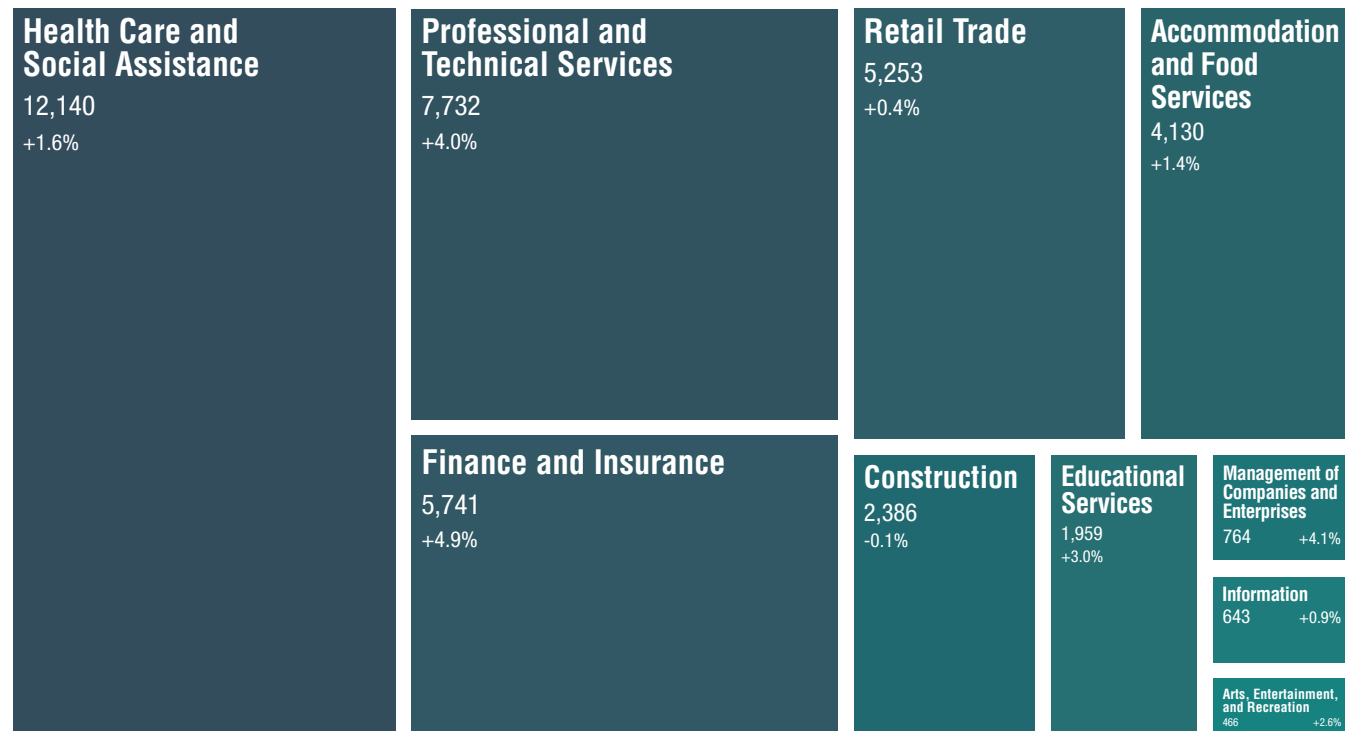
### Commercial Development

Businesses in the corridor are projected to add nearly 11,000 jobs between 2022 and 2042, which is an annual growth rate of 1.3%. Sectors that are predicted to see significant growth include finance and insurance (4.9%), management of companies and enterprises (4.1%), and professional and technical services (4%). This will drive a 40% increase in demand for commercial space over existing, specifically office space (63%), 21% of which is related to healthcare. Overall, the estimated demand for new commercial space is 3.8 million square feet or an average of 182,800 square feet per year over the 20-year timeframe, as shown in Table 8.

**TABLE 8: COMMERCIAL REAL ESTATE FORECAST**

Description	20-Year Forecast		
	Total (Sq. Ft.)	Annual # (Sq. Ft.)	% of Total
Cumulative Demand for Space			
Office	2,429,47	115,689	63.3%
Industrial/Flex	-142,940	-6,807	-3.7%
Retail	969,033	46,144	25.2%
Hotel	583,683	27,794	15.2%
<b>Total Sq. Ft.</b>	<b>3,839,24</b>	<b>182,821</b>	<b>100.0%</b>

**FIGURE 16: 2040 ECONOMIC PROJECTIONS AND GROWTH RATE**



### Multifamily Units Development

Since 2010, 2,661 multifamily units have been added in the study area, approximately 190 units per year. Over the next 20 years, a similar rate is predicted, representing 143 new units annually. This reflects a 55% expansion to the current multifamily inventory that exists in 2024.

### Future Land Use Mix

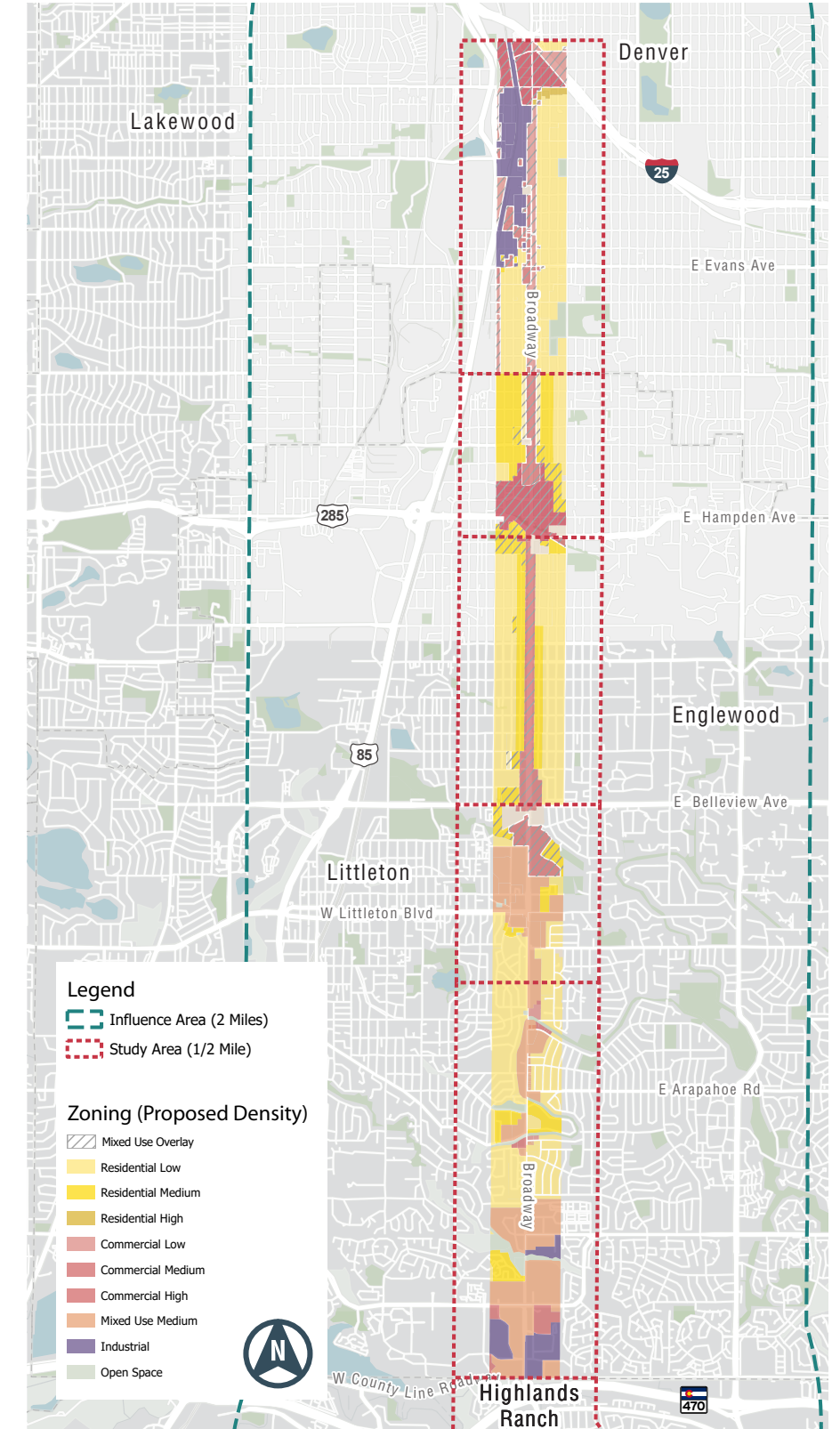
Figure 17 illustrates the existing maximum allowable density by land use type within a mile of Broadway. Most of Broadway is zoned for medium to high commercial and mixed uses with higher intensities concentrated near major intersections and identified community hubs. The types of development in these areas will vary based on the Character Area, as described in Chapter 6. Generally, the adopted land use codes permit higher densities along Broadway than the market is likely to produce.

The overall mix of land uses will be driven by the corridor's capture of regional commercial and residential uses. Based on the composition of employment and the role residential is expected to play, the mix of new development along the entire corridor is targeted for:

- 40%** Residential floor area
- 35%** Office
- 15%** Retail
- 10%** Hotel uses

While the corridor varies in character, it is expected that most development will have some proportional distribution similar to the average mix.

**FIGURE 17: ZONING BY DENSITY**



## Graphic Legend

<span style="color: red;">■</span> Commercial	<span style="color: lightcoral;">■</span> Office	<span style="color: purple;">■</span> Mixed-Use
<span style="color: teal;">■</span> Community / Civic	<span style="color: yellow;">■</span> Low Density Residential	<span style="color: gold;">■</span> High Density Residential



### Urban Main Street

The Urban Main Street context areas have the highest existing commercial activity and are well-positioned for future development, reflecting the vibrancy of downtown Englewood and the rejuvenated South Broadway in Denver. The strength of the existing commercial operations (retail, office, and services) limits the number of viable redevelopment sites; nevertheless, redevelopment is likely to occur as buildings age, lifecycles reach their end, and tenants transition in and out of the area.

