Alameda Avenue Corridor Planning Study

Final Report

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Acknowledgements

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Executive Summary

Alameda Avenue is a key east-west link through the core of the Denver metro area, connecting four cities and numerous neighborhoods, community centers, and regional destinations. It supports mobility and access for people walking, biking, using transit, and driving, with regional multimodal connections including Wadsworth Boulevard, Federal Boulevard, I-25, Alameda Station, Colorado Boulevard, Havana Street, I-225, Aurora Metro Center Station, and several regional trails.

As one of the most consistent east-west travel corridors in the region, Alameda Avenue is a particularly critical transit connection. Past regional planning has identified it as a priority corridor for bus rapid transit (BRT). The Denver Regional Council of Governments, in partnership with the cities of Lakewood, Glendale, and Aurora; the City and County of Denver; the Regional Transportation District (RTD); and the Colorado Department of Transportation (CDOT), conducted the Alameda Avenue Corridor Planning Study to 1) further plans for Alameda Avenue BRT and 2) more holistically assess multimodal needs along the corridor and develop recommendations for improvement. A comprehensive process of visioning and goal setting, community engagement, technical analysis, and concept development & evaluation was followed to provide this plan's vision of an enhanced Alameda Avenue corridor for everyone.

Corridor vision

The Alameda corridor unites its communities while preserving their character, emphasizes transit as a primary mode, and above all supports safe and comfortable mobility for everyone.

Corridor goals

Six core goals form the framework for the Alameda Avenue Corridor Planning Study, providing a lens through which to both assess conditions along the corridor and vet potential improvement ideas. These goals were developed through engaging key stakeholders along the corridor.

- **Connectivity:** Alameda provides quality connections to community destinations and integrates seamlessly with the regional transit and active transportation networks.
- **Safety:** Alameda allows for safe travel with no/minimal risk of injury or fatality.
- **Improved Transit:** Alameda is a bus rapid transit corridor with frequent, reliable service, enhanced stations, and efficient transit connections.
- **Accessibility:** Alameda is accessible for everyone to travel along and across, regardless of age, race, income, gender, or mobility needs.

- **Mobility:** Alameda moves people reliably, efficiently, and sustainably.
- **Vibrancy:** Alameda is a place that celebrates and supports equitable investment in its communities, where everyone comes together and thrives.

Community engagement

Community engagement was critical to the planning process. The concerns and opinions of those who use Alameda Avenue regularly formed a basis for developing recommendations. Two primary phases of engagement helped diagnose the corridor's issues and vet potential improvement options. The engagement approach included a regularly updated project webpage, surveys, an online commenting map, focus groups, neighborhood organization meetings, outreach through digital and analog outlets, and pop-up events. Altogether, more than 500 people provided input through in-person discussions, surveys, and other engagement opportunities. The final online survey demonstrated widespread support for this study's recommendations for significant multimodal improvements to the corridor and helped refine and assess community support for the plans various recommendations.

Major recommendations

Alameda Avenue is a corridor with both considerable challenges and ample potential. Significant infrastructure investments are necessary to address the challenges and achieve its potential. While many project recommendations resulting from this planning process are localized and smaller-scale in nature, corridor-wide transformation will ultimately be necessary to achieve the study vision. Major recommendations for Alameda Avenue in support of the vision include:

- Corridor-wide significant transit upgrades including bus rapid transit (BRT) through a combination of dedicated bus lanes where feasible, transit speed and reliability enhancements at key intersections, high-quality stations with upgraded amenities for transit users, high-frequency service, and other applicable elements of BRT.
- Corridor-wide speed control measures including narrowing of excessive lane widths, implementation of additional raised medians and evaluation of reduced speed limits.
- Pedestrian realm improvements including replacement of all attached and/or narrow sidewalk segments (5' or less) along the corridor with wider, detached sidewalk.
- Substantial safety improvements at all major intersections along the corridor, including crosswalk and curb ramp enhancements, median refuge islands, elimination of turn lanes that are not operationally necessary, and signal modifications to prioritize crossing pedestrians.

- Additional segment specific safety improvements such as lane repurposing where feasible.
- Improvements to the bike and pedestrian networks including implementation of additional designated north-south bicycle and pedestrian crossing points with enhanced crossing treatments.

Next steps

The Alameda Avenue Corridor Planning Study is a crucial step in establishing a cohesive, comprehensive vision for the future of the corridor and identifying actions to achieve it. From here, key next steps to maintain momentum toward implementation include continuing discussions among the partner agencies, pursuing funding, working through more detailed analysis and design, and planning and project development activities to implement bus rapid transit.

Introduction

Background and purpose

The Denver Regional Council of Governments (DRCOG) undertook the Alameda Avenue Corridor Planning Study in partnership with its local agency partners, the cities of Aurora, Glendale, Lakewood; the City of County of Denver; and RTD and CDOT to establish a shared vision for enhanced safety and mobility for all users of Alameda Avenue between Wadsworth Boulevard and Sable Boulevard. This study was initiated through DRCOG's Corridor Planning Program, which is focused on advancing the projects and priorities in the 2050 MetroVision Regional Transportation Plan towards implementation. As shown in **Figure 1**, Alameda Avenue is in the south-central portion of the larger Denver metropolitan region.

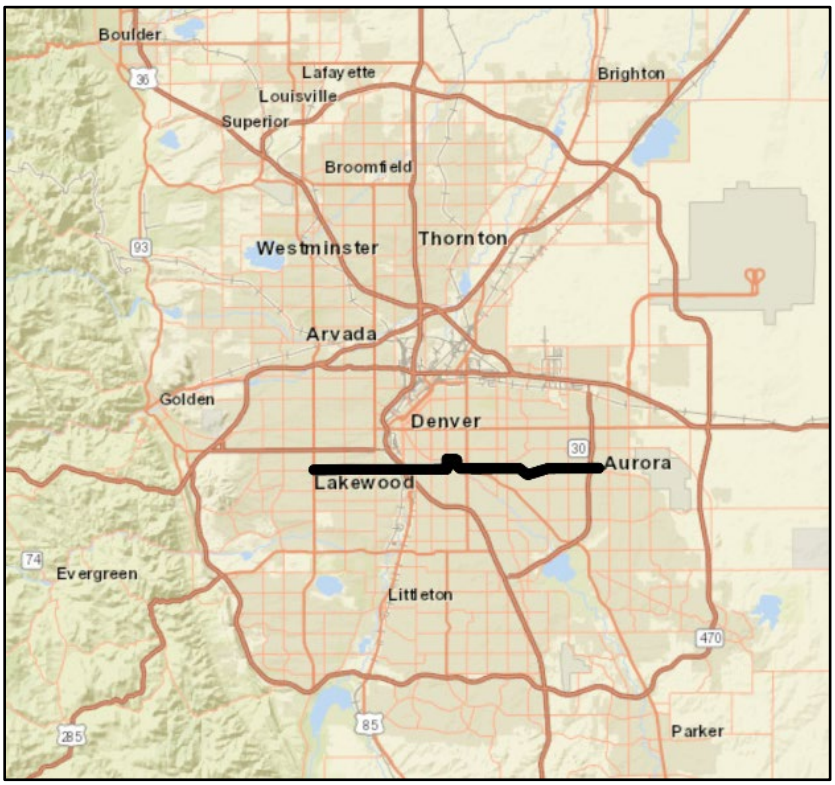


Figure 1: Corridor study area

This 13-mile stretch of Alameda Avenue passes through or along four cities and various land-use contexts, linking residential areas, employment hubs, major north-south transit lines, community centers and more. Its importance for both local and regional mobility stems largely from it being one of the most consistent east-west arterial transportation

corridors in the metro area—it is a critical link for all modes. Through a process of technical analysis, public outreach and concept brainstorming and evaluation, the project team developed recommendations for enhancing Alameda Avenue. For the purposes of the study, the corridor was split into six distinct segments as shown in **Figure 2**.

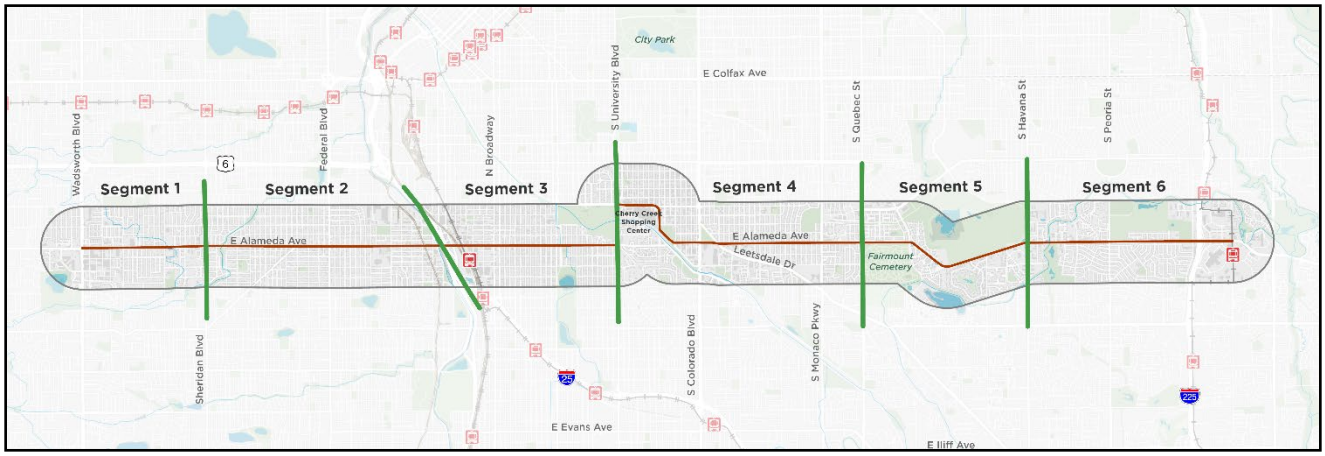


Figure 2: Corridor segments

Previous planning efforts have recognized the regional importance of Alameda Avenue and acted as an impetus for conducting this study. The Regional Bus Rapid Transit Feasibility Study completed by the Regional Transportation District (RTD) in 2018 identified this stretch of Alameda Avenue as one of the most promising bus rapid transit corridors in the Denver metro area, and Denver Moves: Transit (2019) identified Alameda Avenue as a key link in the city's frequent transit network. Aurora's Comprehensive Plan, Aurora Places (2018) identified Alameda Avenue as a high frequency transit route. DRCOG's 2050 Regional Transportation Plan built on this work to further refine the regional bus rapid transit network included in the plan, including Alameda bus rapid transit for implementation between 2030 and 2040. Accordingly, DRCOG chose to complete this study to both refine the vision for corridor bus rapid transit and identify near-term multimodal projects and strategies to improve travel within the corridor.

Alameda Avenue is equal in importance for regional mobility to more distinct corridors like Colfax Avenue and Broadway, but it lacks their investment. It has myriad issues related to safety and multimodal access; but it also has immense potential for enhanced vibrancy and connectivity, making it an appropriate corridor for multimodal investment. The Alameda Avenue Corridor Planning Study establishes a unified vision for addressing the issues and achieving the corridor's potential.

Planning process

The Alameda Avenue Corridor Planning Study followed a one-year schedule to culminate in this final report. Starting in June 2023, the project team went through a comprehensive planning process of collaboration, outreach, analysis, and refinement to arrive at recommendations for making Alameda Avenue a safer, more comfortable, more livable corridor.

Stakeholder collaboration

Two primary stakeholder groups helped direct the study: the Project Management Committee (PMC) and the Corridor Steering Committee (CSC). The PMC, consisting primarily of technical staff from DRCOG and the partner agencies, helped guide the study through monthly meetings. Key roles included reviewing draft study materials, strategizing about next steps, and brainstorming issues and opportunities for the corridor. The CSC, consisting of local elected officials and leaders from other partner organizations, met four times over the course of the study and provided higher -level feedback at key milestones.

Public engagement

Two primary phases of public engagement provided valuable insight and feedback from community members to help identify corridor issues and vet potential improvement options. The engagement approach included a regularly updated project webpage, surveys, an online commenting map, focus groups, outreach through digital and analog outlets, and pop-up events.

The first phase of engagement centered on a commenting map that allowed participants to provide location-specific comments about transportation issues and opportunities along Alameda Avenue. **Attachment A**. to this report presents the Phase 1 Engagement Summary. The map received 281 comments, as well as 567 interactions on those comments. Attached to the commenting map, a brief survey about travel behaviors and opinions related to Alameda Avenue received 232 responses. In--person focus group meetings open to the public were also held in each of the six corridor segments to discuss issues and opportunities in more depth.

The second phase of engagement centered on an online survey about draft improvement concepts by corridor segment. **Attachment B** to this report presents the Phase 2 Engagement Summary. The survey sought feedback on priorities for improvement types and improvement locations within each segment. The survey collected a total of 354 responses and 430 open-ended comments about the draft recommendations. To help publicize and distribute the survey, project team members posted informational signs at 10 bus stops along the corridor and attended pop-up

events at three bus stops and three libraries. **Figure 3** shows public engagement activity locations, and **Figure 4** is an image of the survey promotion signs that were placed at 10 bus stops along the corridor during the second phase of engagement.

Figure 3: Public engagement map

Figure 4: Bus stop survey sign

Public engagement highlights

Phase 1

- Focus group feedback largely centered on safety, vibrancy and multimodal connectivity.

- Safety concerns included the ability to cross Alameda Avenue when walking or biking as well as high speeds traveled on Alameda Avenue.
- Focus group attendees in West Denver also highlighted concerns about lack of investment and maintenance, and specific concerns about lack of tree coverage.
- Most survey respondents in every segment indicated an interest in walking, biking, rolling and/or using transit more along Alameda Avenue in the future.
- Most of the location-specific feedback focused on multimodal safety, access and connectivity.

Phase 2

- More than one-half of survey respondents agreed that their transit use would increase if the region invested in bus rapid transit on Alameda Avenue.
- Improved multimodal connectivity was identified as the most important benefit of bus rapid transit.
- Survey respondents ranked sidewalk improvements as the highest priority for improvement corridor-wide, followed by speed control and safety improvements, bike network improvements and transit improvements.
- In general, survey respondents identified major intersections along Alameda Avenue as the priority for improvements.
- Significant concerns were expressed about the roadway condition and lack of tree canopy, particularly in West Denver.

Corridor conditions

The first primary technical task of the project was to complete a comprehensive assessment of current and projected conditions along Alameda Avenue. **Attachment C** to this report presents the Existing Conditions Report. The project team analyzed community demographics, land-use patterns, and various transportation metrics to establish an understanding of who is using Alameda Avenue and how well it is serving them. The project team also reviewed previous relevant plans for consistency. The project team summarized, analyzed, and or mapped the following specific metrics and factors for the conditions assessment:

- DRCOG Equity Index
- Crash Statistics (2017–2021)
- Corridor Travel Patterns by Mode
- Transit Ridership
- Transit Travel Time and Delay
- Bicycle and Pedestrian Comfort
- Short Trip Propensity
- Existing Cross-Sections

- Infrastructure Inventory (signalized intersections, posted speed limits, and number of lanes)

The following corridor mobility issues and opportunities were identified as part of the existing conditions analysis.

- **Equity and Access**: Portions of the corridor with the highest concentrations of people from marginalized communities (west Denver and Aurora) are relatively lower-comfort for active modes and have relatively few north-south crossing opportunities. Many of the hotspots for severe crashes are located in the same portions of the corridor with concentrations of people from marginalized communities.
- **Safety**: Nearly 1,000 crashes have resulted in an injury and/or fatality over 5 years, with a severe crash happening roughly every 1.8 days. Crash hotspots occur near Wadsworth, Interstate 25, University, Havana, Peoria, and Interstate 225.
- **Bicycle Mobility**: Most of the corridor is low-comfort for bicyclists. Marked, signalized north-south crossings are generally far apart, especially outside of interchange and denser activity areas. The corridor provides limited continuous parallel low-stress routes for biking, though all municipalities along the corridor have plans to expand their nearby bicycle networks.
- **Pedestrian Mobility**: Most of the corridor is low-comfort for pedestrians. Marked, signalized north-south crossings are generally far apart, especially outside of interchange and denser activity areas. A high number of private accesses from Alameda Avenue result in frequent breaks in the existing sidewalk and some corridor segments with no existing sidewalk.
- **Transit Mobility**: 30-minute frequencies combined with delay issues, provide poor transit service for all types of riders. Corridor congestion contributes to transit reliability issues and delay. Heavy transfer activity at junctures with north-south transit lines results in significant delay.
- **Vehicular Mobility**: Most of the corridor is expected to be congested by 2050, with segments already congested with unreliable travel times across the corridor today.

Concept development and evaluation

Following completion of the first round of public engagement and the current conditions assessment, the project team worked with the PMC to develop both corridor-wide and segment-specific recommendations for addressing the identified issues and embracing the intended opportunities from previous steps in the study. The draft improvement concepts—generally categorized as transit, bicycle, pedestrian, safety/speed control and placemaking—were evaluated and refined further through discussion with project

stakeholders, and the final set of recommendations went through a quantitative prioritization scoring process based on project need/benefit. Equity considerations, transportation network characteristics and alignment with the study goals formed the framework for this evaluation.