Urban Main Street context areas will likely have mixed-use buildings that house residential units and ground-floor commercial retail. New business activity will drive demand for overnight stays, and new hotel properties will emerge. A portion of the new commercial real estate will be for office and healthcare uses.

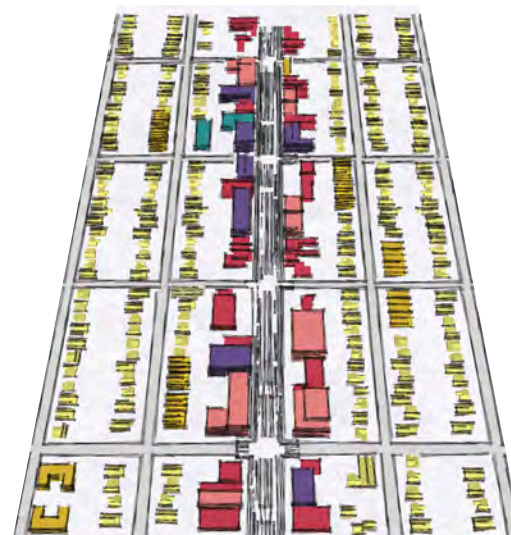
To support this type of development, office lease rates would need to increase from existing levels, which is a reasonable assumption based on the employment forecasts. This type of development is unique to this context area, as the other areas are limited to building heights of five stories.



### Main Street

The Main Street context areas are designed to maintain a lower level of economic activity compared to the Urban Main Street context areas. They are generally located in Denver and Englewood, immediately south of the Urban Main Street areas. The uses that will emerge in these areas will be more single-use projects. The community hubs in this context are predicted to experience an increase in office space construction in the form of five-story buildings. Ground floors may accommodate parking or retail; however, there is limited economic pressure to support mixed uses at this time. Residential development will have a similar building form, with building stories capped at five stories and ground floors lined with residential units. Retail will likely be in stand-alone buildings concentrated around community hubs.

The development of the Main Street context area will likely evolve similarly to the Urban Main Street context area; however, it will have larger parcels to work with rather than be constrained with smaller infill parcels. Growth should be concentrated around the identified community hubs, and cities should encourage infill on smaller parcels to stimulate economic growth. To activate the corridor with pedestrian activity, cities should encourage a diverse mix of businesses and support development growth two or three blocks off the main corridor. Additionally, private parking should be oriented behind buildings to create consistent building frontage along Broadway.



### Suburban

Suburban context areas function as transitions between Suburban Commercial areas and denser urban areas. The Suburban areas are expected to maintain their current character with modest change in the form of residential infill. Townhomes and duplexes can accomplish residential infill while embracing the architectural style of suburban areas. Moreover, well-designed site plans for infill development have the potential to consolidate access points and improve safety on the corridor.

The suburban context area is not expected to change significantly; however, there are opportunities to redevelop large parcels to better support the multimodal corridor. New buildings should be placed closer to the right-of-way, and large parcels should feature a variety of uses. New development should be considerate of the existing residential neighborhoods and be consistent with existing development patterns. To do this, the building scale should taper from high intensity along the corridor to lower intensity adjacent to residential areas. Where possible, single-family residential uses should be exchanged for higher-density residential uses along the main corridor.



### Suburban Commercial

The Suburban Commercial context area offers substantial potential for new development. The scale of the existing parcels and land ownership provides opportunities for a variety of land uses.

Due to the large parcel sizes, the Suburban Commercial context area provides the most amount of flexibility to create change and a sense of place. With the redevelopment of large parcels, taller buildings should be placed fronting the main corridor, forming a consistent building edge that tapers down in height as they become adjacent to existing residential uses. Parking should be reduced and internal to all buildings while connecting to an expanded internal road network created within the new community development. As additional land use types are introduced, provide parks and open spaces for people to enjoy as density increases over time.

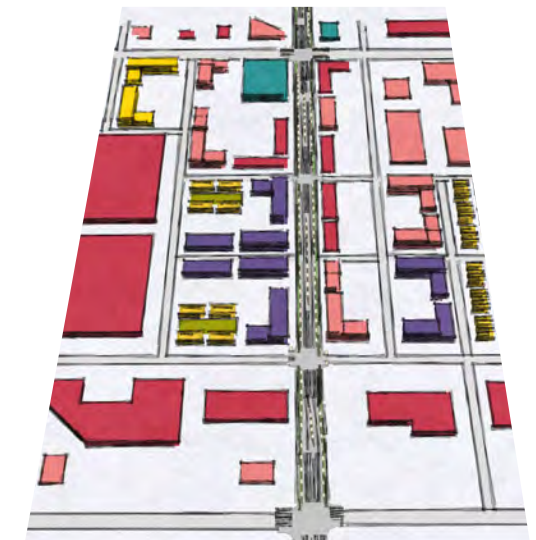
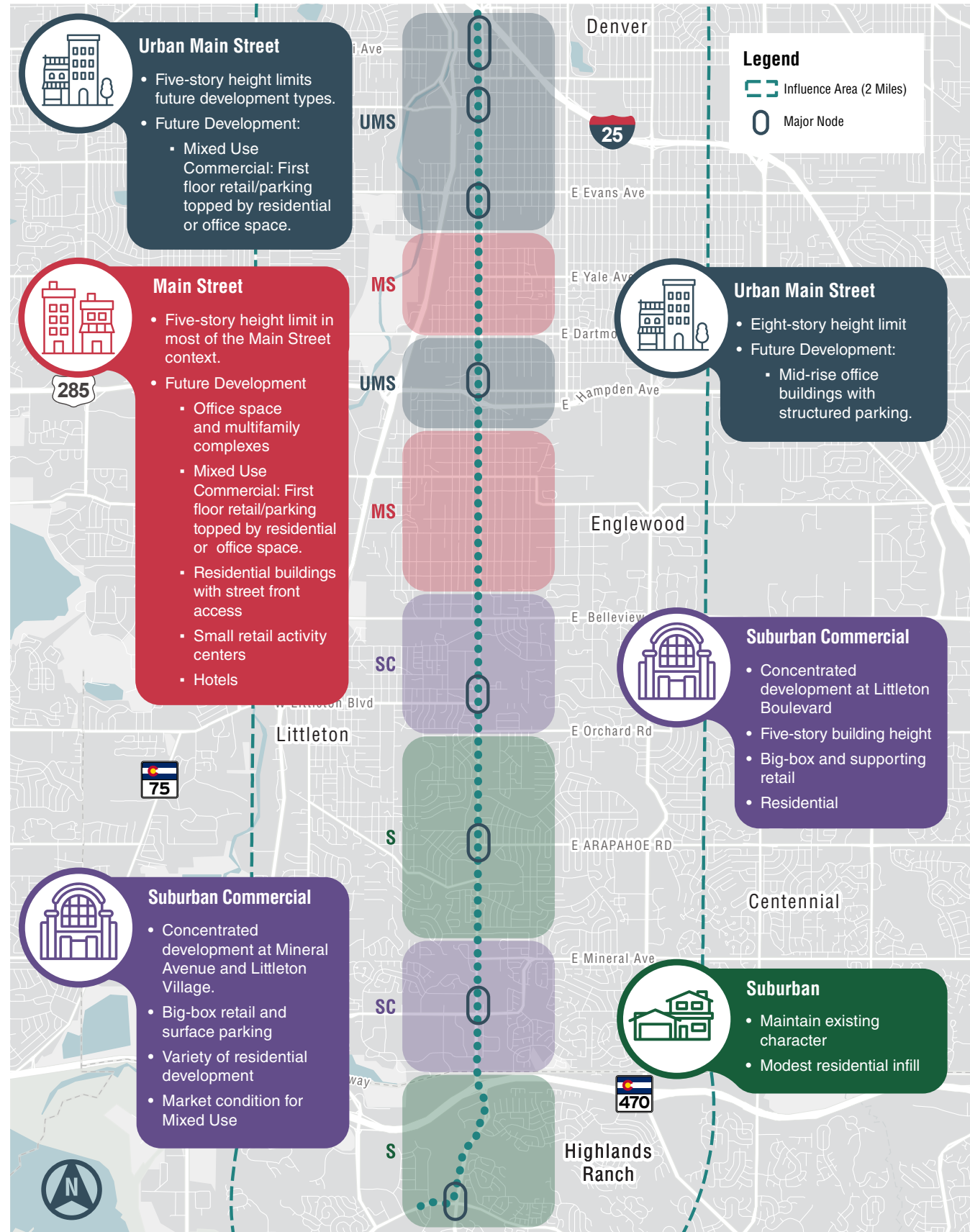
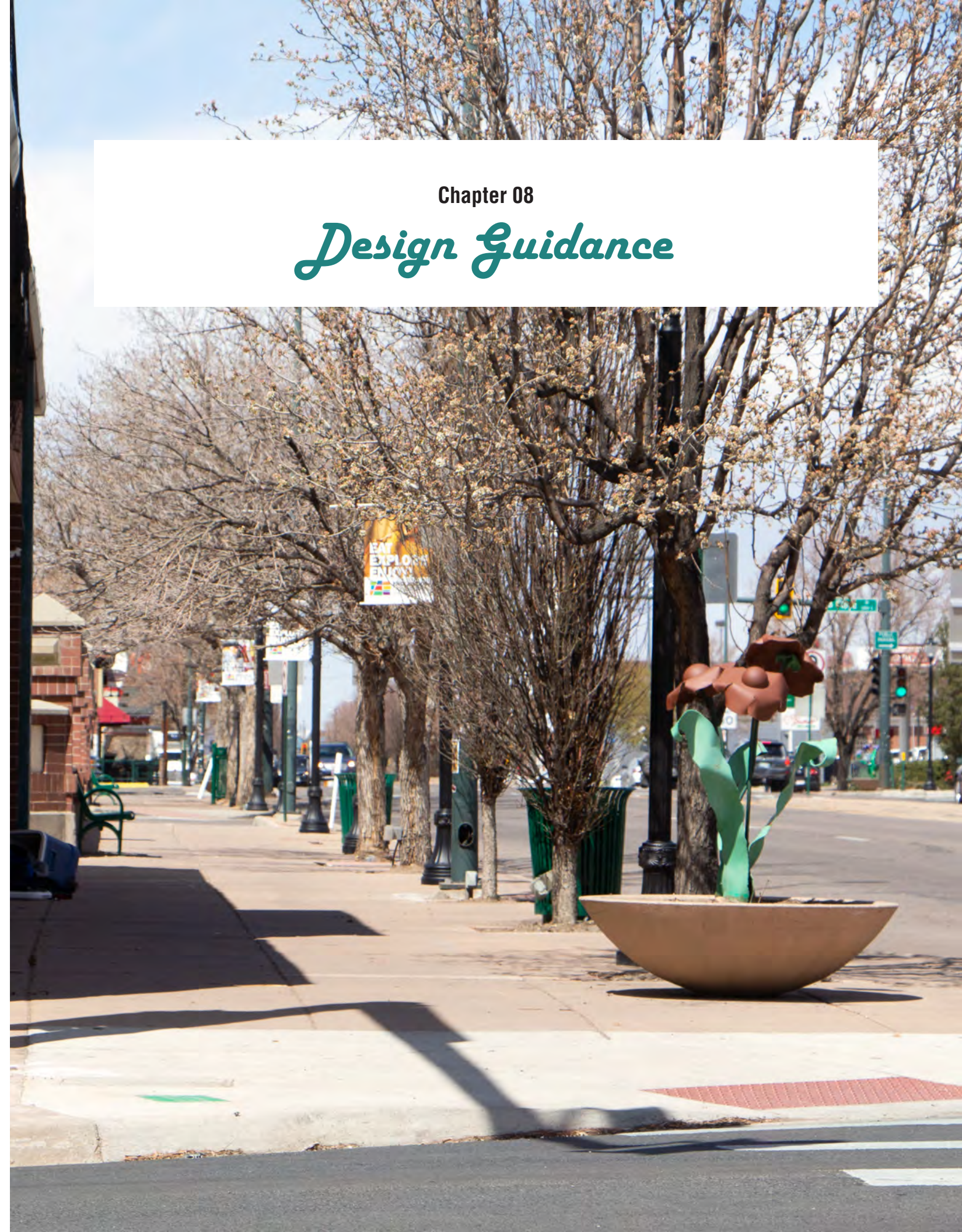


FIGURE 18: FUTURE DEVELOPMENT BY LAND USE CONTEXT



Chapter 08

*Design Guidance*



## Design Guidance

As the Broadway corridor recommendations move through additional stages of design and closer to implementation and as land use along the corridor evolves, specific design elements will need to be further assessed, developed, and refined on a block-by-block basis so that the future corridor matches the vision established through this study while meeting the needs of all users. This chapter provides general design and policy guidance to be considered as the recommendations move forward.

### Access Management

The entire Broadway corridor, but especially the portion north of Belleview Avenue, has a high driveway density. Many individual blocks have four or more private accesses on each side of the street, often spaced closely together. This is an issue for both safety and functionality reasons. Driveways break up the pedestrian and bicyclist environment, creating conflict points with motorists and disrupt the flow of traffic. Research has correlated higher driveway densities with higher crash rates and congestion levels. By reducing conflicts and freeing up space for amenities and aesthetic treatments, greater access management thereby improves the safety, comfort, and functionality of a corridor for all modes, with positive ramifications for both users and adjacent property owners.

- ▶ Preferred minimum of 400-foot spacing between adjacent accesses, absolute minimum of 150 feet.
- ▶ Limit accesses as much as possible within 400 feet of signalized intersections.
- ▶ One access per parcel is recommended unless there are special circumstances.
- ▶ Removal of Broadway access from parcels with available access via an alley or side street where feasible, particularly corner parcels.
- ▶ Consolidation where shared access to multiple parcels are feasible; communication with property owners regarding the previously mentioned benefits of access consolidation is critical in these situations.
- ▶ Better definition and narrowing of access to minimize conflict zones.
- ▶ Utilize raised medians to prohibit left-turn movements at mid-block locations and restrict access to right-in/right-out only.

Access management along Broadway should be explored in greater detail through the development of a formal Access Management Plan. An Access Management Plan assesses access needs and opportunities for modifications in detail at the block level and in coordination with property owners. An Access Management Plan for Broadway could define a preferred access management scheme consistent with the overall corridor vision and inform future redevelopment and corridor designs.



### Medians

There are raised medians along much of the Broadway corridor today. Most blocks north of Belleview Avenue have at least short stretches of raised median, but their presence is less consistent throughout the southern section. The functions and benefits of raised medians along a corridor like Broadway are numerous. They are effective for access management, traffic calming, and aesthetic enhancement.

Another benefit of medians is their ability to act as pedestrian refuges if wide enough, especially at mid-block locations along high-volume streets. Pedestrian refuges allow people to focus on one direction of vehicle travel at a time; they also provide a space to wait for gaps in traffic in situations where vehicles are not stopped in both directions, although two-stage pedestrian crossings with an additional signal in the median is generally implemented on streets with a wider section than the future recommended Broadway configuration.

The recommended corridor design includes a substantial amount of raised medians throughout, but specific median placement, dimensions, and materials may vary block-to-block as sections are implemented. Additional considerations include:

- ▶ A minimum of 6 feet between curbs is necessary for a median to function as a pedestrian refuge where crossings are provided.
- ▶ Some medians could be as narrow as 4 feet.
- ▶ Medians at intersections are not recommended, to maintain space outside the outside curb on either side for other uses.
- ▶ Block-to-block right-of-way constraints will dictate where medians are feasible; blocks with high parking and/or turn-lane needs may not be able to accommodate medians.
- ▶ Median materials should be selected to be context-sensitive (i.e., enhanced aesthetics in Downtown Englewood and at other commercial hubs).
- ▶ South of Belleview Avenue, additional raised medians could be implemented if accesses are closed and/or converted to right-in/right-out, so continuous left-turn lanes are not needed.
- ▶ Where newly raised medians restrict left-turn opportunities, U-turn feasibility and allowance should be evaluated, considering factors such as through and turning volumes, roadway geometry, and signal operations/timing (where applicable).



### On-Street Parking

There is generally on-street parking on both sides of Broadway north of Belleview Avenue, limiting the space available above the curb for pedestrians, bicyclists, and amenities. While some on-street parking is necessary for businesses with loading needs and/or a lack of off-street parking, the recommended corridor design reduces on-street parking substantially to enhance walkability and vibrancy.

The design generally includes smaller pockets of parking/loading spaces on both sides of the street, matched with existing businesses that have no off-street parking or have loading needs (e.g., medical facilities) for each block. Future parking needs should be evaluated with all redevelopment activity; as redevelopment occurs, off-street parking should be encouraged as much as possible to minimize on-street parking needs on Broadway to free up additional space for people-oriented uses in the right-of-way. Opportunities to increase the availability of bicycle parking to make bicycling more attractive and convenient, through requirements and/or incentives, should be explored as development occurs. Adjustments to minimum parking requirements can also be considered to make off-street parking less onerous for developers to provide.



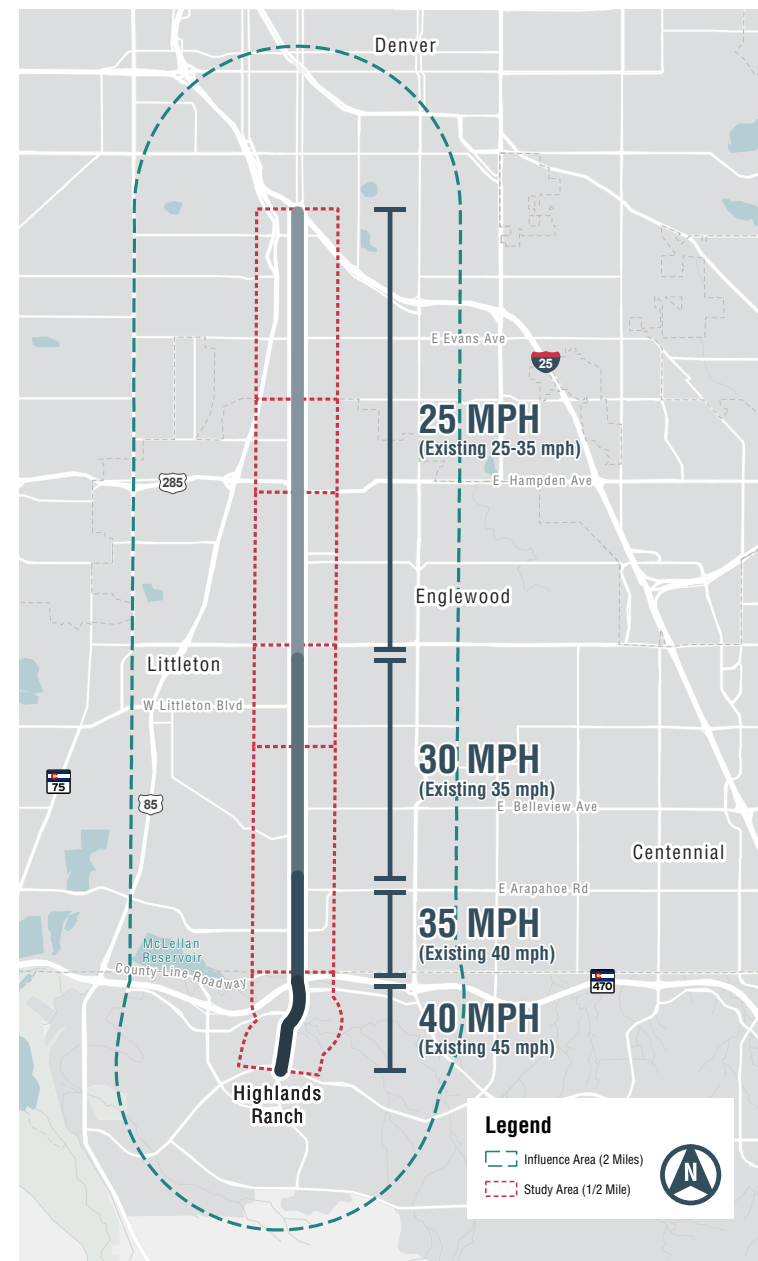
## Vehicle Speeds

Existing speed limits along Broadway generally vary between 35 mph and 40 mph. The exception is a short stretch centered around downtown Englewood, where the posted speeds range between 25 mph and 30 mph. A significant portion of drivers (more than 15%) are measured traveling 5 to 10 mph faster than the speed limit. These high speeds are not consistent with the future vision of Broadway as a much more walkable and inviting corridor, so a corridor-wide reduction in speed limits is recommended.