Implementation and corridor plan

The final technical step in the planning process was to craft implementation guidance for bringing the corridor recommendations to fruition. This effort built on the recommendations and prioritization of proposed projects by assessing implementation considerations for each project and identifying funding and collaboration strategies. The project team scored each project against a set of criteria related to delivery complexity, financial impact, and community input on priorities.

Corridor-Wide Recommendations

The Alameda Avenue Corridor Planning Study recommends substantial multimodal safety, connectivity and streetscape enhancements throughout the corridor to address the concerns identified through technical analysis and community engagement. A core overarching recommendation that will contribute to all three facets is implementation of **bus rapid transit (BRT)** along the entire length of the corridor from at least Wadsworth Boulevard to Sable Boulevard. BRT refers to high-capacity transit service designed to increase service frequency, provide additional amenities for passengers, and reduce transit travel times along a corridor. This key recommendation builds on public feedback from Phase 1 of the study, and designation of Alameda Avenue as a bus rapid transit corridor in DRCOG's 2050 Regional Transportation Plan. Implementing bus rapid transit will not only upgrade transit along the corridor but can help address myriad multimodal issues and enhance mobility along Alameda Avenue. The Alameda Avenue Corridor Planning Study represents the first step in defining a bus rapid transit investment along Alameda Avenue. Additional analysis will be required to determine the type and details for future bus-rapid transit.

Multimodal improvements

The study resulted in broader corridor-wide recommendations for improvements to multimodal safety and connectivity, as well as streetscaping. Safety concerns related to speeding, challenging crossing conditions for active users, and high crash frequencies were common themes to arise from public and stakeholder input over the course of the study. As a result, many of the recommendations primarily focus on enhancing safety, especially for vulnerable road users. The desire for better active transportation and transit connectivity and more amenities and treatments that would contribute to a more vibrant, livable corridor came up often and substantially informed development of recommendations. The multimodal recommendations are grouped generally into seven categories, all of which aim to improve safety and multimodal mobility along the corridor. The following chapter provides specific recommended locations for implementation within each segment. Many of these will require more detailed analysis related to operational impacts, warrants, right-of-way, etc. The seven multimodal recommendation categories are as follows.

Major intersection improvements represent locations where Alameda Avenue intersects with another major arterial roadway. Typical recommended elements include the following:

- Signal timing adjustments and leading pedestrian intervals.
- High visibility crosswalk striping.
- Median extensions and pedestrian islands.

- Reduced pedestrian crossing distances.
- Slip lane closure.
- Reduced curb radii.
- Diagonal curb ramps.
- Transit bypass lanes (in the short/mid-term before bus rapid transit is implemented).
- Transit queue jumps (in the short/mid-term before bus rapid transit is implemented).
- Relocation of transit stops to the far side of the intersection.
- Mobility hubs (at key transit junctures).
- Intersection geometry modifications to allow bike lanes through the intersection.
- Bike boxes for bicyclists stopped at the intersection.
- Dedicated bike signal phase and/or right-turn restrictions to prevent vehicle/bike crashes.
- Bike conflict markings through the intersection.

Figure 5 shows a typical major intersection illustrating improvements such as leading pedestrian interval, high visibility crosswalk striping, pedestrian island, diagonal curb ramp, transit bypass lane with a queue jump and bike box.

Minor intersection improvements represent signalized intersections where Alameda Avenue intersects with collector or local roadways. Typical recommended elements include the following:

- Signal timing adjustments and leading pedestrian intervals.
- High visibility crosswalk striping.
- Median extensions and pedestrian islands.
- Reduced pedestrian crossing distances through lane narrowing and/or dedicated turn lane removal.
- Reduced curb radii.
- Diagonal curb ramps.
- Transit bypass lanes (in the short/mid-term before bus rapid transit is implemented).
- Transit queue jumps (in the short/mid-term before bus rapid transit is implemented).
- Relocation of transit stops to the far side of the intersection.
- Intersection geometry modifications to allow bike lanes through the intersection.
- Bike boxes for bicyclists stopped at the intersection.

- Dedicated bike signal phase and/or right-turn restrictions to prevent vehicle/bike crashes.
- Bike conflict markings through the intersection.

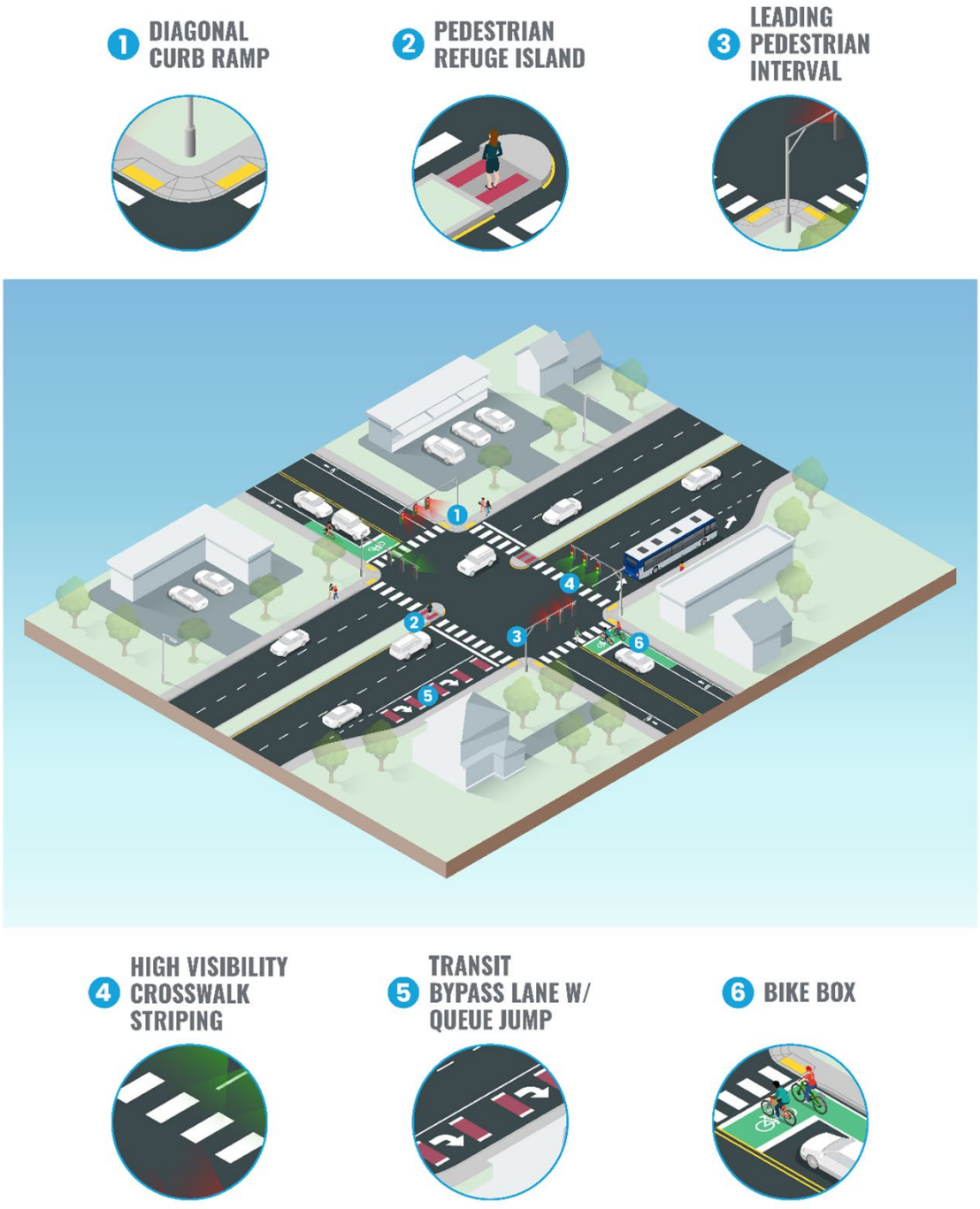


Figure 5. Major intersection improvements

Mid-block or unsignalized intersection crossing improvements relate to pedestrian crossings between signalized intersections. Typical improvements may include the following:

- Pedestrian hybrid beacon signal.
- Hardened median islands/pedestrian refuge.
- High visibility crosswalks.
- Pedestrian signage.
- Americans with Disabilities Act (ADA) curb ramps.

Figure 6 shows a typical mid-block crossing with the recommended elements of pedestrian hybrid beacon signal, pedestrian refuge, high visibility crosswalk, pedestrian signage and ADA curb ramps.

Short/mid-term segment-wide transit improvements may include the following. Note that bus bypass lanes, queue jumps, and mobility hubs are incorporated into the intersection-specific recommendations.

- Transit signal priority.
- Transit stop pullout removal.
- Transit stop consolidation.
- Transit frequency recommendations.

Bike network improvements extend beyond Alameda Avenue along intersecting streets and primarily include improvements to existing intersecting bike facilities or new intersecting bike facilities to provide greater connectivity between the corridor and the overall bike network.

Corridor speed and safety improvements address speed concerns along the corridor. Typical improvements may include the following:

- Narrowed general purpose travel lane widths.
- Medians.
- Traffic calming features such as traffic circles.
- Enforcement measures to discourage speeding.
- Road diets or lane repurposing.

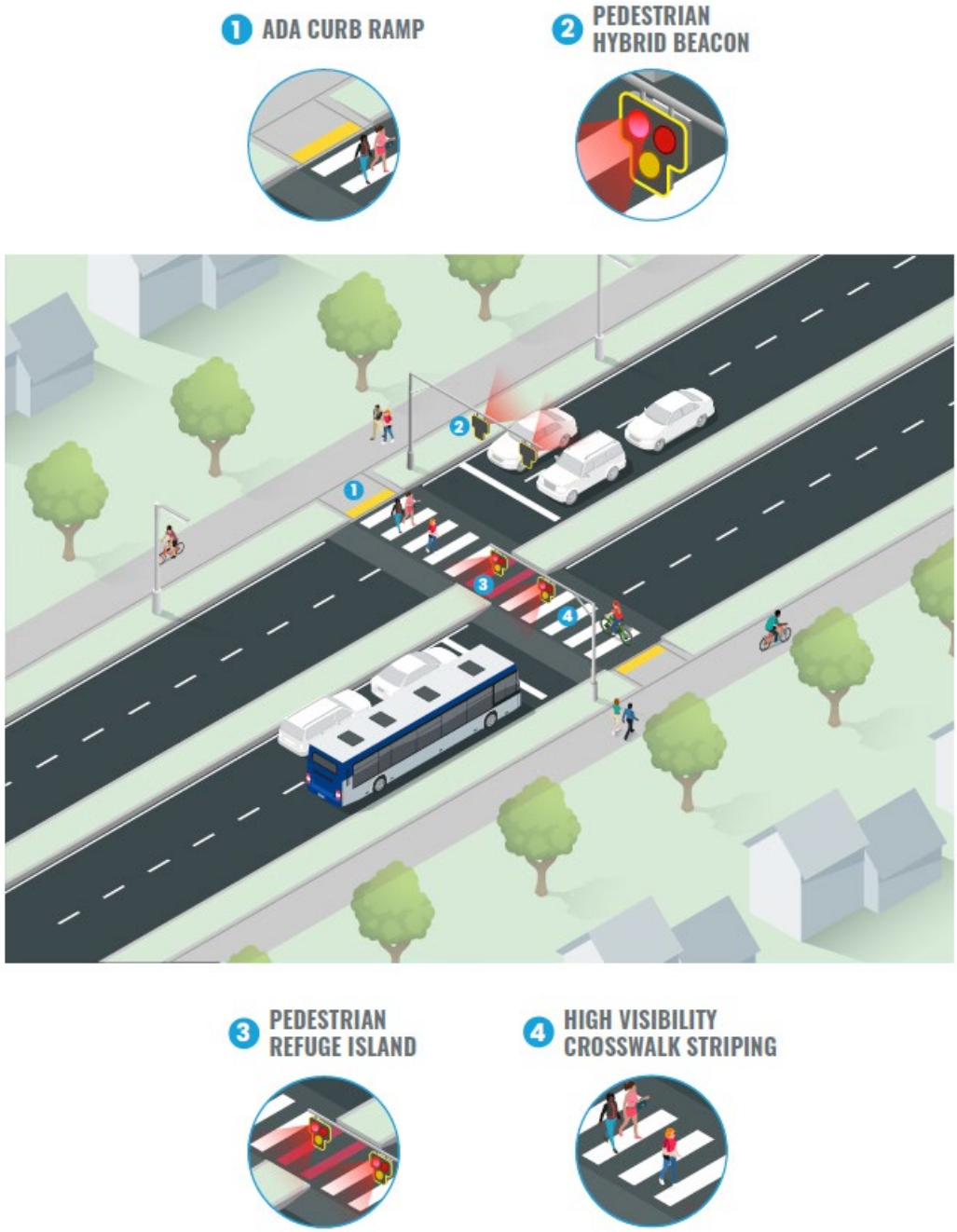


Figure 6. Mid-block or unsignalized intersection crossing improvements

Sidewalk and public realm improvements address missing or deficient sidewalks, as well as the public realm in between intersections along the corridor. Typical improvements may include the following:

- Sidewalk gap elimination.
- Widened sidewalks.
- Sidewalk amenity zones.
- Wayfinding.
- Lighting.
- Shade trees.
- Planted medians.
- Green infrastructure.
- Public art.
- Other placemaking and streetscape improvements.

Figure 7 shows typical sidewalk/public realm improvements, including the recommended elements of an amenity zone, shade trees, pedestrian lighting and wide detached sidewalks.

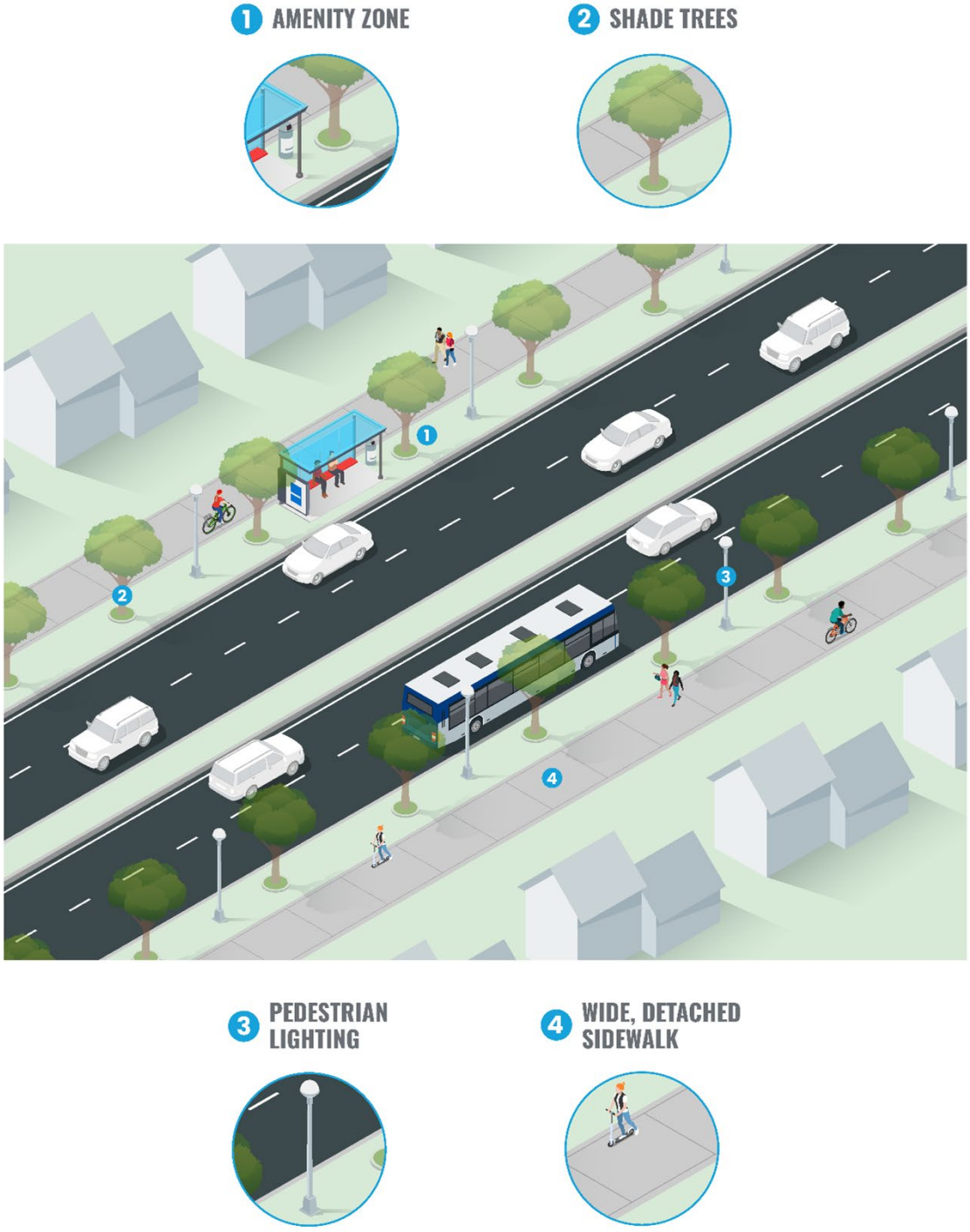


Figure 7. Sidewalk and public realm improvements

What is bus rapid transit?