The recommended speed configuration presented in Figure 19 is based on the existing corridor context and should be reevaluated and modified, as appropriate, as land use evolves. For instance, if future land use changes in Character Area 5 result in a “Main Street” environment with more mixed-use development and activated frontage (meaning a place where you can expect to see people on the street) on Broadway, the 30 mph speed limit should be carried all the way from Centennial Avenue to County Line Road.

Speed limit adjustments are only effective if they are accompanied by intentional street design improvements that encourage slower speeds. Treatments that have a demonstrated correlation with reduced speeds include narrower travel lanes, reduced corner radii, raised medians, increased building frontage, and gateway/placemaking treatments. The recommended corridor design includes most of these features throughout, with the specifics to be refined as design progresses. Additionally, traffic signals should be retimed as speed limits are adjusted so that signal progression matches the desired travel speed.

FIGURE 19: RECOMMENDED POSTED SPEEDS



## Urban Design

A substantial amount of redevelopment is likely throughout the Broadway corridor over the coming decades, and it is recommended to have corridor-specific design standards and/or guidelines in place that dictate preferred building and building frontage characteristics, and associated community amenities and infrastructure, consistent with the future multimodal vision that can be used as a reference during development review. This ensures a cohesive corridor expression along the length of Broadway and integrates the built environment into the overall corridor experience. Zoning modifications may also be considered in certain sections to encourage denser, more pedestrian-oriented development.

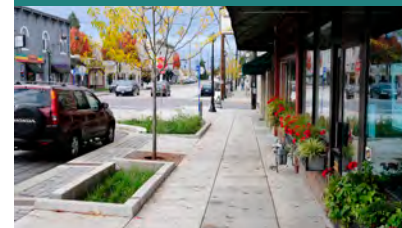
Elements to consider in the design guidelines include:

### SMALL BUILDING SETBACKS



**Small Building Setbacks:** Buildings edges are set closer to the property boundaries to reinforce an active street edge to contribute to visually engaging streetscape.

### TRANSPARENT FACADES



**Transparent Facades:** Buildings fronting the street provides a visual connection between the street and interior spaces. This creates an open and inviting atmosphere, encouraging exploration and engagement with the urban environment.

### BUILDING MATERIALS AND ARTICULATION



**Building Materials and Articulation:** Avoid homogenous, expansive facades, to break down the scale of building frontages, by using multiple materials to create visual complexity and richness to the street’s edge.

### WAYFINDING AND SIGNAGE



**Wayfinding and Signage:** Create unique branding and signage that contributes to the community identity.

### PUBLIC ART



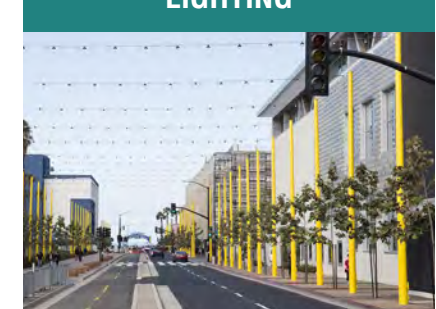
**Public Art:** Integrate public artwork to create focal points within the streetscape while contributing to the sense of place and identity of the community.

### STREET FURNISHINGS



**Street Furnishings:** Construct spaces for people to gather and business operations to expand into the public realm to activate the streetscape by promoting social interaction.

### LIGHTING



**Lighting:** Add human-scale lighting to enhance pedestrian comfort and provide intuitive wayfinding in the evening.

### GREEN INFRASTRUCTURE

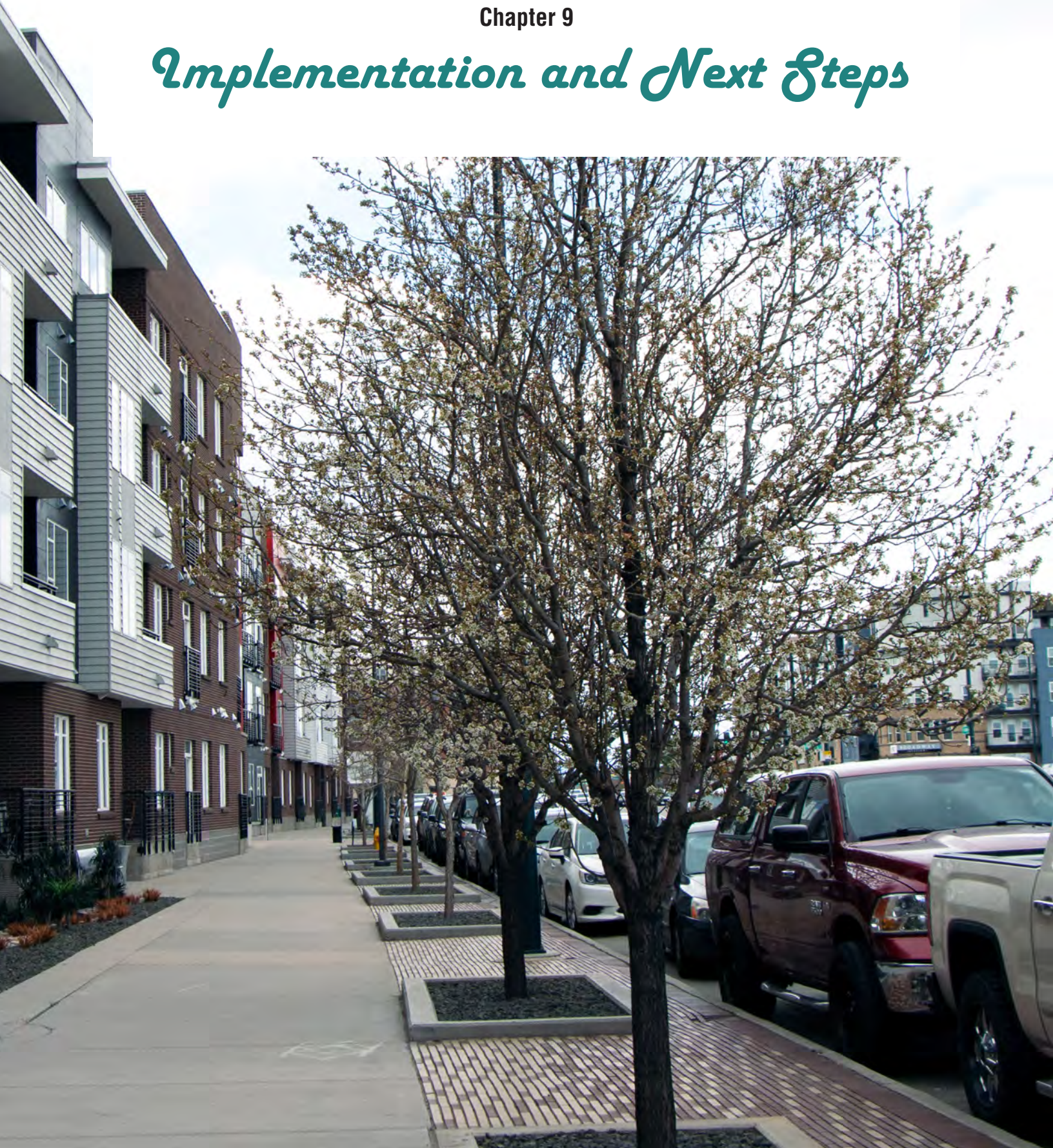


**Green Infrastructure:** Use native and drought-tolerant plants to increase biodiversity, and promote water and energy conservation. Street trees provide shade and wind protection while scaling down the ROW and creating pedestrian-friendly spaces.



Chapter 9

# Implementation and Next Steps



## Implementation and Next Steps

### POTENTIAL FUNDING

Implementation of the recommended improvements for the Broadway corridor will require leveraging dedicated local and state funding sources to access other financing mechanisms. Of these, the most promising funding source for the recommended improvements is discretionary grants that are awarded through a competitive process based on grant applications.

At the federal level, the Infrastructure Investments and Jobs Act (IIJA) more than tripled the available federal funds for these types of projects through discretionary grant programs. While the authorization period of the IIJA ends in fiscal year 2026, these types of programs are likely to be available under subsequent administrations and surface transportation authorizations. The table below lists the programs with the most promise for advancing the vision for the Broadway corridor.



**TABLE 9: COMPETITIVE FUNDING PROGRAMS TO MONITOR FOR BROADWAY CORRIDOR IMPROVEMENTS**

Program	Approximate Average Award Amount	Administering Agency	Aligned Project Type
TIP Calls for Projects	\$5 million	DRCOG	All
RAISE	\$15 million	USDOT	All
SMART	\$2 million	USDOT	TSP and Technology Pilot Projects
Safe Streets and Roads for All	\$15 million	USDOT	Complete streets, intersection improvements, bicycle/pedestrian facilities
INFRA*/Mega**	\$30 million	FHWA	All (regionally significant projects only)
Active Transportation Infrastructure Investment Program	\$10 million	FHWA	Bicycle/pedestrian improvements
PROTECT	\$10 million	FHWA	Resilience Improvements (stormwater, creek restoration/protection)
Bridge Investment Program	\$30 million	FHWA	Bridge replacement (for structures on the National Bridge Inventory only)
Capital Investment Grants – Small Starts	\$100 million*	FTA	High-capacity transit corridor implementation (e.g. BRT)
Areas of Persistent Poverty	\$250,000	FTA	Transit project development

\*The Federal Transit Administration’s Capital Investment Grants (CIG) Program includes several “tracks.” Of these, the most likely alignment with the Broadway Corridor is Small Starts and New Starts. Small Starts projects must be under \$400 million in total cost, with a CIG request of under \$150 million. New Starts projects are those with total costs over \$400 million (and with a CIG request over \$150 million). \*Nationally Significant Multimodal Freight & Highway Projects program (INFRA). \*\*National Infrastructure Project Assistance program (Mega).

## Preparing for Discretionary Grants

The following describes how to proactively prepare for the typical data and analyses that will be required to respond to the evaluation criteria for some of the grant programs. To maximize the possibility of successfully obtaining funds for the Broadway corridor improvements, there is a significant advantage in conducting an upfront analysis to understand how future capital investments would meet the criteria of the different funding programs.

Some funding programs are available for a broad range of capital investment projects, while others fund a very specific functional category or strategic priority. In either case, applicants can improve the chances of securing funding by developing a clear understanding of what sets apart a given project or project element, whether it is serving a critical population and/or addressing a clear deficiency of the current transportation network.

The IJA identifies four key priorities, which are embedded in the evaluation criteria for all discretionary grant programs. Each project should be framed within the context of these key priorities.



**Safety:** Investing in improvements to make the transportation system safer for all people.



**Economic Strength and Global Competitiveness:** Growing an inclusive and sustainable economy. Investing in the transportation system to provide American workers and businesses reliable and efficient access to good paying jobs, resources, and markets.



**Equity:** Reducing inequities. Supporting and engaging people and communities to promote safe, affordable, accessible, and multimodal access to opportunities and services while reducing transportation-related disparities, adverse community impacts, and health effects.



**Climate & Sustainability:** Tackling the climate crisis by ensuring that transportation plays a central role in the solution. Substantially reducing greenhouse gas emissions and transportation-related pollution and building more resilient and sustainable transportation systems to benefit and protect communities.

## Common Requirements

The following are some items that are typically required for the grant application and to conduct a benefit-cost analysis.



**Clearly Defined Project.** The more specific or advanced, the better, although a defined scope of work may be sufficient for some programs, for example, projects in earlier planning phases.



**Project Costs.** Estimates of initial capital cost, as well as long-term operating and maintenance costs, along with anticipated construction schedules, are required to evaluate the overall cost-effectiveness of a project. The more specific the information, the better, but even general estimates categorized by major design element (such as utility relocation, right-of-way acquisition, and overall construction costs) and a generalized cost curve (i.e., how much of the cost is expected to be incurred per year of construction) are often enough for a defensible benefit-cost analysis. Clear estimates and funding sources for long-term operating and maintenance costs are requirements to demonstrate to the reviewers that their capital investment is expected to be maintained in a state of good repair.



**Anticipated Benefits.** Typically presented in the form of forecasted demand for the improvement, demonstrating how many users of a particular mode (vehicle, bicycle, pedestrian, transit, freight) would benefit from the project, as well as any applicable calculations of the actual benefit, such as minutes saved per user, or the number of crashes reduced per vehicle miles traveled.

## BROADWAY CORRIDOR PHASING PLAN

The recommendations of the Broadway Corridor Study are ambitious, extensive, and transformative, requiring time and intent to implement. Ultimately, the recommended infrastructure improvements are intended to position Broadway for future BRT service. Two major investments will be necessary to make that happen: near-complete reconstruction of the entire roadway and a substantial increase in transit frequencies from the current 30-minute headways to 5-minute headways. The capital investment required will be significant. However, several operational and physical improvements can be undertaken independently of this major capital investment in the shorter term. The improvements outlined in the following sections include the provision of frequent transit service and other spot improvements. This should be a priority for the partners and the region. Identifying funding for maintaining and operating frequent service on this corridor and on the wider regional BRT network should be a major next step. While federal funding can help with the purchase of the fleet, the region will need to find a way to pay for drivers and maintenance of the fleet.

While pursuing funding from external sources such as the FTA Small Starts program for these investments, smaller-scale improvements compatible with the overall vision should be pursued to address critical needs and better position the corridor for competitive funding opportunities. Near-term improvements include:

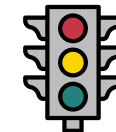
- ▶ Transit speed & reliability improvements at intersections with high bus delay, as well as corridor-wide TSP that is consistent and compatible with RTD's regional TSP planning efforts.
- ▶ Strategic policy and planning actions to support and encourage increased density along the corridor.
- ▶ Intersection safety improvement at crash hotspots and key east/west bicycle & pedestrian connections.

Below are the general cost estimates for the recommended near term improvements for Broadway



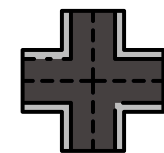
**Sidewalk Widening  
(5' to 10', both sides)**

*\$2 million - \$3 million  
per mile*



**Left-Turn Phasing  
Implementation**

*\$15,000 - \$20,000  
per intersection*



**Transit Signal Priority  
Implementation**

*\$20,000 - \$30,000  
per intersection*



**Transit Lane / Queue  
Jump Striping**

*\$300,000 to \$600,000  
per mile*



**Leading Pedestrian  
Interval Implementation**

*\$750 - \$1,200  
per intersection*

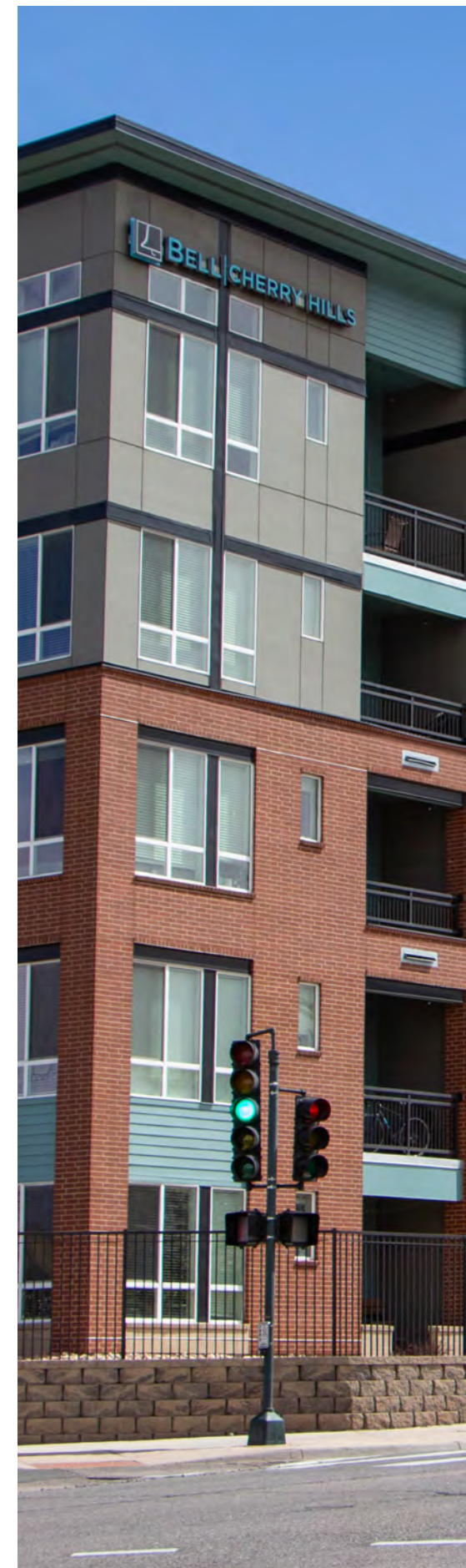


The near term infrastructure recommendations along Broadway vary in the level of complexity and investment. The following section organizes recommended improvements into short-term and mid-term implementation windows by Broadway Character Area – short-term defined as one to two years and mid-term defined as two to five years. The short-term improvements are generally minor, such as signing, striping, and signal-timing modifications, and may be replaced once the ultimate Broadway corridor vision is ready for installation. All the mid-term reconstruction recommendations are intended to align with the future Broadway cross-section vision. In addition to these actions, local agencies should continue to collaborate on furthering design for the ultimate corridor recommendations to inform both the near-term improvements and funding pursuits.

**TABLE 10: NEAR-TERM RECOMMENDATIONS**

Character Area	Location	Recommendation	Funding Source
1	Broadway Station to Mississippi Ave	Bus Lane Striping	Local Public Works Funds
	Mississippi Ave	Southbound Transit Bypass Lane	Local Public Works Funds
	Iowa Ave	Protected Left Turns; LPI	Local Public Works Funds
	Evans Ave	Protected Left Turns; LPI	Local Public Works Funds
2	Downtown Englewood	Coordination with Englewood Downtown Development Authority on public realm improvements	DDA Budget, Private Funding
	Dartmouth Ave	Protected Left Turns; LPI; Intersection Reconstruction	Local Public Works Funds
	Floyd Ave	Protected Left Turns; LPI; Intersection Reconstruction	Local Public Works Funds
	Englewood Pkwy	Protected Left Turns; LPI; Intersection Reconstruction	Local Public Works Funds
		Mid-block crossing at Gothic Theater	Local CIP, DRCOG TIP Grant
	Eastman Ave - Hampden Ave	Sidewalk Widening	Local CIP, DRCOG TIP Grant
3	Mansfield Ave	Protected Left Turns; LPI	Local Public Works Funds
	Oxford Ave	Protected Left Turns; LPI	Local Public Works Funds
	Quincy Ave	Protected Left Turns; LPI	Local Public Works Funds
	Chenango Ave	Protected Left Turns; LPI	Local Public Works Funds