Bus rapid transit (BRT) refers to high-capacity, bus-based transit service designed to increase service frequency and incorporate elements of rail-based transit services. System-level BRT components feature improvements to both transit infrastructure and service, meaning riders benefit from additional amenities and more frequent, consistent service spans that decrease travel time.
DRCOG and key partners, including the City and County of Denver, City of Aurora, Colorado Department of Transportation and RTD, have established the Regional BRT Partnership to deliver the bus rapid transit network included in the 2050 Regional Transportation Plan to improve the efficiency of transit travel in the region. Bus rapid transit projects along East Colfax Avenue (including the extension to E-470), Federal Boulevard, Colorado Boulevard, and CO 119 are planned to be operational by 2030 and will collectively help the region address its commitments to reducing greenhouse gas emissions while improving multimodal connectivity and safety.

Bus rapid transit projects can look different depending on the specific needs and constraints of each corridor. Specific decisions about the design and operations of bus rapid transit on the Alameda Avenue corridor will be made through a subsequent bus rapid transit-specific planning process. The Regional BRT Partnership is working to define common elements of bus rapid transit projects in the Denver region that could be considered in future studies on this corridor. Common elements include the following.

Enhanced bus stations feature amenities like real-time arrival information, pay stations to allow streamlined off-board fare collection, weather protection, and additional seating and lighting. **Figure 8** shows examples of enhanced bus station features.

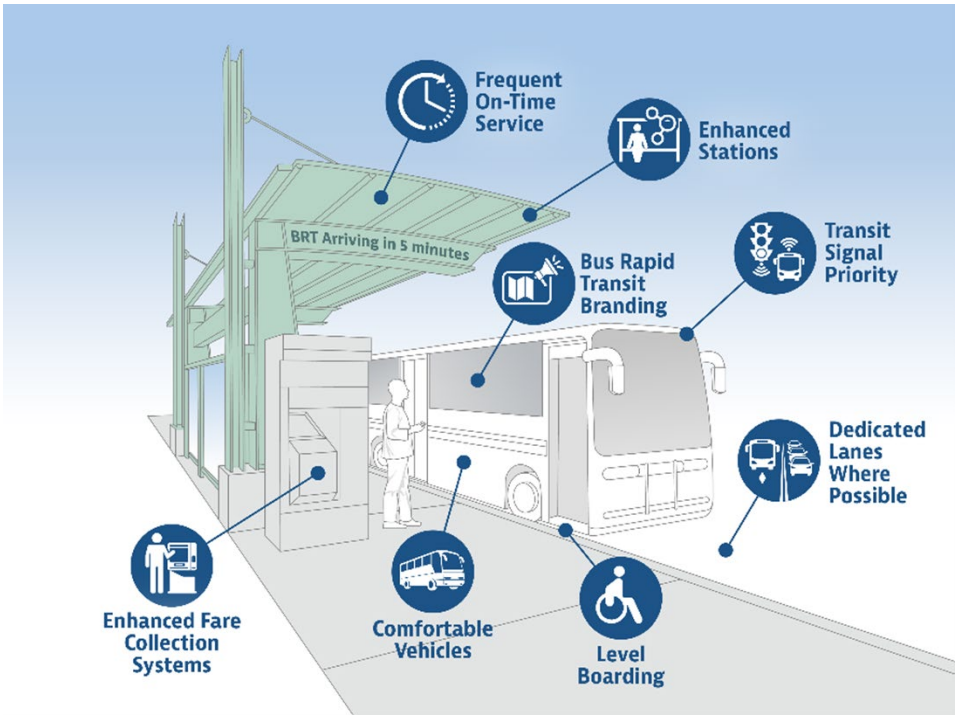


Figure 8: Enhanced bus station

Bus station platforms that are higher than the typical curb height allow **level or near--level bus boarding** and reduce or eliminate the need to deploy a ramp for riders who use mobility assistance devices or those riding with strollers.

Better stop spacing than a typical bus route provides faster travel times by balancing proximity to a stop with the need for buses to stop less often. Bus rapid transit stations are typically spaced every one-third to one-half mile apart, compared to one-eighth mile or closer spacing on many local bus routes, including Alameda.

Frequent bus service, buses arrive at least every 10 to 15 minutes all day and on weekends, compared to typical local buses that may only reach 15-minute frequency during peak commute periods.

Infrastructure investments that decrease travel time between stations include any combination of the following:

- **Transit signal priority** prioritizes transit by adjusting signal phasing to allow a bus to move through an intersection without stopping to help keep the bus on time, as shown on **Figure 9**. Examples include signals that extend green lights to make sure buses make it through the intersection, provide an early green light when a bus is present, or optimize signal timing for transit speeds.

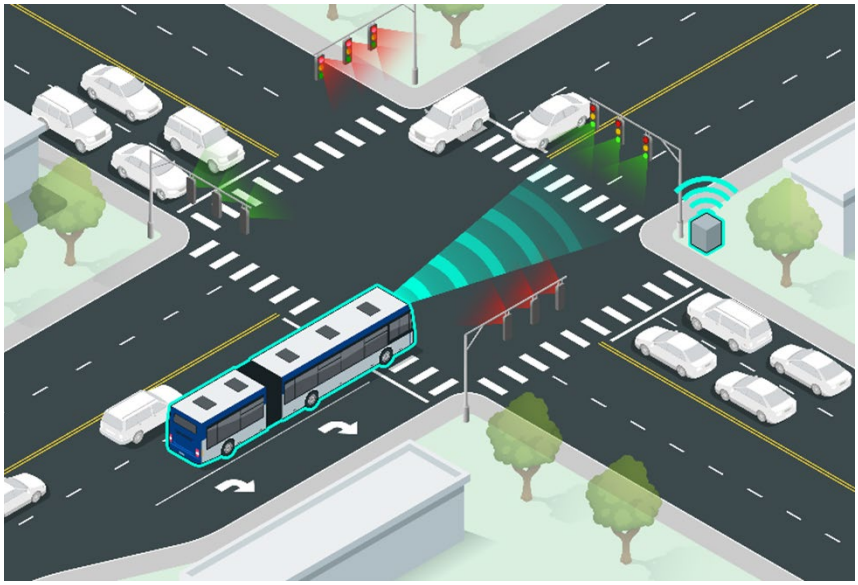


Figure 9: Transit signal priority

- **Bus bypass/approach lanes** are short segments of bus lanes that provide space for buses to get ahead of traffic, often near intersections. Bypass lanes can permit right-turning vehicles.
- **Bus queue jumps signals** can give a bus a head start when there is no room for a bus to merge back into traffic after a bypass lane. These signals facilitate a bus's ability to rejoin traffic, as show on **Figure 10**.

Figure 10: Bus bypass/approach lane with queue jump signal

- **Bus bulbs or in-lane bus stops** keep buses in the travel lane and eliminate the need for a bus to wait to re-enter the flow of traffic.

- **Bus-Only Lanes**, as shown on **Figure 11**, can be curbside, parking-adjacent or run down the center of the roadway. Typically, curbside and parking-adjacent bus lanes permit right -turns to be made from the bus lane and are sometimes referred to as **Bus and Transit (BAT) lanes**. Some bus lanes feature temporal restrictions (that is, “Peak Period Bus Lanes”) and can serve general traffic or other curbside functions like loading or parking during non-peak times.

Figure 11: Bus-only lane

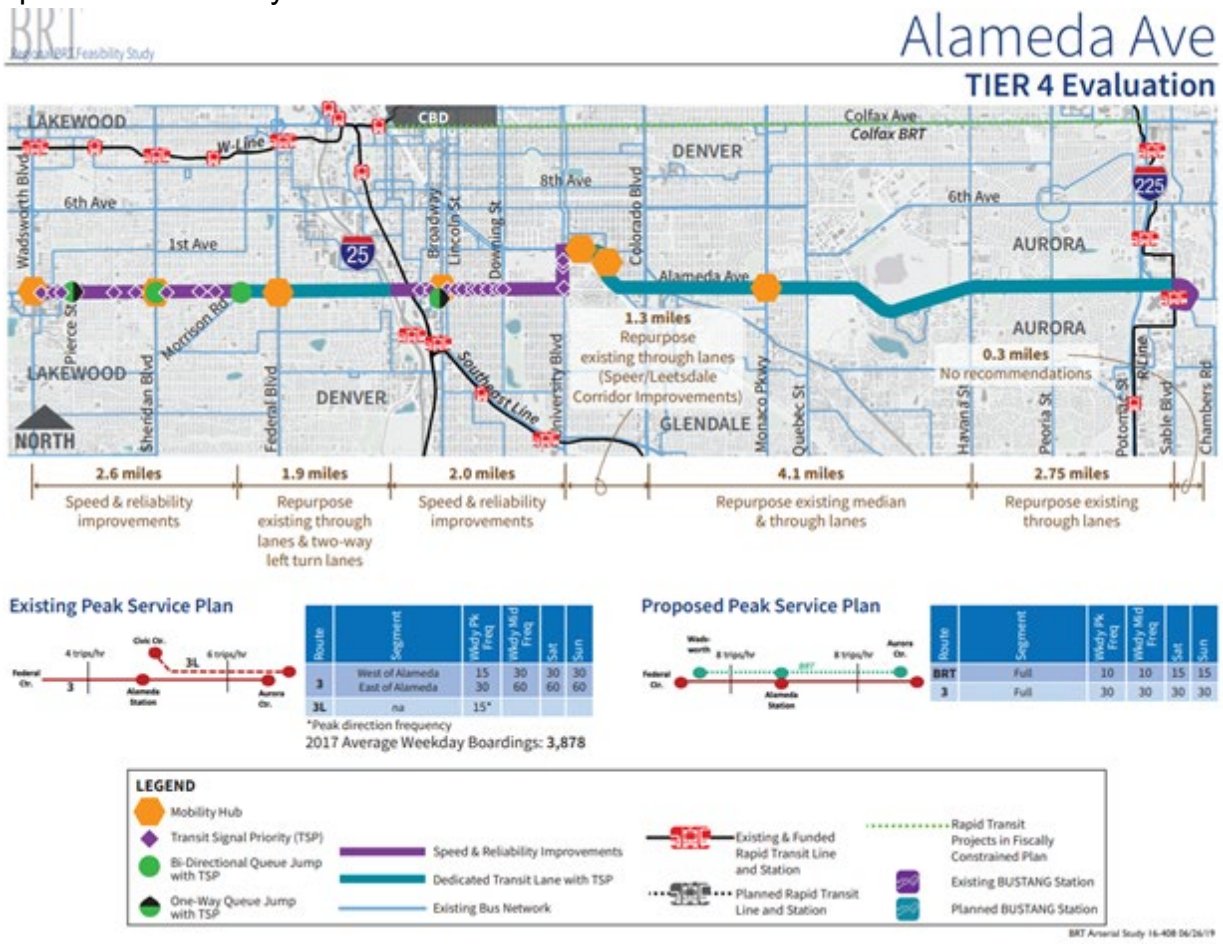
- **Peak Period Bus Lanes** are bus-only lanes that feature temporal restrictions and can serve general traffic or other curbside functions like loading or parking during non-peak times.

While most of these common elements serve the transit function of bus rapid transit projects by speeding up buses and providing a more comfortable passenger experience, they also have important benefits for all roadway users. For example, bus bulbs can improve pedestrian safety by shortening the pedestrian crossing distance at an intersection.

Opportunities for bus rapid transit on Alameda Avenue

Creating a bus rapid transit project along Alameda Avenue aligns with long-range transit plans from various agencies. DRCOG’s 2050 Regional Transportation Plan identifies Alameda Avenue as a bus rapid transit project implemented between 2030 and 2039. The Denver Moves: Transit Plan identifies Alameda Avenue as both a regional bus rapid transit investment and a high-frequency bus route on the city’s frequent transit network. Alameda Avenue advanced to Tier 4 of RTD’s Regional Bus Rapid Transit Feasibility Study, meaning that RTD identified the corridor as one of the most promising bus rapid transit corridors that could be eligible for competitive federal funding opportunities.

The Alameda Avenue Corridor Plan is the first step in advancing a bus rapid transit project on Alameda Avenue. As part of the process to identify short-, mid- and long-term investments along the corridor, the project team performed a high-level analysis of transit investment opportunities to identify where bus rapid transit elements may be feasible within the corridor. As a starting point, the project team referenced the Regional Bus Rapid Transit Feasibility Study Tier 4 evaluation (**Figure 12**) to see how previous technical analysis and stakeholder feedback informed bus rapid transit investment opportunities throughout the corridor. That study identified the stretches between Morrison Road and I-25, between University Boulevard and Cherry Creek N Drive along 1st Avenue/Steele Street, and between Cherry Creek N Drive and Sable Boulevard as the most promising areas to implement dedicated transit lanes and recommended speed and reliability treatments for the rest of the corridor.



Source: Regional Bus Rapid Transit Feasibility Study, 2018
Figure 12: Alameda Avenue Tier 4 evaluation

The project team explored additional opportunities to advance transit improvements throughout the corridor. Many of these improvements could be built through a phased

approach to lay the groundwork for the future bus rapid transit project or could be delivered as part of a comprehensive construction project. These recommendations are preliminary in nature, and a future bus rapid transit-specific Alternatives Analysis is recommended as the next step in advancing bus rapid transit on Alameda Avenue. This type of study will work closely with the community to conduct a detailed technical study of the tradeoffs between implementing transit priority treatments and impacts on, and benefits to, the surrounding transportation network.

Implementing bus rapid transit on Alameda Avenue supports the overall goals identified with stakeholders as part of the Alameda Avenue Corridor Plan. **Table 1** describes how bus rapid transit advances these goals.

Table 1: How bus rapid transit supports corridor plan goals

Alameda Avenue Corridor Plan Goal	How does bus rapid transit (BRT) support this goal?
Connectivity	BRT on Alameda will serve many regional and community activity hubs like Belmar, Cherry Creek and Aurora Metro Center with frequent and reliable service. BRT will also connect to existing and planned high-capacity transit, including the existing D, E, H and R light rail lines and future Federal Boulevard, Colorado Boulevard and Speer/Leetsdale BRT lines. Transit improvements will also include improved crossings for those crossing Alameda on foot or bicycle.
Safety	BRT implementation will be coordinated with intersection safety improvements, and re-thinking the street layout could lead to other safety improvements between intersections like narrower general traffic lanes to slow speeding. Bus lanes in areas of roadway widening can also act as roadside buffers to reduce vehicle collisions with roadside objects and improve interaction with vehicles entering and emerging from side roads.
Improve transit	BRT will make transit faster and more reliable throughout the corridor, as well as enhance passenger experience with high-quality stations and comfortable, modern buses.
Accessibility	BRT stations will address many inequities in amenities at existing bus stops and will comply with all ADA accessibility requirements. Potential elements like level-boarding at stations would also make the bus more accessible to those using mobility devices.

Alameda Avenue Corridor Plan Goal	How does bus rapid transit (BRT) support this goal?
Mobility	BRT implementation will be coordinated with first/last mile bike/ped projects to ensure access to and from the stations. Infrastructure and signal improvements at intersections and station locations will directly benefit pedestrian circulation. Traffic analysis will be performed in future studies to understand potential impacts to general traffic that may result from BRT.
Vibrancy	BRT stations often include placemaking opportunities that reflect the context of local neighborhoods in addition to accommodating artwork by local artists. Local jurisdictions can also align development regulations to encourage equitable transit-oriented development within the BRT station areas.

Corridor-wide transit opportunities

Implement transit signal priority

Regardless of where dedicated transit lanes may be feasible, implementing transit signal priority will be key to maximizing transit's ability to efficiently navigate the corridor. At major intersections where transit currently experiences the most delay such as Sheridan Boulevard, Federal Boulevard, University Boulevard, Colorado Boulevard, Monaco Parkway, and Havana Street, transit signal priority can be especially effective.

Stop consolidation

Currently, at least 75 bus stop pairs serve Route 3 and Route 3L within the corridor study area. Consolidating stops to align with bus rapid transit stop spacing best practices of one-third to one-half mile would cut the number of stations by more than one-half to roughly 30 stations between Wadsworth Boulevard and the Aurora Metro Center. In similar projects, stop consolidation reduced transit travel times by as much as 20 percent. Decisions about which stations should be implemented as part of the bus rapid transit project will occur with extensive community input as part of the Alternatives Analysis phase.

The project team identified preliminary locations where stop consolidation could be pursued as part of a future BRT investment on Alameda Ave based on proximity to major destinations, connections to other bus lines, and existing bus ridership. **Figure 13** shows the general locations where these stations could be located, along with other areas where further study is needed to identify preferred station locations. Note that these locations are described in terms of the closest major intersection – the exact location of station platforms would also be determined through design efforts in later phases of BRT planning.