Character Area	Location	Recommendation	Funding Source
4	Bellevue Ave	Protected Left-Turns; LPI	Local Public Works Funds
	Centennial Ave	Protected Left-Turns; LPI	Local Public Works Funds
	West Big Dry Creek Trail	Connection Improvements	Local CIP, DRCOG TIP Grant, ACOS Grant
		Southbound Bus Stop Relocation	RTD Annual Budget
	Powers Ave	Protected Left-Turns; LPI	Local Public Works Funds
		Orchard Rd	Protected Left-Turns; LPI
5	Broadway Estates	Protected Left-Turns; LPI	Local Public Works Funds
	Sterne Pkwy	Protected Left-Turns; LPI	Local Public Works Funds
	Mineral Ave	Protected Left-Turns; LPI	Local Public Works Funds
	Caley Ave	High Line Canal Trail At-Grade Crossing Improvements	DRCOG TIP Grant, ACOS Grant
	Arapahoe Rd	High Line Canal Trail At-Grade Crossing Improvements	DRCOG TIP Grant, ACOS Grant
	Ridge Rd	High Line Canal Trail At-Grade Crossing Improvements	DRCOG TIP Grant, ACOS Grant
	Arapahoe Rd - Ridge Rd	Sidewalk Widening	Local CIP, DRCOG TIP Grant
	Ridge Road to Fremont Place	Outside Lane Narrowing: Evaluate interim options such as bollards, intermittent planter islands, and Jersey barrier	DRCOG TIP Grant, ACOS Grant
6	Dry Creek Road	Northbound Transit Bypass Lane	Local Public Works Funds
	County Line Rd - Highlands Ranch Pkwy	Dynamic Speed Feedback Signs	Local Public Works Funds
		Protected Left Turns	Local Public Works Funds
	County Line Rd	Northbound Transit Bypass Lane	Local Public Works Funds
		Plaza Dr	Protected Left Turns
	Highlands Ranch Pkwy	Protected Left Turns	Local Public Works Funds



**TABLE 11: MID-TERM RECOMMENDATIONS**

Character Area	Location	Recommendation	Funding Source
1	Iowa Ave	Intersection Reconstruction	Local CIP, DRCOG TIP Grant, TAP Grant
	Evans Ave	Intersection Reconstruction	Local CIP, DRCOG TIP Grant, TAP Grant
	Iliff Ave	Intersection Reconstruction	Local CIP, DRCOG TIP Grant, TAP Grant
	Florida Ave	Bicycle Median Cut-through and RRFB	Local CIP, DRCOG TIP Grant, TAP Grant
	2	US 285	Intersection Reconstruction
3	Mansfield Ave	Intersection Reconstruction	Local CIP, DRCOG TIP Grant, TAP Grant
	Oxford Ave	Intersection Reconstruction	Local CIP, DRCOG TIP Grant, TAP Grant
	Quincy Ave	Intersection Reconstruction	Local CIP, DRCOG TIP Grant, TAP Grant
	Chenango Ave	Intersection Reconstruction	Local CIP, DRCOG TIP Grant, TAP Grant
	Bellevue Ave - Littleton Blvd	Raised Median Construction	Local CIP, DRCOG TIP Grant, TAP Grant
4	Bellevue Ave	Intersection Reconstruction	Local CIP, DRCOG TIP Grant, TAP Grant
	Centennial Ave	Intersection Reconstruction	Local CIP, DRCOG TIP Grant, TAP Grant
		Bus Stop Relocation and Curb Bulb-outs	RTD Annual Budget, Local CIP
	East Big Dry Creek Trail	Connection Construction	DRCOG TIP Grant, ACOS Grant
	Rafferty Gardens Ave to 5445 S Broadway	West Sidewalk Construction	Local CIP, DRCOG TIP Grant, TAP Grant

Character Area	Location	Recommendation	Funding Source
4	Powers Ave	Intersection Reconstruction	Local CIP, DRCOG TIP Grant, TAP Grant
	Littleton Blvd	Intersection Reconstruction	Local CIP, DRCOG TIP Grant, TAP Grant
	Orchard Rd	Intersection Reconstruction	Local CIP, DRCOG TIP Grant, TAP Grant
5	Broadway Estates	Intersection Reconstruction	Local CIP, DRCOG TIP Grant, TAP Grant
	Sterne Pkwy	Intersection Reconstruction	Local CIP, DRCOG TIP Grant, TAP Grant
	Mineral Ave	Intersection Reconstruction	Local CIP, DRCOG TIP Grant, TAP Grant
	Euclid Ave	Intersection Reconstruction	Local CIP, DRCOG TIP Grant, TAP Grant
	Fremont Ave	Intersection Reconstruction	Local CIP, DRCOG TIP Grant, TAP Grant
	Jamison Ave	Intersection Reconstruction	
	Caley Ave - Panama Dr	East Sidewalk Construction	Local CIP, DRCOG TIP Grant, TAP Grant
	Caley Ave -Arapahoe Rd	Sidewalk Widening	Local CIP, DRCOG TIP Grant, TAP Grant
	Arapahoe Road	High Line Canal Trail Underpass	DRCOG TIP Grant, ACOS Grant
6	County Line Rd	Intersection Reconstruction	Local CIP, DRCOG TIP Grant, TAP Grant
	Centennial Blvd	Intersection Reconstruction	Local CIP, DRCOG TIP Grant, TAP Grant
	Southpark Rd	Intersection Reconstruction	Local CIP, DRCOG TIP Grant, TAP Grant
	Highlands Ranch Pkwy	Intersection Reconstruction	Local CIP, DRCOG TIP Grant, TAP Grant
	County Line Rd - Plaza Dr	Sidewalk/Shared-use Path Widening	Local CIP, DRCOG TIP Grant, TAP Grant



## LONG TERM IMPLEMENTATION

The near term corridor recommendations help set the stage and build momentum for the ultimate corridor vision. As these spot improvements are implemented and the full corridor design is refined, local agencies should continue to coordinate on a long-term implementation strategy. The Broadway corridor is likely a good candidate for an FTA Small Starts grant, and there are several actions that can be taken in the interim to support a future application:

- ▶ Jurisdictions along Broadway should continue to participate in regional BRT planning efforts in coordination with RTD, DRCOG, CDOT, and other agencies. Regionally significant projects like this one need to be included in the Regional Transportation Plan and should be well-defined and include an estimated timeline for implementation.
- ▶ The transit-supportiveness of relevant local plans, policies, and ordinances is an integral factor in the Small Starts rating formula. Jurisdictions along Broadway should review these and identify opportunities for strengthening them in accordance with FTA policy guidance.
- ▶ Critically, a commitment to BRT levels of transit service along the corridor (minimum 15-minute headways) is a requirement to be eligible for Small Starts funding. Jurisdictions along Broadway should support ongoing efforts to increase regional transit funding so that increased service levels on Broadway can be achieved.
- ▶ Other major infrastructure grant programs, such as RAISE, should be considered to help fund discrete elements of the future corridor vision, such as specific intersection and/or segment improvements. The southern portion of Broadway, south of Belleview Avenue, may be less competitive in the Small Starts process due to the surrounding area’s lower-density land uses. To increase viability, partners should consider splitting the corridor into two. Small Starts funding could be pursued for the recommended improvements north of Belleview Avenue, while other grant programs such as RAISE and BUILD could be pursued for the recommended improvements south of Belleview Avenue.

The breakdown of investment required for engineering and construction for these improvements is shown in the table below.

**TABLE 12: LONG TERM IMPLEMENTATION IMPROVEMENT COST ESTIMATES**

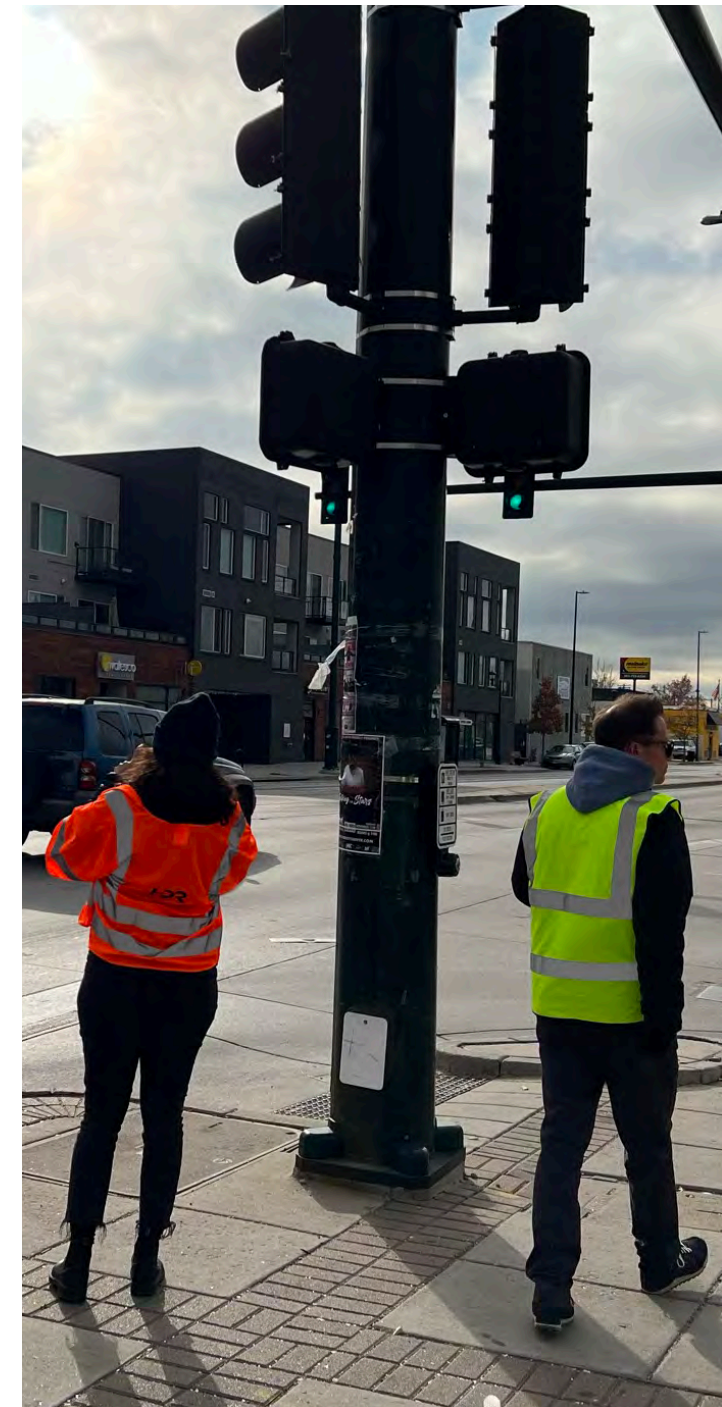
Character Area	Design Engineering & Permitting	Construction	Total
1 I-25 to Yale Ave	\$7.0 million	\$99.2 million	\$106.2 million
2 Yale Ave to US 285	\$3.2 million	\$44.8 million	\$48.0 million
3 US 285 to Belleview Ave	\$5.4 million	\$75.6 million	\$81.0 million
4 Belleview Ave to Caley Ave	\$5.1 million	\$71.5 million	\$76.6 million
5 Caley Ave to County Line Rd	\$7.1 million	\$100.2 million	\$107.3 million
6 County Line Rd to Highlands Ranch Pkwy	All improvements included in near-term and mid-term lists below		
<b>Total</b>	<b>\$27.8 million</b>	<b>\$391.3 million</b>	<b>\$419.1 million</b>