DRAFT

Preliminary Alameda BRT Station Map

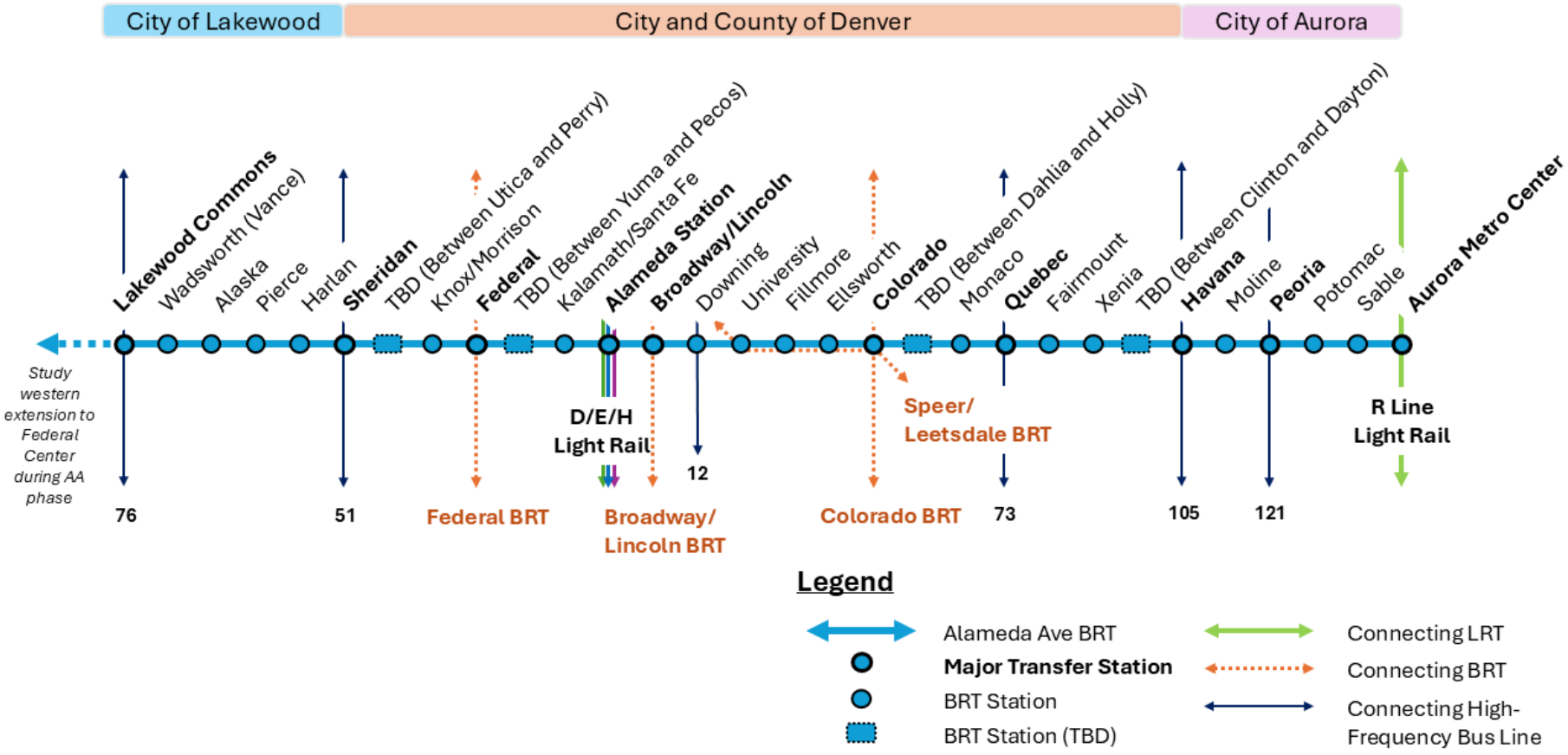


Figure 13: Conceptual BRT Station Diagram

Certain key stops are promising candidates for introducing mobility hubs that combine traditional travel modes (usually high-frequency bus routes) with other first/last mile modes, such as shared mobility services in one convenient location. Mobility hubs may include wayfinding, access to goods/services and information. They also create a sense of place to strengthen bonds and provide a community gathering place.

Key mobility hub candidate locations include:

- Wadsworth Boulevard/Lakewood Commons.
- Sheridan Boulevard.
- Federal Boulevard (Planned bus rapid transit connection).
- Connection to the Alameda Avenue Light Rail Transit Station.
- Broadway/Lincoln Street (Future bus rapid transit connection).
- 1st Avenue and University Boulevard (Future bus rapid transit connection to Speer/Leetsdale/Parker bus rapid transit).
- Colorado Boulevard (Planned bus rapid transit connections [Colorado bus rapid transit and Speer/Leetsdale/Parker bus rapid transit]).
- Quebec Street.
- Havana Street.
- Aurora Metro Center Station (R Line Light Rail Transit connection).

Increase transit frequency

Existing and planned transit frequency

The following describes the existing transit frequency along the corridor, as well as the proposed frequencies based on RTD's System Optimization Plan that recommends splitting Route 3 into two distinct routes at Alameda Station, Route 3W (**Figure 14**) and Route 3E (**Figure 15**). RTD's System Optimization Plan recommended no modifications to Route 3L.

Route 3, Current

- 30-minute frequencies west of Alameda Station until 7 p.m. seven days a week
- 60--minute frequencies east of Alameda Station until 7 p.m. seven days a week
- 60--minute frequencies west of Lincoln during evening/late night hours
- No service east of Lincoln during evening/late night hours.

Route 3L, Current/Proposed

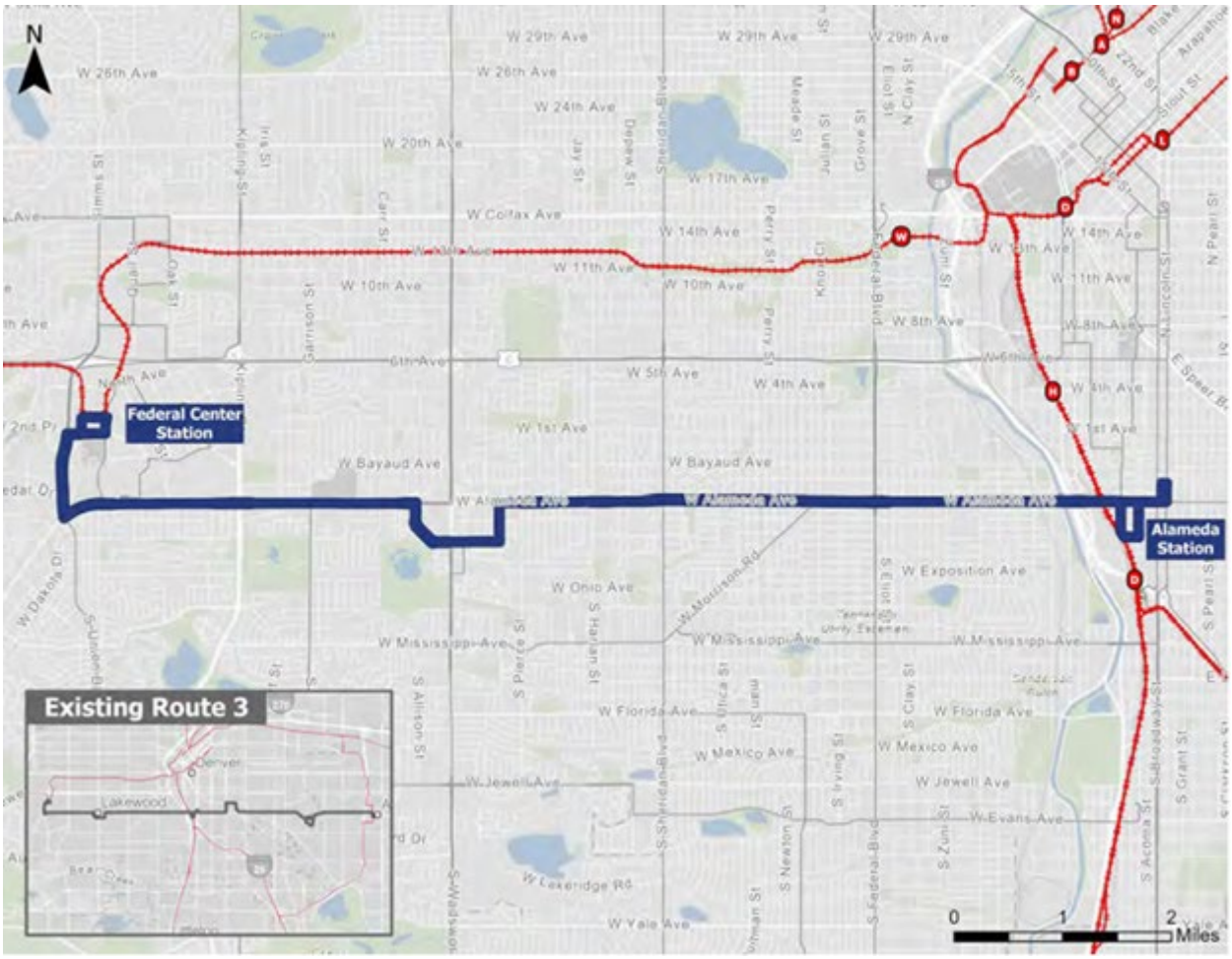
- Route 3L operates only during weekday peak hours—three westbound trips a day in the a.m. peak and three eastbound trips a day in the p.m. peak.

Route 3W, Proposed

- 15-minute frequencies west of Alameda Station during weekday peak and mid-day hours

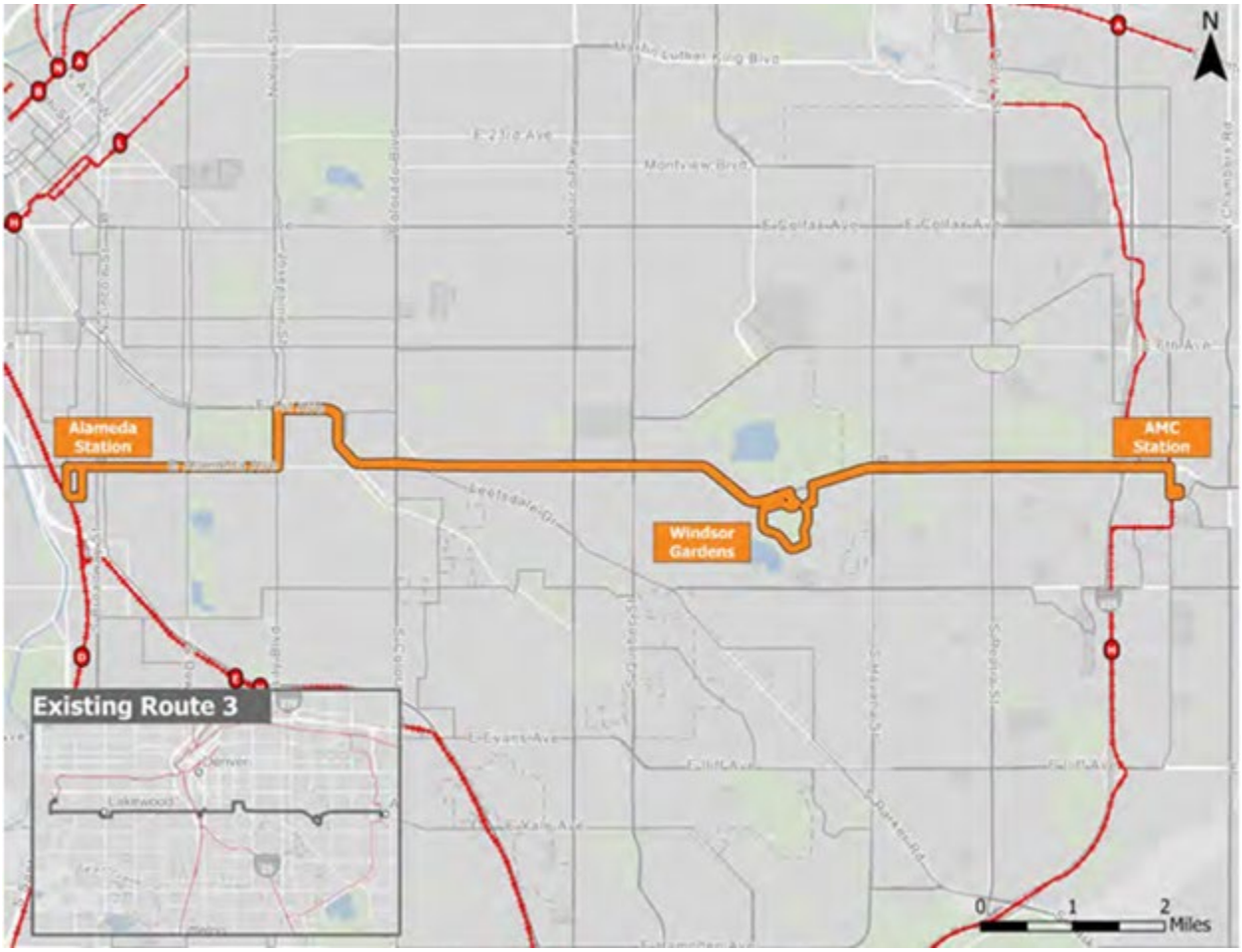
Route 3E, Proposed

- ✚ 30-minute frequencies east of Alameda Station during weekday peak and mid-day hours



Source: RTD System Optimization Plan, 2022

Figure 14: Route 3W



Source: RTD System Optimization Plan, 2022

Figure 15: Route 3E

Bus rapid transit frequency

Bus rapid transit projects typically operate with at least 15-minute frequencies during most times of day, including weekends. While 15-minute service meets the minimum criteria for bus rapid transit investment, this study recognizes the opportunity to grow transit ridership by investing in even more frequent service. As bus rapid transit advances on the Alameda corridor, regional partners should consider what level of service is warranted to deliver high-quality bus rapid transit service, the potential increase in cost and a strategy to fund the service increase. Bus rapid transit service patterns will be explored in more detail during the Alternatives Analysis phase, which will determine whether operating two separate routes as recommended by the System Optimization Plan or consolidating the routes similar to the current Route 3 functionality would best serve a bus rapid transit project in the corridor. During the Alternatives Analysis phase, consideration will also be given to how more efficient and reliable service can result in improved operating cost efficiency.

Segment-level bus rapid transit opportunities and constraints

Segment 1 (Wadsworth to Sheridan)

The RTD Regional Bus Rapid Transit Feasibility Study identified Segment 1 for bus speed and reliability improvements rather than dedicated bus lanes. The Corridor Plan recommends conducting more detailed traffic analysis in the next phase of project development to determine whether BAT and/or bus-only lanes are feasible in one or both directions, especially where three general traffic lanes exist today.

Corridor Plan stakeholders also expressed an interest in studying the bus rapid transit project's western terminus in more detail during later study phases. While the RTD Regional Bus Rapid Transit Feasibility Study identified Wadsworth as the western terminus, the current Route 3 and planned Route 3W extend west of Wadsworth Boulevard to Federal Center Station, with connections available to several other bus routes, as well as the W Line light rail.

Segment 2 (Sheridan to I-25)

The RTD Regional Bus Rapid Transit Feasibility Study identified Segment 2 for dedicated bus lanes. Currently, in Segment 2 between Sheridan and Morrison Road, there are two general purpose lanes in each direction with the bulk of the rest of the right-of-way devoted to a landscaped median and wide sidewalks, with bus pullouts located throughout. Accommodating dedicated lanes in this segment would require repurposing the outside general travel lane or modifying the curb locations of the existing sidewalk or medians.

Between Morrison Road and I-25, more curb-to-curb pavement space is available to repurpose with a third general travel lane in the westbound direction. There is a need to rethink the street cross section to accommodate other corridor improvements such as wider sidewalks and medians. There is also strong community interest for additional street trees and other green infrastructure in this segment, which should be a key consideration when reconsidering the cross section. As long-term improvements are made to this part of the corridor, the design can accommodate dedicated bus lanes.

Segment 3 (I-25 to University Boulevard)

The City and County of Denver plans to improve the underpass along Alameda Avenue between Santa Fe Drive and Cherokee Street. As design progresses, transit priority treatments for future bus rapid transit on Alameda Avenue should be considered, including underpass widening to provide space for dedicated transit lanes. Today, Route 3 buses turn on Cherokee Street to reach the Alameda Light Rail Transit Station, often slowing down bus trips. Future planning should explore routing through the Broadway Station development and access to the Alameda Station to determine the

best way to balance bus rapid transit speed and reliability with facilitating transfers to light rail transit. Routing decisions should also consider the interface with Route 0/0L along Broadway/Lincoln, both an existing frequent service corridor and a future bus rapid transit investment priority, making this location a promising candidate for a mobility hub.

East of Logan Street, Alameda Avenue right-of-way reduces significantly, and the roadway cross section transitions from five lanes to four lanes to two lanes. Denver's Department of Transportation and Infrastructure is currently studying implementation of a lane reduction project between Logan and Franklin to improve safety. If dedicated transit lanes cannot be accommodated between Logan and University, future bus rapid transit will likely need to rely on speed and reliability treatments such as signal priority to efficiently traverse this part of the corridor.

Segment 4 (University Boulevard to Quebec Street)

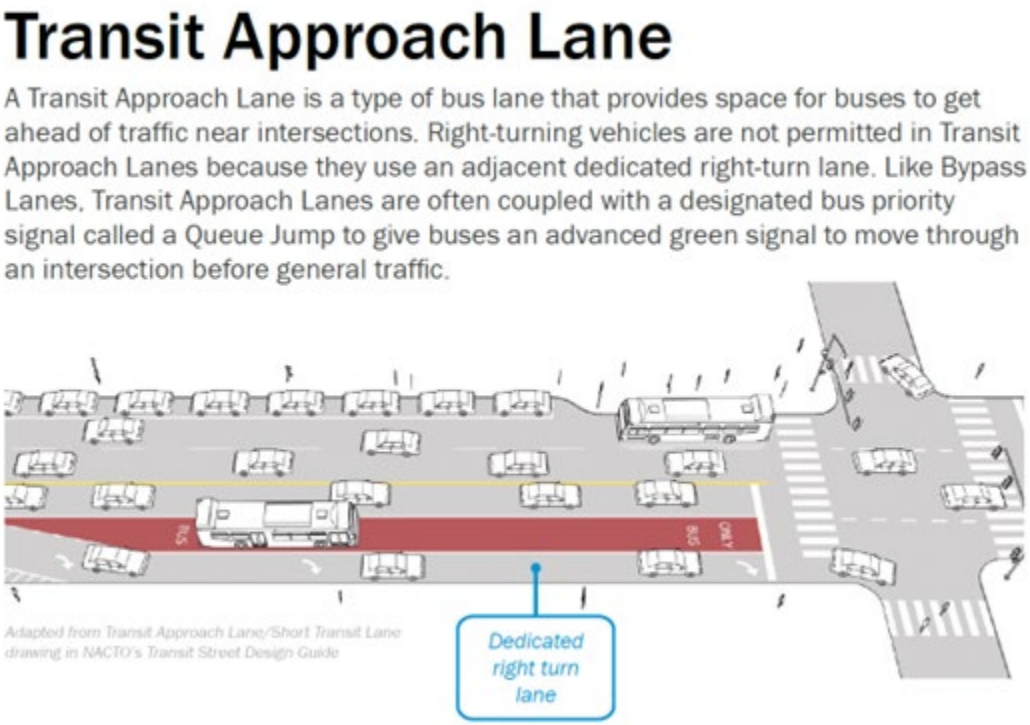
The Regional Bus Rapid Transit Feasibility Study identified Segment 4 for dedicated bus lanes. The 2017 Go Speer Leetsdale Study and the recently adopted Denver Moves: Cherry Creek Plan recommend converting the outside lanes on 1st Avenue and Steele Street into BAT lanes from University Boulevard to at least Bayaud Street in the mid-term. In the long term, overlapping bus rapid transit service along Speer/Leetsdale and Alameda could justify more transformative investment between University and Leetsdale given the high frequency of buses that will use this part of the corridor. Complete reconstruction of the corridor through Cherry Creek with enhanced placemaking could be considered in the long term.

Future phases of bus rapid transit project development should more thoroughly explore routing options for both Speer/Leetsdale Bus Rapid Transit and Alameda Avenue Bus Rapid Transit through the Cherry Creek neighborhood. Route 40 on Colorado Boulevard is currently (and planned to remain) a frequent service route. It is also planned for bus rapid transit investment, making this intersection a promising candidate for a mobility hub.

The existing curb-to-curb dimensions on Alameda between Leetsdale and Monaco are close to 30 feet in each direction, which is almost wide enough to accommodate two 10-ft. general purpose lanes and an 11-ft. BAT/bus-only lane. Future bus rapid transit investment could rely on minimal adjustments to existing curbs/medians to accommodate transit lanes in both directions, although any adjustments should consider potential impacts to safety by widening the curb-to-curb space.

Currently, three general purpose lanes in each direction between Monaco and Quebec make this portion of the corridor a promising candidate for introducing short-term transit improvements by converting the curb lane to BAT/bus-only lanes. The existing intersection geometries at Monaco and Quebec can also accommodate right-turning

vehicles by having the bus lanes function as BAT lanes or introducing Transit Approach Lanes (**Figure 16**) that maintain dedicated vehicle right-turn movements while giving buses a head start to avoid intersection queues. Route 73 on Quebec Street is currently (and planned to remain) a frequent service route, making this location a promising candidate for a mobility hub.



Source: Denver's Department of Transportation and Infrastructure Bus Priority Treatments Toolkit, 2023

Figure 16: Transit Approach Lane Description

Segment 5 (Quebec Street to Havana Street)

The Regional Bus Rapid Transit Feasibility Study identified Segment 5 for dedicated bus lanes. The existing curb-to-curb dimensions are close to 30 feet in each direction, which is almost wide enough to accommodate two 10-ft. general purpose lanes and an 11-ft. BAT/bus-only lane. Future bus rapid transit investment could rely on minimal adjustments to existing curbs/medians to accommodate transit lanes in both directions.

Segment 6 (Havana Street to Sable Boulevard)

The Regional Bus Rapid Transit Feasibility Study identified Segment 6 for dedicated bus lanes. The Corridor Plan recommends conducting more detailed traffic analysis in the next phase of project development to determine whether BAT and/or bus-only lanes are feasible in one or both directions between Havana and Sable.

Route 105 on Havana Street is currently (and planned to remain) a frequent service route. Havana Street is also another Tier 4 bus rapid transit candidate corridor identified through the Regional Bus Rapid Transit Feasibility Study, making this location a promising candidate for a mobility hub.

Segment Recommendations

This section details recommendations for each of the six segments of the Alameda Avenue corridor. The Alameda Corridor Plan's Vision, Purpose and Goals, community feedback, input from key project stakeholders and previous planning work completed along the corridor have informed these recommendations. These recommendations advance the established Vision, Purpose and Goals by identifying initial corridor improvements that project partners will further evaluate and carry forward. This project did not conduct detailed traffic counts or develop detailed conceptual designs. Each segment discussion details both segment-wide recommendations and location-specific recommendations, grouped by six primary improvement categories presented in the previous chapter.

To ensure that the Alameda Corridor Plan remains consistent with previously identified goals and recommendations, the project team compiled and reviewed previous planning efforts that focused on specific Alameda Avenue project ideas and transportation-focused goals and objectives. These plans varied in the level to which they focus specifically on Alameda Avenue. Segment- and/or jurisdiction-specific plans are noted in their respective segment recommendation sections, but past regional plans relevant to all segments included:

- DRCOG 2050 Metro Vision Regional Transportation Plan, 2022.
- DRCOG Regional Complete Streets Toolkit, 2021.
- DRCOG Active Transportation Plan, 2019.
- RTD System Optimization Plan, 2022.
- RTD Regional Bus Rapid Transit Feasibility Study, 2018.

While all the recommendations seek to enhance multimodal safety and connectivity, the specific reasoning behind each one varies. In the second column of each project recommendation table, the general type and focus(es) of each project recommendation are indicated. Five primary reasonings, all derived from the corridor conditions analysis, formed the basis for recommendation development: Equity, Safety Concern, Bicycle Mobility, Pedestrian Mobility, and Transit Mobility. Community and stakeholder input also informed development of recommendations but was generally broader in nature and less specific to certain types of potential improvements.

Recommendation timeframes

All recommendations are categorized as short-term, mid-term or long-term to allow flexibility in project prioritization based on unpredictable resource and budgetary considerations. Key criteria for each category are described below.

Short-term recommendations represent quick-win projects that can be implemented relatively easily. Key factors include:

- **Immediate need:** Projects addressing urgent needs related to safety concerns and other project goals. The community supports addressing these needs, which requires minimal additional analysis to implement the improvements.
- **Cost-effectiveness:** Projects with relatively low-cost requirements and clear funding opportunities that can deliver significant improvements in the short term.
- **Low to moderate complexity:** Projects that require minimal stakeholder coordination and/or design work.
- **Quick implementation:** Projects that can be implemented using quick-build materials, with minimal disruption to existing infrastructure or services.

Mid-term recommendations represent projects with longer timeframes and higher budgets. Projects will typically require additional analysis, coordination and larger amounts of funding. Key factors include**:**

- **Additional evaluation and engagement:** Additional localized safety and traffic analysis is required to develop alternatives and select the best approach for improvements.
- **Increased cost considerations:** Beyond the cost of quick-build projects; additional budget allocations may need to be made to cover project costs.
- **Growing complexity:** Additional stakeholders and resource coordination may be required to implement the project.
- **Balanced timeframe:** Projects that align with the broader long-term corridor strategy while also addressing current needs.

Long-term recommendations represent complex projects that require significant amounts of additional analysis and coordination, along with high levels of funding. Key factors include:

- **Significant evaluation and engagement:** Requires further safety, traffic, and modeling analysis at a broader scale, along with comprehensive community engagement.
- **Major investment:** Involves substantial capital commitments from local and state agencies, pursuit of grants and other creative funding approaches.
- **High complexity:** Involves initiatives requiring major modifications to the --right-of-way, utility coordination and/or engineering.
- **Longer implementation timeframe:** Contributes to the long-term vision of Alameda Avenue as a high-frequency bus rapid corridor (2030–2040 project implementation timeframe).

Segment 1: Wadsworth Boulevard to Sheridan Boulevard

Segment 1 overview

Existing conditions and context

Segment 1 is within the city of Lakewood and spans Wadsworth Boulevard to Sheridan Boulevard. The Belmar Shopping District is a major destination on the west side of Segment 1 and includes shopping and dining options in direct proximity to Alameda Avenue, along with multifamily and single-family housing options. Moving east along the corridor, the character becomes more suburban with single-family homes and a mix of chain retail stores and small businesses primarily accessed by off-street parking directly adjacent to the Alameda Avenue corridor. The Coca Cola All-Star Park baseball field is another major landmark along Segment 1 at Alameda Avenue and Harlan Street.

Relevant plan and project overview

The project team identified three planning documents that are relevant specifically to Segment 1 of Alameda Avenue:

- Lakewood Bicycle System Master Plan, 2018.
- Lakewood Comprehensive Plan, 2015.
- Lakewood Moves, 2015.

Key previous recommendations along this segment of Alameda Avenue include continued build-out of the planned active transportation network in Lakewood, including enhanced bicycle/pedestrian crossing treatments at intersections on the corridor.

Safety assessment

The safety assessment for this project, conducted as part of the Existing Conditions Report, reviewed the crash history for all segments of the Alameda Avenue corridor. The data below summarizes the crash data analyzed for Segment 1 during the period of Jan. 1, 2017, to Dec. 31, 2021.

Crash history

The project team evaluated the corridor crash history for the period of Jan. 1, 2017, to Dec. 31, 2021, to understand the magnitude and nature of existing safety problems within Segment 1 of the Alameda Avenue corridor. During the study period, the study area recorded 146 crashes resulting in injuries and 4 crashes resulting in fatalities. All of Segment 1 is also part of DRCOG's regional High Injury Network.

Crash types resulting in injuries and fatalities

The project team evaluated crash types in Segment 1 to understand which movements and collision types most commonly result in injuries or fatal crashes. The most common severe crash types between Wadsworth Boulevard and Sheridan Boulevard were:

- Broadside: 44 crashes.
- Rear End: 42 crashes.
- Approach Turn: 28 crashes.
- Bicycle or Pedestrian: 20 crashes.
- Overturning: 5 crashes.

Severe crashes by location type

The project team evaluated crash locations to understand which types of facilities within Segment 1 are more susceptible to crashes that involve injuries or fatalities.

- Intersection/Related: 124 injury-related crashes and 1 fatal crash.
- Non-Intersection: 17 injury-related crashes and 1 fatal crash
- Driveway: 5 injury-related crashes and 2 fatal crashes
- Fatal crashes

The project team also reviewed crashes by location type to identify where fatal crashes occur. There were four fatal crashes in Segment 1 between 2017 and 2021, two of which involved pedestrians:

- Intersection/Related: Depew Street.
- Non-Intersection: Benton Street.
- Driveway: Harlan Street (two crashes).

Crash density

The following intersections in Segment 1 had the highest concentrations of severe (fatal and injury) crashes between 2017 and 2021:

- Pierce Street: 33 severe crashes.
- Wadsworth Boulevard: 19 severe crashes.
- Sheridan Boulevard: 17 severe crashes.

Community feedback themes

Focus group feedback

The focus group discussion in Segment 1 centered on connectivity, mobility and safety along the corridor between Wadsworth Boulevard and Sheridan Boulevard in

Lakewood. **Attachment A: Phase 1 Engagement Summary** includes comments received during each focus group meeting. Specific themes from the conversation included:

- Safety concerns for bikes and pedestrians crossing Alameda Avenue, as well as crossing Wadsworth Boulevard near this segment.
- Safety concerns presented by frequent driveways for people walking or riding bicycles along detached sidewalk/path.
- Interest in extending the future bus rapid transit corridor further west to the Union corridor and/or Federal Center.

Phase 1 Social Pinpoint map feedback

Key themes from the commenting map feedback in Segment 1 included:

- Safety concerns with the wide roadway cross-section and large footprints of major intersections.
- A desire to bike more along Alameda Avenue with better bike infrastructure.
- High vehicle speeds.

Phase 2 recommendations feedback

Respondents were most excited about intersection improvements at Alameda Avenue and Wadsworth Boulevard, followed by the Sheridan Boulevard and Pierce Street intersections. Proposed bike network improvements across Alameda were the highest-priority improvement category, followed by sidewalk improvements.

Themes of the Phase 2 open-ended comments for Segment 1 included support for a safer and more comfortable pedestrian environment along Alameda Avenue, improved intersection crossings for bike facilities, additional shade trees and improved transit connectivity to the W Line.

Segment 1 recommendations

Figure 17 and **Table 2** outline the location-specific recommendations within Segment 1. Within this segment, the recommendations are largely focused on increasing the comfort and safety of walking and biking across Alameda Avenue, as this segment has a higher speed limit and wider cross-section than segments to the east. Key recommendations including several additional designated bike/ped crossing points, improved bicycle network connections, and lane narrowing.

For major and minor signalized intersections, standard short-term recommendations include installation of high-visibility crosswalk markings and evaluation of signal phasing and timing alternatives such as leading pedestrian intervals, protected left-turn phases, lagging left-turn phases and/or longer pedestrian walk phases. Standard mid-term recommendations include assessing the feasibility of adding and/or improving pedestrian median islands with features such as median tips and curbs, evaluating slip lane removal where applicable (and considering raised slip lane crossings where removal is not feasible), replacing diagonal curb ramps with directional curb ramps and minimizing curb radii.

Segment 1 Recommendations

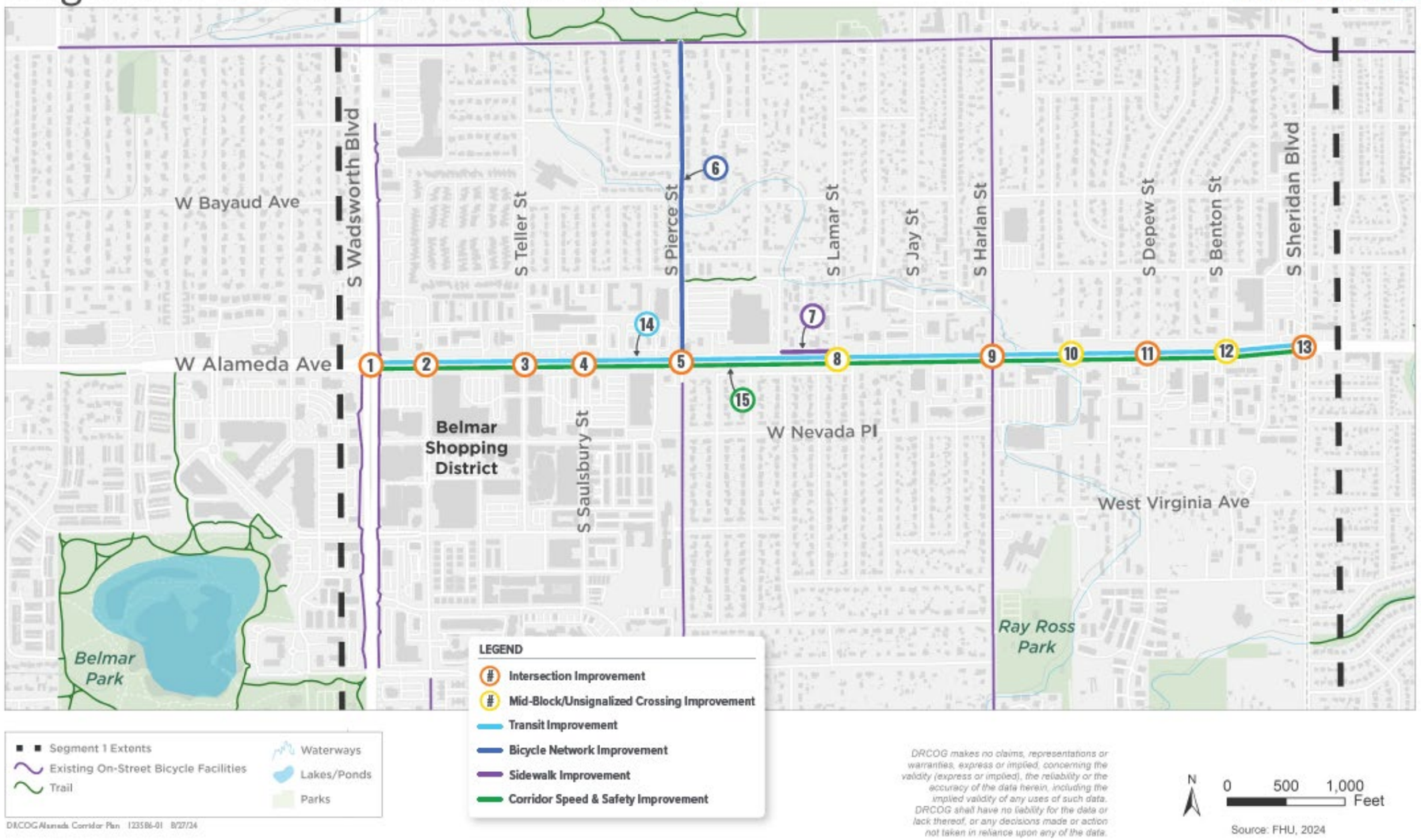


Figure 17. Segment 1 map

Table 2: Segment 1 recommendations table

Project ID and Location	Project Type: Focus	Short-Term Recommendations	Mid-Term Recommendations	Long-Term Recommendations
1: Alameda Avenue and Wadsworth Boulevard	**Major intersection**: Safety concern, transit mobility, bicycle mobility	Standard short-term recommendations (see description before Figure 15).	Standard mid-term recommendations (see description before Figure 15).	Narrow crossing distance by evaluating the removal of one dedicated left-turn lane and repurpose the space to create a pedestrian median island (all intersection legs). Implement a mobility hub due to high transit ridership and transfers between the future Alameda Avenue BRT and the Route 9 and 76 buses near this intersection.
2: Alameda Avenue and Vance Street	**Minor intersection**: Safety concern, pedestrian mobility	Standard short-term recommendations.	Standard mid-term recommendations.	Narrow crossing distance by evaluating the removal of one dedicated left-turn lane and repurpose the space to create a pedestrian median island (east and west legs of Alameda Avenue).
3: Alameda Avenue and Teller Street	**Minor intersection**: Safety concern	Standard short-term recommendations.	Standard mid-term recommendations.	No long-term recommendations.