## IMPLEMENTATION CONSIDERATIONS

The City of Littleton and the study partners should continue to coordinate to assess and prioritize the study recommendations. Implementation of the recommendations will require the jurisdictions to seek funds for specific projects resulting from the recommendations, especially those through grant programs. The next step for most improvements from this study is to define a package of projects that can be implemented by one or more of the study partners. If a package is anticipated to require federal funds for construction, environmental clearances will be required by NEPA.

NEPA requires that any project considered to be a Federal Action (i.e., receives federal funding or requires federal permits) go through a study process to assess the environmental, social, and economic effects of a proposed action. Council on Environmental Quality regulations 40 CFR §§ 1500-1508 define Federal Actions and address the basic decision-making framework and provisions established in NEPA. Items to consider for project implementation and NEPA compliance:

- ▶ **Identifying a NEPA Lead Agency:** The recommendations include transit, pedestrian, bicycle, and roadway improvements. The most likely NEPA Lead Agencies for these improvements are the Federal Highway Administration or Federal Transit Administration.
- ▶ **Phasing, Independent Utility, and Logical Termini:** Because of the range of size and scope of the recommendations, they could be implemented as a series of individual projects or a single project or program, which could have phases. In any case, under NEPA, the projects or phases will need to be usable as stand-alone improvements and not be reliant on future projects or phases and also have rationale endpoints for the transportation improvements and review of environmental impacts. The *CDOT NEPA Manual* (2023) says the following about phasing projects:
  - **In cases where a project is implemented in more than one phase, each phase should have independent utility and logical termini to the extent that the phase provides a functional transportation system even in the absence of other phases (i.e., the phase to be implemented has the ability to operate on its own). Each phase must also meet the project’s purpose and need.**
- ▶ **NEPA Class of Action:** Because of the limited nature of proposed impacts outside of the existing Broadway right-of-way, the most likely NEPA documentation types are Categorical Exclusion (CatEx) and Environmental Assessment. A CatEx is required for actions that do not individually or cumulatively have a significant environmental effect. An Environmental Assessment is required for actions that do not qualify as CatEx but where there is insufficient information to determine whether the project’s impacts warrant an Environmental Impact Statement. The NEPA Lead Agency will determine the appropriate NEPA class of action.



## EARLY ACTIONS

Through the course of the study, opportunities to implement improvements that can have immediate benefits were explored. The full corridor recommendations will take time to implement; segment and/or intersection-specific improvements can be implemented in the near term to both address particular concerns and help gradually reach the larger vision. The main early action item to be undertaken was to evaluate in greater detail options to improve crossings of Broadway along the High Line Canal Trail.

### High Line Canal Trail Crossings

The High Line Canal Trail, a 71-mile regional trail spanning much of the Denver Metro Area, crosses Broadway three times within a less-than-one-mile stretch between Caley Avenue and Ridge Road due to its winding alignment. None of these crossings are currently grade-separated, requiring trail users to use the signalized intersections at Caley Avenue, Arapahoe Road, and Ridge Road to continue along the trail. For reasons relating to both user safety and user experience, the existing crossing configurations are not ideal. The crossing distances and waiting times are long, there are numerous conflicting turning movements, and the sidewalk connections to and from the trail are generally narrow and attached. Due to these concerns, one of the primary identified early actions was to develop trail-crossing improvement concepts at all three locations that could be implemented in the near term.



### Crossing Evaluation

To inform the development of improvement concepts, various data were compiled and analyzed, including user volumes, crash history, and traffic operations. Twenty-four-hour bicycle and pedestrian counts were recorded at each crossing, as shown in Table 13 – the “North” and “South” designations refer to the north and south legs of each intersection. Significantly fewer people cross Broadway at Arapahoe Road. This may be, in part, an indication that some trail users are choosing to bypass that intersection by crossing further north or south and then using the Broadway sidewalks or side streets to connect between different trail segments; however, the counts do not factor in trail users who cross Broadway within the actual trail alignment several hundred feet south of the Arapahoe Road intersection. Anecdotally, a substantial number of trail users do cross “mid-block” at this location although it is not formally marked.

TABLE 13: CROSSWALK USERS

	Broadway & Ridge	Broadway & Arapahoe	Broadway & Caley
Crosswalk Users (North)	26	4	4
Crosswalk Users (South)	89	20	191

Source: Daily Crossing Counts, May 16, 2023

Between 2015 and 2019, 11 crashes involving bicyclists and/or pedestrians occurred across all three intersections, resulting in eight injuries and two pedestrian fatalities, both at Ridge Road. Most of these crashes involved active users crossing Broadway and motorists turning on or off Broadway. These make up just 6% of all crashes recorded at the intersections but 26% of severe crashes. Table 14 presents crash data for each intersection.

TABLE 14: CRASH DATA PER INTERSECTION

Intersection	Total Crashes	Total Injury Crashes	Total Fatal Crashes	Non-Severe Bike Crashes	Severe Bike Crashes	Severe Ped Crashes
Broadway & Caley	37	9	0	0	2	1
Broadway & Arapahoe	74	13	0	0	2	0
Broadway & Ridge	64	16	2	1	2	3

Source: Vision Zero Suite, 2015-2019

### Crossing Recommendations

Preliminary design for a trail underpass south of Arapahoe Road has already been completed, and funding has been secured to complete the final design, but there is no funding for construction currently available. A grade-separated underpass at the crossing south of Arapahoe Road is recommended due to geometry and safety implications. The other two crossing locations have factors that make grade separation particularly challenging and costly. Given the desire to identify improvements that could feasibly be implemented in the near term, the concept development process focused on improvements to the existing at-grade crossings rather than grade separation. Additionally, sidewalk widening along the west side of Broadway between Arapahoe Road and Ridge Road is recommended to provide a better connection for trail users who prefer to bypass crossing Broadway. To reduce crossing distances and widen sidewalk connections, the overarching recommendation for improving the at-grade trail crossings is to implement the future Broadway cross-section through each intersection. The ultimate recommended configuration for this stretch of Broadway is two general-purpose lanes in each direction with a center turn lane/median. The roadway is currently wider than the proposed cross-section through all three intersections due to several right-turn pockets and excessively wide outside lanes. In addition to narrowing the roadway, a recommendation for all three crossings is to enhance safety and effectiveness by clearly marking these intersections as major trail crossings with additional signage and striping, including special paving or patterned concrete indicating that these sections of roadway-adjacent paths are still part of the High Line Canal Trail. Specific recommendations at each intersection as shown in Figures 20 and 21.