Project ID and Location	Project Type: Focus	Short-Term Recommendations	Mid-Term Recommendations	Long-Term Recommendations
4: Alameda Avenue and Saulsbury Street	**Minor intersection**: Safety concern	Standard short-term recommendations.	Standard mid-term recommendations.	On the east leg of the intersection, narrow crossing distance by evaluating the removal of one dedicated left-turn lane and repurpose the space to create a pedestrian median island.
5: Alameda Avenue and Pierce Street	**Minor intersection**: Safety concern, bicycle mobility	Standard short-term recommendations.	Standard mid-term recommendations. Extend the existing Pierce Street bike lane through the intersection. Design considerations should include evaluating: • Signal phasing alternatives to reduce vehicle and bicyclist conflicts. • Removal of dedicated turn lanes on Pierce Street to allow a more comfortable bikeway through the intersection. • Bike boxes or protected intersections to reduce bike/vehicle conflicts at the intersection and add conflict markings through the intersection.	No long-term recommendations.
6: Pierce Street	**Bike network**: Safety concern, bicycle mobility	No short-term recommendations.	Extend the existing Pierce Street bike lane north of Alameda on Pierce Street to access O'Kane Park and the 1st Avenue bikeway.	No long-term recommendations.

Project ID and Location	Project Type: Focus	Short-Term Recommendations	Mid-Term Recommendations	Long-Term Recommendations
7: Newland Street to Lamar Street (north side)	**Sidewalk**: Pedestrian mobility	No short-term recommendations.	Design and construct a separated sidewalk with an amenity zone between Newland Street and Lamar Street on the north side of Alameda Avenue.	No long-term recommendations.
8: Alameda Avenue and Lamar Street	**Mid-block or unsignalized intersection crossing**: Safety concern, pedestrian mobility	No short-term recommendations.	Evaluate the feasibility of a pedestrian hybrid beacon signal or fully signalized intersection and hardened median islands for safe pedestrian crossing (currently 1,240 ft from the closest signalized crossing).	No long-term recommendations.

Project ID and Location	Project Type: Focus	Short-Term Recommendations	Mid-Term Recommendations	Long-Term Recommendations
9: Alameda Avenue and Harlan Street	**Minor intersection**: Safety concern, bicycle mobility	Standard short-term recommendations.	Standard mid-term recommendations. Improve the existing Harlan Street bike lane through the intersection with Alameda Avenue. Design considerations should include evaluating: • Signal phasing alternatives to reduce vehicle and bicyclist conflicts. • Removal of dedicated turn lanes on Harlan Street to allow a more comfortable bikeway through the intersection. • Bike boxes or protected intersections to reduce bike/vehicle conflicts at the intersection and add conflict markings through the intersection.	No long-term recommendations.
10: Alameda Avenue and Fenton Street	**Mid-block or unsignalized intersection crossing**: Pedestrian mobility	No short-term recommendations.	Evaluate the feasibility of a pedestrian hybrid beacon signal and hardened median islands for safe pedestrian crossing to local destinations such as affordable housing, baseball field and two health centers (currently 630 ft from the closest signalized crossing).	No long-term recommendations.

Project ID and Location	Project Type: Focus	Short-Term Recommendations	Mid-Term Recommendations	Long-Term Recommendations
11: Alameda Avenue and Depew Street	**Minor intersection**: Safety concern	Standard short-term recommendations.	Minimize curb radii.	No long-term recommendations.
12: Alameda Avenue and Benton Street	**Mid-block or unsignalized intersection crossing**: Pedestrian mobility, safety concern	No short-term recommendations.	Evaluate the feasibility of a pedestrian hybrid beacon signal and hardened median islands for safe pedestrian crossing to local destinations, particularly the restaurants and shopping centers on both the north and south sides of Alameda Avenue in proximity to Benton Street.	No long-term recommendations.
13: Alameda Avenue and Sheridan Boulevard	**Major intersection**: Safety concern, bicycle mobility, pedestrian mobility, transit mobility	Standard short-term recommendations.	Standard mid-term recommendations. Evaluate a shared bus bypass lane/right-turn lane for buses heading westbound on Alameda Avenue to reach a queue jump at the Alameda and Sheridan Boulevard signal.	Implement a mobility hub due to high transit ridership and transfers between the future Alameda Avenue BRT and the Route 51 buses near this intersection.

Project ID and Location	Project Type: Focus	Short-Term Recommendations	Mid-Term Recommendations	Long-Term Recommendations
14: Segment-wide	**Transit**: Safety concern, bicycle mobility, pedestrian mobility	Consider bus stop consolidation and rebalancing. Average stop spacing in Segment 1 is currently just under ¼ mile. Further analysis of boardings and alightings by stop can support where stop consolidation should be considered.	Evaluate transit signal priority at all signalized intersections.	Consider increased transit frequency.
15: Segment-wide	**Corridor speed and safety**: Safety concern, bicycle mobility, pedestrian mobility	Adjust signal timing to discourage speeding.	Narrow general purpose travel lane widths where feasible. Consider access control in areas with significant driveways connecting to Alameda Avenue.	No long-term recommendations.
16: Segment Wide	**Sidewalk/public realm**: Safety concern, bicycle mobility, pedestrian mobility	No short-term recommendations.	Consider wayfinding signage to destinations in Segment 1, including Belmar Shopping District, Belmar Park, Coca Cola All-Star Park, O'Kane Park, Ray Ross Park and other local destinations.	No long-term recommendations.

Segment 2: Sheridan Boulevard to Cherokee Street

Segment 2 overview

Existing condition and context

Corridor Segment 2 is within the City and County of Denver and spans from Sheridan Boulevard to Cherokee Street. The Morrison Road corridor, Far East Center and Alameda Station area are key destinations along this segment, with various residential, commercial and industrial land uses adjacent to the roadway. Numerous schools, churches and parks are in close proximity to this stretch of Alameda Avenue. Two regional trails, Weir Gulch and Platte River, cross it. Segment 2 has the largest concentration of marginalized people in the study area, per DRCOG's Equity Index.

Relevant plan and project overview

The project team identified five planning documents that are relevant specifically to Segment 2 of Alameda Avenue:

- Baker Neighborhood Transportation Management Program Action Plan, 2018.
- Denver Moves: Everyone – 2050 Strategic Transportation Plan, 2023.
- Denver Moves: Transit, 2019.
- Denver West Area Plan, 2023.
- Westwood Athmar Park Neighborhood Transportation Management Program Action Plan, 2024.

Key previous recommendations for infrastructure improvements along this section of Alameda Avenue include substantial landscaping and placemaking enhancements (especially street trees), grade-separation for the Weir Gulch Trail and reconfiguration of the Morrison Road/Federal Boulevard intersection to improve safety.

Safety assessment

The safety assessment for this project, conducted as part of the Existing Conditions Report, reviewed the crash history for all segments of the Alameda Avenue corridor. The data below summarizes the crash data analyzed for Segment 2 during the period of Jan. 1, 2017, to Dec. 31, 2021.

Crash history

The project team evaluated the corridor crash history for the period of Jan. 1, 2017, to Dec. 31, 2021, to understand the magnitude and nature of existing safety problems within Segment 2 of the Alameda Avenue corridor. During the study period, the study area recorded 230 crashes resulting in injuries and 3 crashes resulting in fatalities. All of Segment 2 is part of DRCOG's regional High Injury Network.

Crash types resulting in injuries and fatalities

The project team evaluated crash types in Segment 2 to understand which movements and collision types most commonly result in injuries or fatal crashes. The most common severe crash types between Sheridan Boulevard and Federal Boulevard were:

- Rear End: 62 crashes.
- Broadside: 58 crashes.
- Approach Turn: 43 crashes.
- Bicycle or Pedestrian: 33 crashes.
- Sideswipe: 11 crashes.

Severe crashes by location type

The project team evaluated crash locations to understand which types of facilities within Segment 2 are more susceptible to crashes that involve injuries or fatalities.

- Intersection/Related: 172 injury-related crashes and 2 fatal crashes.
- Non-Intersection: 52 injury-related crashes and 1 fatal crash.
- Driveway: 6 injury-related crashes and 0 fatal crashes.

Fatal crashes

The project team also reviewed crashes by location type to identify where fatal crashes occur. There were three fatal crashes in Segment 2 between 2017 and 2021, all of which involved pedestrians:

- Intersection/Related: Raleigh Street and Pecos Street.
- Non-Intersection: Yuma Street.

Crash density

The following intersections in Segment 2 had the highest concentrations of severe (fatal and injury) crashes between 2017 and 2021:

- Federal Boulevard: 17 severe crashes.
- I-25/Santa Fe Drive: 35 severe crashes.

Community feedback themes

Focus group feedback

The focus group discussion in Segment 2 focused on safety, mobility and vibrancy along the corridor between Sheridan Boulevard and I-25 in Denver. **Attachment A: Phase 1 Engagement Summary** includes comments received during each focus group meeting. Specific themes from the conversation included:

- Frustration about the lack of accessible sidewalks and poor maintenance, noting the inequity seen in infrastructure when Segment 2 is compared to others.
- Safety concerns for pedestrians crossing Alameda Avenue.

Phase 1 Social Pinpoint map feedback

Key themes from the commenting map feedback in Segment 2 included:

- Major need for enhanced streetscaping and placemaking, especially street trees.
- Desire to reduce the number of travel lanes and lane widths.
- Concerns about the poor condition of the existing roadway and sidewalks.

Following engagement, it was noted that CDOT's resurfacing project scheduled to go to construction in 2027 will address pavement conditions and will look for opportunities to address sidewalk gaps.

Phase 2 recommendations feedback

Respondents were most excited about improvements to the intersection of Alameda Avenue and Federal Boulevard, followed by the Santa Fe Drive and South Platte River Drive intersections. Sidewalk improvements were the highest-priority improvement category, followed by speed control and safety improvements.

Themes of the Phase 2 open-ended comments for Segment 2 included the need for pavement repairs, a strong desire for corridor beautification, street trees, support for dedicated transit lanes throughout and concerns about the bike/ped experience through the rail underpass.

Segment 2 recommendations

Figure 18 and **Table 3** outline the location-specific recommendations within Segment 2. Within this segment, the recommendations are largely focused on increasing pedestrian safety and accessibility, as well as placemaking along Alameda Avenue, as this segment has high equity concerns, poor sidewalk conditions, and a lack of pedestrian amenities. Key recommendations including segment-wide sidewalk widening and detachment, elimination of the third westbound lane east of Decatur Street, and integration of street trees and green infrastructure throughout.

For major and minor signalized intersections, **standard short-term recommendations** include installation of high-visibility crosswalk markings and evaluation of signal phasing and timing alternatives such as leading pedestrian intervals, protected left-turn phases, lagging left-turn phases and/or longer pedestrian walk phases. **Standard mid-term recommendations** include assessing the feasibility of adding and/or improving pedestrian median islands with features such as median tips and curbs, evaluating slip lane removal where applicable (and considering raised slip lane crossings where removal is not feasible), replacing diagonal curb ramps with directional curb ramps and minimizing curb radii.

Segment 2 Recommendations

Figure 18. Segment 2 map

Table 3: Segment 2 recommendations table

Project ID and Location	Project Type: Focus	Short-Term Recommendations	Mid-Term Recommendations	Long-Term Recommendations
1: Alameda Avenue and Sheridan Boulevard	**Major intersection**: Safety concern, bicycle mobility, pedestrian mobility, transit mobility	Standard short-term recommendations (see description before Figure 16).	Standard mid-term recommendations (see description before Figure 16). Evaluate a shared bus bypass lane/right-turn lane for buses heading westbound on Alameda to reach a queue jump at the Alameda and Sheridan Boulevard signal.	Implement a mobility hub due to high transit ridership and transfers between the future Alameda Avenue BRT and the Route 51 buses near this intersection.
2: Alameda Avenue and Weir Gulch Trail	**Mid-block or unsignalized intersection crossing**: Equity, bicycle mobility, pedestrian mobility	No short-term recommendations.	Implement a pedestrian hybrid beacon signal and refuge within the existing median, aligned with the south Weir Gulch Trail approach, for safe pedestrian crossing of trail users and to local destinations such as a park, a church and residences (currently 690 ft from the closest signalized crossing). Realign the north approach of the Weir Gulch Trail through Ruth Lucille Dreiling Park to align with the south approach.	Construct a grade-separated trail crossing to fully eliminate motorist/trail user conflicts.

Project ID and Location	Project Type: Focus	Short-Term Recommendations	Mid-Term Recommendations	Long-Term Recommendations
3: Alameda Avenue and Stuart Street	**Minor intersection**: Equity, bicycle mobility, pedestrian mobility	Standard short-term recommendations.	Standard mid-term recommendations. Shift both eastbound and westbound bus stops to be located closer to the intersections.	No long-term recommendations.
4: Alameda Avenue and Raleigh Street	**Mid-block or unsignalized intersection crossing**: Equity, safety concern, bicycle mobility, pedestrian mobility	Standard short-term recommendations.	Standard short-term recommendations. Evaluate the feasibility of eliminating all left-turn movements between Alameda Avenue and Raleigh Street by extending raised median through the intersection to reduce modal conflicts.	No long-term recommendations.
5: Alameda Avenue and Osceola Street	**Mid-block or unsignalized intersection crossing**: Equity, bicycle mobility, pedestrian mobility	Add high-visibility crosswalks and rectangular rapid flashing beacon (RRFB) aligned with existing Z-crossing.	Replace diagonal curb ramps with directional curb ramps and minimize curb radii. Replace the existing Z-crossing with one that orients crossing pedestrians in the direction of oncoming traffic. Relocate nearby bus stops at Perry Street and Meade Street to be closer to their respective intersections.	No long-term recommendations.

Project ID and Location	Project Type: Focus	Short-Term Recommendations	Mid-Term Recommendations	Long-Term Recommendations
6: Alameda Avenue and Morrison Road/Knox Court	**Major intersection**: Equity, bicycle mobility, pedestrian mobility	Standard short-term recommendations. Consolidate eastbound Route 4 stops on the south leg of the intersection.	Standard mid-term recommendations. Eliminate westbound bus pullout on the north side of the intersection. Evaluate the feasibility of closing the south leg of Knox Court; consider raised crossing if that leg is operationally necessary.	Narrow crossing distance by evaluating the removal of one dedicated left-turn lane and repurpose the space to create a pedestrian median island (east leg of Alameda). Narrow crossing distance by evaluating the removal of dedicated right-turn lane and repurpose the space to reduce the pedestrian crossing distance (south leg of Alameda).

Project ID and Location	Project Type: Focus	Short-Term Recommendations	Mid-Term Recommendations	Long-Term Recommendations
7: Alameda Avenue and Federal Boulevard	**Major intersection**: Equity, safety concern, bicycle mobility, pedestrian mobility, transit mobility	Standard short-term recommendations.	Standard mid-term recommendations. Explore converting the outside lanes through the intersection to bus bypass lanes.	Narrow crossing distance by evaluating the removal of one dedicated left-turn lane and repurpose the space to create a pedestrian median island (all intersection approaches). Implement a mobility hub due to high transit ridership and transfers between future Federal Boulevard BRT and Alameda Avenue BRT (this mobility hub is being planned as part of the current Federal Boulevard BRT project).

Project ID and Location	Project Type: Focus	Short-Term Recommendations	Mid-Term Recommendations	Long-Term Recommendations
8: Alameda Avenue and Clay Street	**Bike network**: Equity, bicycle mobility	No short-term recommendations.	Add a bike facility along Clay Street between the previously planned Virginia Avenue and Cedar Avenue bikeways. Design considerations should include evaluating: • Signal phasing alternatives at the Alameda intersection to reduce vehicle and bicyclist conflicts. • Removal of parking on the Clay Street approaches to Alameda Avenue to allow a more comfortable bikeway through the intersection. • Bike boxes to reduce bike/vehicle conflicts at the intersection and add conflict markings through the intersection.	No long-term recommendations.
9: Alameda Avenue and Tejon Street	**Minor intersection**: Equity, bicycle mobility, pedestrian mobility	Standard short-term recommendations	Standard short-term recommendations. Relocate westbound bus stop closer to the intersection and construct ADA-accessible bus pad. Install protected intersection treatments to align with planned Tejon Street protected bike lanes and reduce bike/vehicle conflicts.	No long-term recommendations.

Project ID and Location	Project Type: Focus	Short-Term Recommendations	Mid-Term Recommendations	Long-Term Recommendations
10: Alameda Avenue Railroad Crossing	**Mid-block or unsignalized intersection crossing**: Equity, bicycle mobility, pedestrian mobility	Incorporate railroad crossing safety features such as gate arms.	Construct sidewalks across the railroad tracks on both the north and south sides of Alameda to provide accessible pedestrian paths.	No long-term recommendations.
11: Alameda Avenue and Lipan Street	**Minor intersection**: Equity, bicycle mobility	Complete implementation of I-25 and Alameda Bridge Replacement project.	Evaluate bike box on the south leg to align with planned Lipan Street bike lanes and reduce bike/vehicle conflicts at the intersection. Add conflict markings through the intersection.	No long-term recommendations.
12: Alameda Avenue and S Platte River Drive	**Minor intersection**: Equity, bicycle mobility, pedestrian mobility	Standard short-term recommendations.	Standard mid-term recommendations.	No long-term recommendations.
13: Alameda Avenue and Kalamath Street	**Major intersection**: Equity, safety concern, bicycle mobility, pedestrian mobility	Standard short-term recommendations.	Standard mid-term recommendations.	Narrow crossing distance by evaluating the removal of one dedicated left-turn lane and repurpose the space to create a pedestrian median island (east and west intersection approaches).

Project ID and Location	Project Type: Focus	Short-Term Recommendations	Mid-Term Recommendations	Long-Term Recommendations
14: Alameda Avenue and Santa Fe Drive	**Major intersection**: Equity, safety concern, bicycle mobility, pedestrian mobility	Standard short-term recommendations.	Standard mid-term recommendations.	No long-term recommendations.
15: Sheridan Boulevard to S Platte River Drive	**Sidewalk**: Equity, safety concern, bicycle mobility, pedestrian mobility	No short-term recommendations.	Design and construct wider separated sidewalks with amenity zones on both sides of Alameda, including landscaping, trees and other green infrastructure, and lighting enhancements.	No long-term recommendations.
16: Decatur Street to Navajo Street	**Corridor speed and safety**: Equity, safety concern, bicycle mobility, pedestrian mobility	No short-term recommendations.	Design and construct sections of raised median within the existing two-way left-turn lane, including median noses for pedestrian refuge at intersections where feasible. Consider ways to integrate trees or other green infrastructure into the median.	No long-term recommendations.

Project ID and Location	Project Type: Focus	Short-Term Recommendations	Mid-Term Recommendations	Long-Term Recommendations
17: Decatur Street to S Platte River Drive	**Corridor speed and safety**: Equity, safety concern, bicycle mobility, pedestrian mobility	No short-term recommendations.	Repurpose the outside (third) westbound lane. Option to consider closing the lane to vehicular traffic with temporary materials such as rubber curb, bollards, etc. to increase the sidewalk buffer while reserving the space for a future dedicated transit lane or converting to a dedicated transit lane.	No long-term recommendations.
18: Alameda Avenue from Irving Street to Federal Boulevard	**Transit**: Equity, safety concern, transit mobility	No short-term recommendations.	Consider lane balancing eastbound and westbound Alameda with a BAT lane westbound from Federal Boulevard to Irving Street.	No long-term recommendations.
19: Segment-wide	**Transit**: Equity, safety concern, transit mobility	Consider bus stop consolidation and rebalancing. Average stop spacing in Segment 2 is currently just under one-quarter mile. Further analysis of boardings and alightings by stop can support where stop consolidation should be considered.	Evaluate transit signal priority at all signalized intersections. Eliminate all bus pullouts and reconfigure as in-lane bus stops.	Increase transit frequency.

Project ID and Location	Project Type: Focus	Short-Term Recommendations	Mid-Term Recommendations	Long-Term Recommendations
20: Segment-wide	**Corridor speed and safety**: Equity, safety concern, bicycle mobility, pedestrian mobility	Consider enforcement measures to discourage speeding. Conduct signal retiming to encourage safe driving speeds.	Narrow general purpose travel lane widths where feasible. Improve pavement quality through repaving and filling of potholes.	No long-term recommendations.
21: Segment-wide	**Sidewalk**: Pedestrian mobility	No short-term recommendations.	Consider wayfinding signage to destinations in Segment 2, including Weir Gulch Trail, Morrison Road Shopping District, Belmar Park, Far East Center, West Bar Val Wood Park, Federal BRT, Alameda Station and other local destinations.	No long-term recommendations.

Segment 3: I-25 to University Boulevard.

Segment 3 overview

Existing condition and context

Corridor Segment 3 is within the City and County of Denver and spans from I-25 to University Boulevard. The Alameda Station area and Broadway corridor are key destinations along Segment 3, with primarily residential land uses adjacent to the roadway. Numerous schools, churches and parks are near this stretch of Alameda Avenue, and several key north-south Denver bikeways cross it.

Relevant plan and project overview

The project team identified two planning documents that are specifically relevant to Segment 3 of Alameda Avenue:

- Denver Moves: Everyone – 2050 Strategic Transportation Plan, 2023.
- Denver Moves: Transit, 2019.

Key previous recommendations for infrastructure improvements along this segment of Alameda Avenue include traffic calming treatments between Broadway and University Boulevard.

Safety assessment

The safety assessment for this project, conducted as part of the Existing Conditions Report, reviewed the crash history for all segments of the Alameda Avenue corridor. The data below summarizes the crash data analyzed for Segment 3 during the period of Jan. 1, 2017, to Dec. 31, 2021.

Crash history

The project team evaluated the corridor crash history for the period of Jan. 1, 2017, to Dec. 31, 2021, to understand the magnitude and nature of existing safety problems within Segment 3 of the Alameda Avenue corridor. During the study period, the study area recorded 73 crashes resulting in injuries and no crashes resulting in fatalities. All of Segment 3 is part of DRCOG's regional High Injury Network.

Crash types resulting in injuries and fatalities

The project team evaluated crash types in Segment 3 to understand which movements and collision types most commonly result in injuries or fatal crashes. The common severe crash types between I-25 and University Boulevard included:

- Rear End: 26 crashes.
- Broadside: 22 crashes.

- Approach Turn: 15 crashes.
- Bicycle or Pedestrian: 7 crashes.

Severe crashes by location type

The project team evaluated crash locations to understand which types of facilities within Segment 3 are more susceptible to crashes that involve injuries or fatalities.

- Intersection/Related: 59 injury-related crashes.
- Non-Intersection: 11 injury-related crashes.
- Driveway: 3 injury-related crashes.

Crash density

The following intersection in Segment 3 had the highest concentrations of severe (fatal and injury) crashes between 2017 and 2021:

- Downing Street: 8 severe crashes.

Community feedback themes

Focus group feedback

The focus group discussion in Segment 3 addressed connectivity, safety and mobility along the corridor between I-25 and University Boulevard in Denver. **Attachment A: Phase 1 Engagement Summary** includes comments received during each focus group meeting. Specific themes from the conversation included:

- Safety concerns for pedestrians crossing Alameda, especially near Steele Elementary.
- Left-turn access onto and off Alameda.
- High speeds on Alameda.
- Contiguous east/west bike corridor in this area.

Phase 1 Social Pinpoint map feedback

Key themes from the commenting map feedback in Segment 3 included:

- Desire for increased transit frequency.
- Safety concerns related to turning conflicts and delays at signalized intersections.

Phase 2 recommendations feedback

Respondents were most excited about improvements to the intersection of Alameda Avenue and Broadway, followed by the Downing Street and Lincoln Street intersections. Speed control and safety improvements were the highest-priority improvement category, followed by bike network improvements.

Themes of the Phase 2 open-ended comments for Segment 3 included support for dedicated transit lanes, desire for greater separation between pedestrian and motor vehicle traffic and both support and concern about repurposing travel lanes.

Segment 3 recommendations

Figure 19 and **Table 4** outline the location-specific recommendations within Segment 3. Within this segment, the recommendations are largely focused on increasing the comfort and safety of walking and biking along Alameda Avenue and calming traffic, as this segment has a lot of pedestrian activity and is more residential/mixed-use in nature than other segments of the corridor. Key recommendations include a shared-use path connecting Broadway with the South Platte Trail permanent lane repurposing between Logan Street and Franklin Street, and traffic calming elements east of Franklin Street.

For major and minor signalized intersections, standard short-term recommendations include installation of high-visibility crosswalk markings and evaluation of signal phasing and timing alternatives such as leading pedestrian intervals, protected left-turn phases, lagging left-turn phases and/or longer pedestrian walk phases. Standard mid-term recommendations include assessing the feasibility of adding and/or improving pedestrian median islands with features such as median tips and curbs, evaluating slip lane removal where applicable (and considering raised slip lane crossings where removal is not feasible), replacing diagonal curb ramps with directional curb ramps and minimizing curb radii.

Segment 3 Recommendations

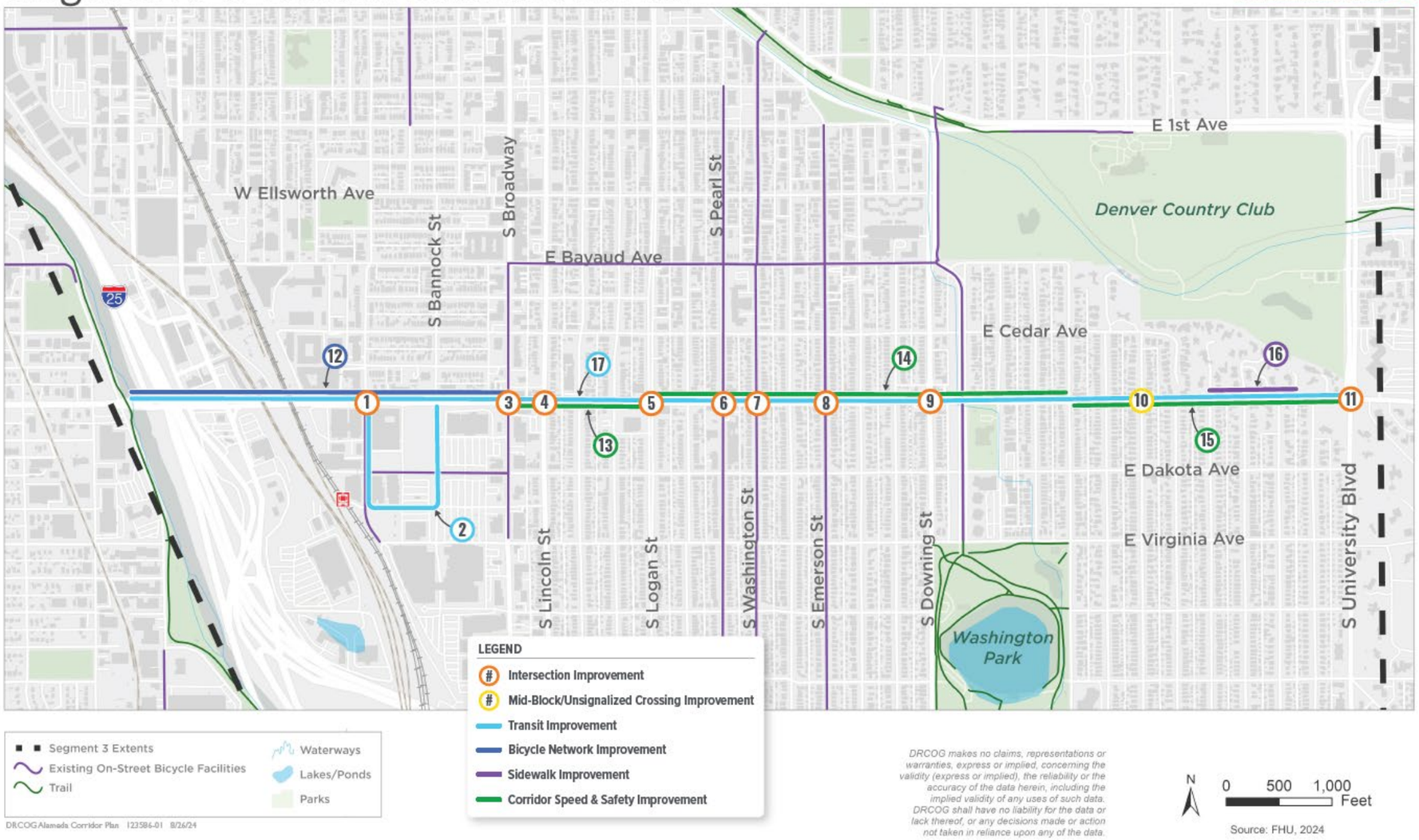


Figure 19. Segment 3 map

Table 4: Segment 3 recommendations table

Project ID and Location	Project Type: Focus	Short-Term Recommendations	Mid-Term Recommendations	Long-Term Recommendations
1: Alameda Avenue and Cherokee Street	**Minor intersection**: Bicycle mobility, pedestrian mobility	Standard short-term recommendations (see description before Figure 17). Evaluate bike box for the south leg to reduce bike/vehicle conflicts at the intersection. Evaluate adding bollards to the southwest corner to prevent vehicles from turning into the southbound bike lane.	Construct a curb bulb on the southeast corner to reduce pedestrian crossing distance.	No long-term recommendations.
2: Alameda Station Routing	**Transit**: Transit mobility	Convert the inside northbound left-turn lane from Bannock Street to Alameda Avenue to transit-only. Adjust Route 3 pattern to turn on Alaska Place rather than on Virginia Avenue.	Implement transit design elements as Alaska Place and/or Virginia Avenue cross-sections are updated in the future.	Implement transit design elements as Alaska Place and/or Virginia Avenue cross-sections are updated in the future.

Project ID and Location	Project Type: Focus	Short-Term Recommendations	Mid-Term Recommendations	Long-Term Recommendations
3: Alameda Avenue and Broadway	**Major intersection**: Bicycle mobility, pedestrian mobility	Standard short-term recommendations.	Standard mid-term recommendations (see description before Figure 17).	Evaluate the feasibility of eliminating one left-turn lane on the east leg to make space for a pedestrian median island. Implement a mobility hub due to high transit ridership and transfers between the future Alameda Avenue BRT and the Route 0 and 0L buses near this intersection.
4: Alameda Avenue and Lincoln Street	**Major intersection**: Bicycle mobility, pedestrian mobility	Standard short-term recommendations.	Standard mid-term recommendations.	Evaluate the feasibility of eliminating one left-turn lane on the west leg to make space for a pedestrian median island.
5: Alameda Avenue and Logan Street	**Major intersection**: Bicycle mobility, pedestrian mobility	Standard short-term recommendations.	Standard mid-term recommendations. Construct curb bulb outs on the northeast and southwest corners to reduce pedestrian crossing distance.	No long-term recommendations.

Project ID and Location	Project Type: Focus	Short-Term Recommendations	Mid-Term Recommendations	Long-Term Recommendations
6: Alameda Avenue and Pearl Street	**Minor intersection**: Bicycle mobility	Enhance the Pearl Street neighborhood bikeway crossing of Alameda. Design considerations should include evaluating a bike box on the north leg to reduce bike/vehicle conflicts and adding conflict markings through the intersection.	No mid-term recommendations.	No long-term recommendations.
7: Alameda Avenue and Washington Street	**Minor intersection**: Bicycle mobility	Extend the existing Washington Street bike lane through the intersection. Design considerations should include evaluating a bike box to reduce bike/vehicle conflicts and adding conflict markings through the intersection	Standard mid-term recommendations.	No long-term recommendations.
8: Alameda Avenue and Emerson Street	**Minor intersection**: Bicycle mobility	Extend the existing Emerson Street bike lane through the intersection. Design considerations should include evaluating a bike box to reduce bike/vehicle conflicts and adding conflict markings through the intersection.	Standard mid-term recommendations.	No long-term recommendations.