FIGURE 20: CALEY AVENUE HIGH LINE CANAL CROSSING IMPROVEMENTS

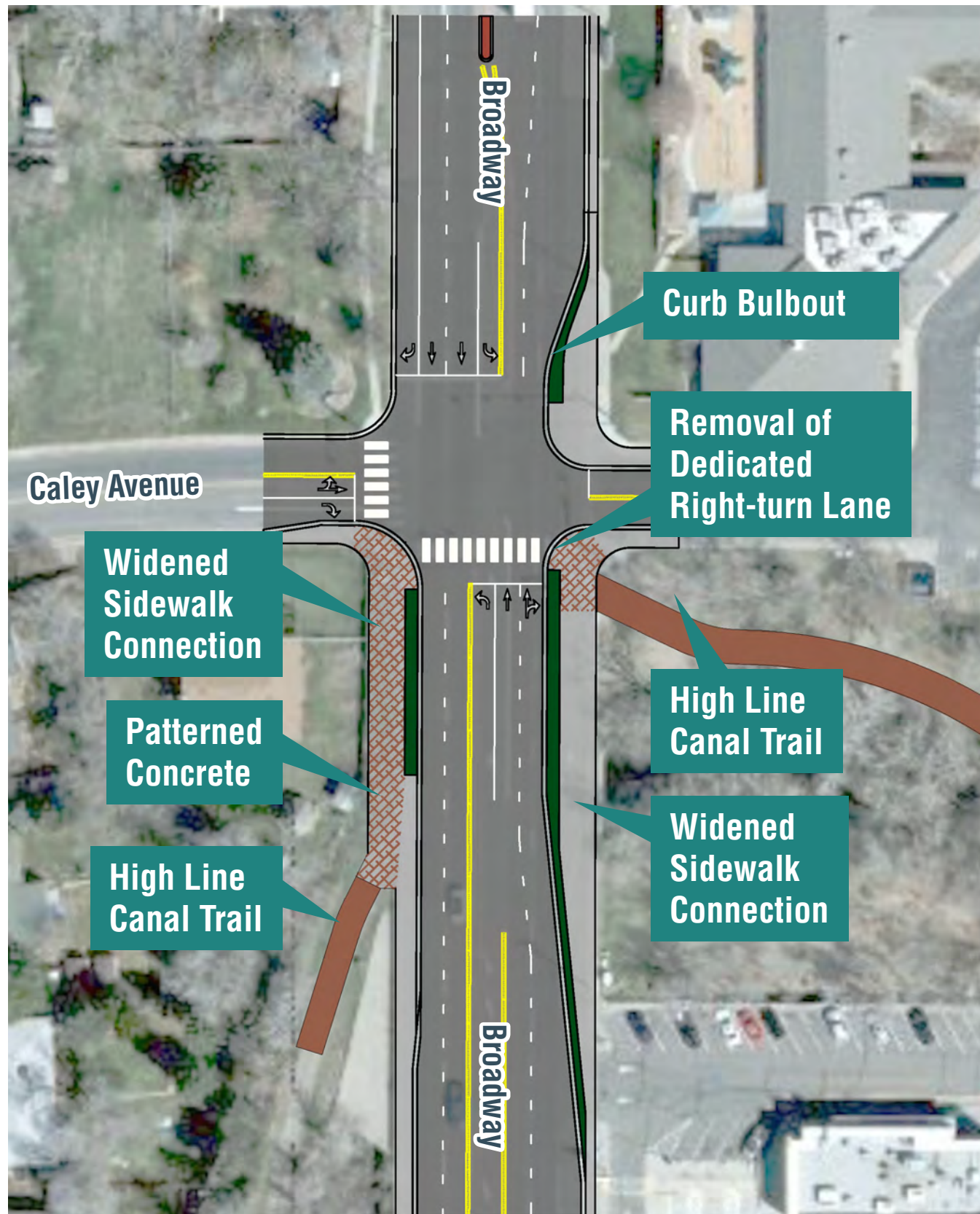
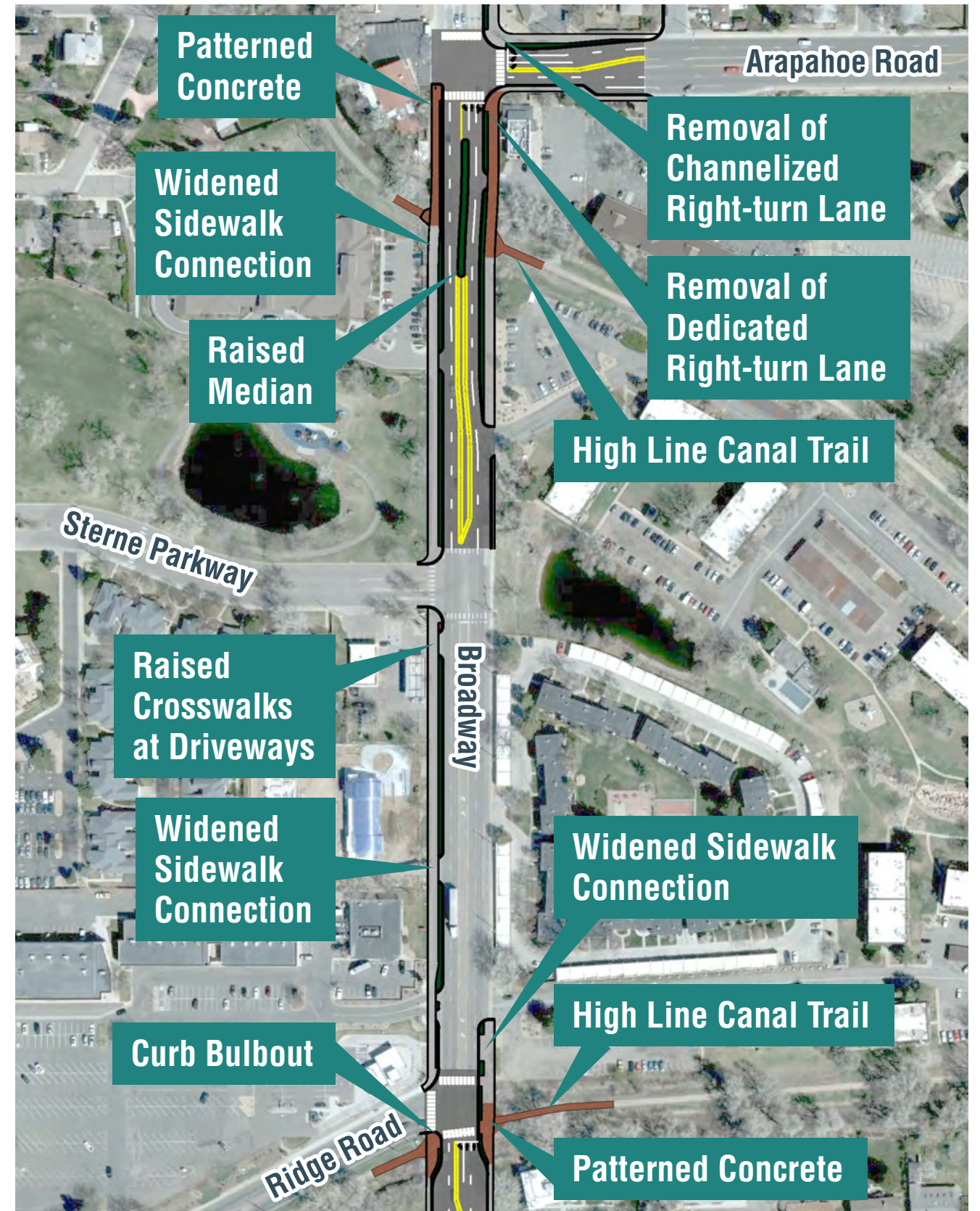


FIGURE 21: ARAPAHOE ROAD AND RIDGE ROAD HIGH LINE CANAL CROSSING IMPROVEMENTS



## PARTNER COLLABORATION

The **Broadway Corridor Study** represents the first step toward creating and implementing a shared vision for the Broadway corridor. Maintaining the partnership and collaboration created through this process will be key to taking the next steps toward implementing this vision.

There are several options to keep the collaborative spirit alive on Broadway.

- ▶ DRCOG could fold the Broadway corridor into the Regional BRT Partnership.
- ▶ One municipality or a group of municipalities could advance the recommendations into the next phase of design on their own while including adjacent municipalities in the effort as cooperating agencies.
- ▶ Agencies can team up to pursue federal funding opportunities as a coalition, committing local match dollars through Intergovernmental Agreements.
- ▶ Agencies can work with other organizations like Denver South, Highlands Ranch Metro District, and Transportation Solutions, as well as key stakeholders like RTD and private sector actors, to take the next steps toward implementation.
- ▶ Work with the development community to implement the vision as redevelopment occurs.

Any of these efforts should strive to maintain the shared vision that has been generated by this study and achieve the regional and local goals of the community.

Examples of successful local coalitions include:

- Federal BRT Project (currently being advanced by CDOT in partnership with several agencies)
- The I-70 Coalition (a non-profit organization representing 28 local governments and businesses along the I-70 mountain corridor)
- The Alameda Corridor Study (led by DRCOG with support from six other agencies)
- The East Colfax BRT project (led by RTD with support from the City and County of Denver and the City of Aurora).

Each of these examples illustrates a different method for delivering the Broadway corridor recommendations.



## Appendices



# Glossary

## Bus Rapid Transit (BRT)

A high-quality bus-based transit system that delivers fast, comfortable, and cost-effective service at high-level capacities. It does this with dedicated lanes, off-board fare collection, and fast and frequent operations, coupled with stations that have a full range of amenities.

## Capacity

Capacity refers to the number of people that can move along a segment of roadway during a given time period, accounting for either all modes together (walking, biking, driving, riding transit) or for a specific mode alone (i.e., vehicular capacity for driving or transit capacity for people on buses).

## Character Area

Distinct sections of the corridor that share physical, functional, or aesthetic characteristics such as land uses, architectural styles, street design, or the natural environment.

## Cross-Section

A profile of a roadway that shows a detailed view of its different components, including its width, travel lanes, medians, sidewalks, bicycle lanes, and shoulders.

## Grade Separation

Refers to the design where roads, railways, or paths cross at different levels using bridges or tunnels. This prevents conflict, improves traffic flow, and enhances safety.

## Federal Poverty Level

Federal guidance on the minimum amount of annual income that an individual or family needs to pay for essentials such as housing, utilities, clothing, food, and transportation.

## Hardened Centerline

Refers to mountable curbs on the centerline of a roadway to prevent vehicles from turning over double yellow striping. Can also include flexible posts in some cases.

## Leading Pedestrian Interval (LPI)

A traffic signal-timing feature that provides pedestrians a 3- to 7-second head start before the light turns green for cars. This improves pedestrian safety by allowing pedestrians to start walking and be more visible before vehicles start their turning movements.

## Level of Service (LOS)

A method used to evaluate how well an intersection operates. Factors include vehicle delays, queue lengths, and intersection capacity. A letter grade is assigned to represent the range of conditions: A (free-flow) to F (severely congested).

## Level of Traffic Stress (LTS)

A method of analysis used to assess the comfort and safety of bicycle and pedestrian routes based on how stressful it is for the user. Factors in the analysis include traffic volume, speed, and infrastructure quality.

## Mobility Hub

Places where people can seamlessly connect to various forms of transportation modes such as public transit, bikeways, car share, and pedestrian spaces. Often, hubs are built around high-capacity transit and offer safe, convenient, and comfortable spaces to easily transition between transportation modes.

## Multimodal

All modes of transportation, including travel by walking, mobility device, bicycling, public transit, or automobile.

## Queue Jump

A short, dedicated bus lane to provide preference to buses at intersections, usually accompanied by a traffic signal phase to allow buses to easily enter traffic flow in a priority position. Intersections may be retrofitted to designate right-turn lanes as queue jumps, resulting in shared right-turn/queue jump lanes.

## Right-of-Way

Land area that is acquired for a roadway. Its width includes the street, curb space, public utilities, and additional public amenities such as sidewalks and landscaping.

## Transportation Infrastructure

The basic set of components, such as roads, bridges, sidewalks, bikeways, and rail lines that make up a community's transportation system.

## Transit Signal Priority (TSP)

Adjustments of the traffic signal timing in real time to reduce the amount of time buses spend waiting at a red light.