Project ID and Location	Project Type: Focus	Short-Term Recommendations	Mid-Term Recommendations	Long-Term Recommendations
9: Alameda Avenue and Downing Street	**Minor intersection**: Bicycle mobility, pedestrian mobility	Standard short-term recommendations.	Modify northwest curb radii to allow future bus turning movements between the north and west legs. Minimize other curb radii and improve curb ramps.	No long-term recommendations.
10: Alameda Avenue and Williams Street	**Mid-block or unsignalized intersection crossing**: Bicycle mobility, pedestrian mobility	No short-term recommendations.	Evaluate the feasibility of a pedestrian hybrid beacon signal and hardened median island (west leg) for a safe pedestrian crossing to bus stops and between neighborhood blocks and scattered commercial properties (currently 1,650 feet from the closest signalized crossing).	No long-term recommendations.
11: Alameda Avenue and University Boulevard	**Major intersection**: Bicycle mobility, pedestrian mobility	Standard short-term recommendations.	Standard mid-term recommendations.	No long-term recommendations.

Project ID and Location	Project Type: Focus	Short-Term Recommendations	Mid-Term Recommendations	Long-Term Recommendations
12: Santa Fe Drive to Broadway	**Bike network**: Bicycle mobility, pedestrian mobility	No short-term recommendations.	Design and construct a shared-use path on the north side of Alameda between Cherokee and Broadway.	Widen the shared-use path on the north side of Alameda when the railroad bridges are replaced.
13: Broadway to Logan Street	**Corridor speed and safety**: Bicycle mobility, pedestrian mobility	No short-term recommendations.	No mid-term recommendations.	Design and construct sections of raised median within the existing two-way left-turn lane, including median noses for a pedestrian refuge at intersections where feasible.
14: Logan Street to Franklin Street	**Corridor speed and safety**: Bicycle mobility, pedestrian mobility	Implement Alameda Lane Reduction Study recommendations for road diet with one travel lane in each direction.	Upgrade Alameda Lane Reduction Study improvements with permanent materials.	No long-term recommendations.
15: Franklin Street to University Boulevard	**Corridor speed and safety**: Bicycle mobility, pedestrian mobility	Narrow Alameda travel lanes with striping and bollards to reduce travel speeds.	Evaluate the feasibility of installing transit-friendly traffic calming features to reduce travel speeds.	Permanently narrow travel lanes by shifting curb lines.

Project ID and Location	Project Type: Focus	Short-Term Recommendations	Mid-Term Recommendations	Long-Term Recommendations
16: Race Street to Gaylord Street	**Sidewalk**: Pedestrian mobility	No short-term recommendations.	Construct detached sidewalk on the north side of Alameda to eliminate the existing gap.	No long-term recommendations.
17: Segment-wide	**Transit**: Transit mobility	Consider bus stop consolidation and rebalancing. Average stop spacing in Segment 3 is currently approximately one-fifth mile. Further analysis of boardings and alightings by stop can support where a stop consolidation should be considered.	Evaluate transit signal priority at all signalized intersections.	Consider increased transit frequency.
18: Segment-wide	**Sidewalk**: Pedestrian mobility	No short-term recommendations.	Consider wayfinding signage to destinations in Segment 3, including South Broadway, Washington Park, Denver Country Club and other local destinations.	No long-term recommendations.

Segment 4: University Boulevard to Quebec Street

Segment 4 overview

Existing condition and context

Corridor Segment 4 is within the City and County of Denver and spans University Boulevard to Quebec Street. The westernmost portion of Segment 4 follows the current alignment of RTD Route 3 along University Boulevard north from the intersection of Alameda Avenue, then continuing east along 1st Avenue and Steele Street before becoming Alameda Avenue again at the intersection of Cherry Creek North Drive. The Cherry Creek District is a major destination on the west side of Segment 4 and includes the densest combination of land uses in the entire corridor, including shopping magnet Cherry Creek Mall, retail and office development in Cherry Creek North and dense multifamily housing. Moving east along the corridor, the character becomes more suburban with single-family homes directly abutting Alameda Avenue for the rest of the segment east of Leetsdale Drive. Most of Alameda Avenue in this segment is a designated Denver Parkway (from Steele Street to Quebec Street).

Relevant plan and project overview

The project team identified three planning documents that are specifically relevant to Segment 4 of Alameda Avenue:

- Denver Moves: Everyone – 2050 Strategic Transportation Plan, 2023.
- Denver Moves: Transit, 2019.
- Denver Moves: Cherry Creek, 2024.

High-impact projects recommended by Denver Moves: Cherry Creek affect the Alameda Avenue corridor, specifically:

- Intersection improvements at the following locations:
  - 1st Avenue and University Boulevard.
  - Steele Street and 1st Avenue.
  - Steele Street and Ellsworth Avenue.
  - Steele Street and Bayaud Avenue.
  - Alameda Avenue and Cherry Creek North Drive/Madison Street.
- Phased multimodal improvements on 1st Avenue and Steele Street between University Boulevard and Bayaud Avenue, including dedicated bus lanes in the long term.
- Bus service frequency improvements in the peak and off-peak periods.

Beyond the recommendations confirmed in Denver Moves: Cherry Creek, other recommendations in this part of the corridor include implementing two bus rapid transit

routes that use the portion between University Boulevard and Leetsdale Drive (Alameda Bus Rapid Transit and Speer/Leetsdale Bus Rapid Transit) and implementing short-term improvements to bikeways that cross Alameda Avenue, especially at Kearney Street.

Safety assessment

The safety assessment for this project, conducted as part of the Existing Conditions Report, reviewed the crash history for all segments of the Alameda Avenue corridor. The data below summarizes the crash data analyzed for Segment 4 during the period of Jan. 1, 2017, to Dec. 31, 2021.

Crash history

The project team evaluated the corridor crash history for the period of Jan. 1, 2017, to Dec. 31, 2021, to understand the magnitude and nature of existing safety problems within Segment 4 of the Alameda Avenue corridor. During the study period, the study area recorded 163 crashes resulting in injuries and no crashes resulting in fatalities. All of Segment 4 is part of DRCOG's regional High Injury Network.

Crash types resulting in injuries and fatalities

The project team evaluated crash types in Segment 4 to understand which movements and collision types most commonly result in injuries or fatal crashes. The common severe crash types between University Boulevard and Quebec Street included:

- Rear End: 58 crashes.
- Broadside: 33 crashes.
- Approach Turn: 28 crashes.
- Bicycle or Pedestrian: 11 crashes.

Severe crashes by location type

The project team evaluated crash locations to understand which types of facilities within Segment 4 are more susceptible to crashes that involve injuries or fatalities:

- Intersection/Related: 111 injury-related crashes.
- Non-Intersection: 48 injury-related crashes.
- Driveway: 4 injury-related crashes.

Crash density

The following intersections in Segment 4 had the highest concentrations of severe (fatal and injury) crashes between 2017 and 2021:

- University Boulevard and 1st Avenue: 12 severe crashes.
- Quebec Street: 14 severe crashes.

Community feedback themes

Focus Group Feedback

The focus group discussion in Segment 4 centered on connectivity, improved transit and vibrancy along the corridor between University Boulevard and Quebec Street in Denver. **Attachment A: Phase 1 Engagement Summary** includes comments received during each focus group meeting. Specific themes from the conversation included:

- Consideration of a bridge for Alameda Avenue over Cherry Creek.
- Desire for improved transit but concerns about general traffic impacts.

Phase 1 Social Pinpoint map feedback

Key themes from the commenting map feedback in Segment 4 included:

- Desire for better transit service to/from the Cherry Creek area.
- Safety concerns about speeding in an area with a lot of pedestrian activity.

Phase 2 recommendations feedback

Respondents were most excited about improvements to the intersection of Alameda Avenue and Colorado Boulevard, followed by the Leetsdale Drive intersection. Bike network improvements were the highest-priority improvement category, followed by speed control and safety improvements.
Themes of the Phase 2 open-ended comments for Segment 4 included support for improving signal timing at key intersections, support for making bikes a priority and both support and concern about repurposing travel lanes.

Segment 4 recommendations

Figure 20 and **Table 5** outline the location-specific recommendations within Segment 4. Within this segment, the recommendations are largely focused on increasing the comfort and safety of walking and biking across Alameda Avenue and enhancing transit reliability, as this segment has a wide cross-section with underutilized right-of-way. Key recommendations include several additional designated bike/ped crossing points and implementation of transit lanes between Monaco Street and Quebec Street through lane repurposing.

For major and minor signalized intersections, standard short-term recommendations include installation of high-visibility crosswalk markings and evaluation of signal phasing and timing alternatives such as leading pedestrian intervals, protected left-turn phases, lagging left-turn phases and/or longer pedestrian walk phases. Standard mid-term recommendations include assessing the feasibility of adding and/or improving pedestrian median islands with features such as median tips and curbs, evaluating slip

lane removal where applicable (and considering raised slip lane crossings where removal is not feasible), replacing diagonal curb ramps with directional curb ramps and minimizing curb radii.

Segment 4 Recommendations

Figure 20. Segment 4 map

Table 5: Segment 4 recommendations table

Project ID and Location	Project Type: Focus	Short-Term Recommendations	Mid-Term Recommendations	Long-Term Recommendations
1: E 1st Avenue and University Boulevard to Alameda Avenue and Cherry Creek North Drive	Denver Moves: Cherry Creek Recommendations	Implement short-term multimodal improvements as identified in Denver Moves: Cherry Creek.	Implement mid-term multimodal improvements as identified in Denver Moves: Cherry Creek.	Implement long-term multimodal improvements as identified in Denver Moves: Cherry Creek.
2: Alameda Avenue and Cherry Creek North Drive	**Minor intersection**: Bicycle mobility, pedestrian mobility	No short-term recommendations.	No mid-term recommendations.	Explore the potential for connecting Alameda Avenue across Cherry Creek as a bicycle/ pedestrian crossing or a bike/ped/transit-only crossing.

Project ID and Location	Project Type: Focus	Short-Term Recommendations	Mid-Term Recommendations	Long-Term Recommendations
3: Alameda Avenue and Colorado Boulevard	**Major intersection**: Bicycle mobility, pedestrian mobility, transit mobility	Standard short-term recommendations (see description before Figure 18). Implement shared right-turn lanes and bus bypass lanes in both directions on Alameda Avenue. Consolidate existing westbound bus stops to the far side.	Standard mid-term recommendations (see description before Figure 18).	Narrow the crossing distance by evaluating the removal of one dedicated left-turn lane on Colorado Boulevard in both directions and/or westbound Alameda Avenue and repurpose the space to create a pedestrian median island. Implement a mobility hub due to high transit ridership and transfers among the future Alameda Avenue, Speer/Leetsdale and Colorado Boulevard bus rapid transit buses near this intersection.
4: Alameda Avenue and Leetsdale Drive	**Major intersection**: Bicycle mobility, pedestrian mobility	Standard short-term recommendations. Convert westbound curb lane to BAT lane.	Standard mid-term recommendations.	Explore the potential closure of Leetsdale Drive north of Alameda Avenue to through-vehicular traffic and repurpose the space for transit and/or bicycles and pedestrians.

Project ID and Location	Project Type: Focus	Short-Term Recommendations	Mid-Term Recommendations	Long-Term Recommendations
5: Alameda Avenue and Clermont Street	**Mid-block or unsignalized intersection crossing**: Bicycle mobility, pedestrian mobility	No short-term recommendations.	Explore safer crossings of both Alameda Avenue and Leetsdale Drive to connect the future Clermont Street and Birch Street neighborhood bikeways.	No long-term recommendations.
6: Alameda Avenue from Leetsdale Drive to Dahlia Street	**Transit**: Transit mobility	Prohibit on-street parking between Leetsdale and Dahlia and convert space to eastbound BAT lane.	No mid-term recommendations.	No long-term recommendations.
7: Alameda Avenue and Dahlia Street	**Minor intersection**: Bicycle mobility, pedestrian mobility	No short-term recommendations.	Standard mid-term recommendations.	No long-term recommendations.
8: Alameda Avenue and Forest Street	**Mid-block or unsignalized intersection crossing**: Bicycle mobility	Install a full traffic signal with associated crosswalk improvements (this recommendation is already funded through the Denver GO Bond).	Evaluate the closure of the median to allow a more comfortable future bikeway through the intersection. Evaluate bike boxes or protected intersections to reduce bike/vehicle conflicts at the intersection and add conflict markings through the intersection.	No long-term recommendations.

Project ID and Location	Project Type: Focus	Short-Term Recommendations	Mid-Term Recommendations	Long-Term Recommendations
9: Alameda Avenue and Holly Street	**Minor intersection**: Bicycle mobility	Standard short-term recommendations.	Standard mid-term recommendations. Reconfigure median curbs to accommodate bus bypass lanes and remove bus pullouts.	No long-term recommendations.
10: Alameda Avenue and Kearney Street	**Mid-block or unsignalized intersection crossing**: Bicycle mobility, pedestrian mobility	Install RRFB and associated crosswalk improvements.	Evaluate the closure of the median to allow a more comfortable future bikeway through the intersection. Evaluate the feasibility of a pedestrian hybrid beacon signal and bike boxes to reduce bike/vehicle conflicts at the intersection and add conflict markings through the intersection.	No long-term recommendations.
11: Alameda Avenue and Monaco Parkway	**Major intersection**: Bicycle mobility	Standard short-term recommendations.	Standard mid-term recommendations. Convert the eastbound curbside general purpose lane to bus bypass lane. Convert the westbound outer through lane to a transit approach lane and remove the bus pullout at the far-side stop.	Narrow crossing distance by evaluating the removal of one dedicated left-turn lane on southbound Monaco Parkway and repurpose the space to create a pedestrian median island.

Project ID and Location	Project Type: Focus	Short-Term Recommendations	Mid-Term Recommendations	Long-Term Recommendations
12: Alameda Avenue and Quebec Street	**Major intersection**: Bicycle mobility, pedestrian mobility	Standard short-term recommendations	Standard mid-term recommendations. Convert eastbound and westbound outside through lanes to transit approach lanes. Remove the bus pullout at the westbound far-side stop.	Implement a mobility hub due to high transit ridership and transfers between the future Alameda Avenue bus rapid transit Route 73 buses near this intersection.
13: Alameda Avenue from Monaco to Quebec	**Transit**: Transit mobility	No short-term recommendations.	Convert the curbside general purpose lane between Monaco and Quebec to BAT lanes in both directions.	No long-term recommendations.
14: Segment-wide	**Transit**: Transit mobility	Consider bus stop consolidation and rebalancing. Average stop spacing in Segment 4 is currently just under one-quarter mile. Further analysis of boardings and alightings by stop can support where stop consolidation should be considered.	Evaluate transit signal priority at all signalized intersections. Remove bus pullouts.	Consider increased transit frequency.
15: Segment-wide	**Corridor speed and safety**: Bicycle mobility, pedestrian mobility	Consider enforcement measures to discourage speeding.	Narrow general purpose travel lane widths where feasible.	No long-term recommendations.

Project ID and Location	Project Type: Focus	Short-Term Recommendations	Mid-Term Recommendations	Long-Term Recommendations
16: Segment-wide	**Sidewalk**: Pedestrian mobility	No short-term recommendations.	Consider wayfinding signage to destinations in Segment 4, including Cherry Creek Mall, Cherry Creek Regional Trail, George Washington High School, Cranmer Park, Crestmoor Park and Lowry District.	No long-term recommendations.

Segment 5: Quebec Street to Havana Street

Segment 5 overview

Existing condition and context

Corridor Segment 5 is within the City and County of Denver and spans Quebec Street to Havana Street. Land uses in this part of the corridor are split between several prominent open spaces (Fairmount Cemetery to the west, Lowry Dam and CommonGround Golf Course to the east) and higher density multifamily residential. The Windsor Gardens 55+ community is situated just to the south in this segment between Xenia Street and Dayton Street. Some limited retail and the Kaiser Permanente East medical facility anchor the eastern end of Segment 5.

Relevant plan and project overview

The project team identified two planning documents that are relevant to Segment 5 of Alameda Avenue:

- Denver Moves Everyone – 2050 Strategic Transportation Plan, 2023.
- Denver Moves: Transit, 2019.

Beyond implementing bus rapid transit on Alameda Avenue, neither plan makes specific short-term recommendations for this segment of Alameda Avenue, although the portion of the corridor between Quebec Street and Fairmount Avenue is on Denver's High Injury Network and will be a focus for safety improvements in the near term.

Safety assessment

The safety assessment for this project, conducted as part of the Existing Conditions Report, reviewed the crash history for all segments of the Alameda Avenue corridor. The data below summarizes the crash data analyzed for Segment 5 during the period of Jan. 1, 2017, to Dec. 31, 2021.

Crash history

The project team evaluated the corridor crash history for the period of Jan. 1, 2017, to Dec. 31, 2021, to understand the magnitude and nature of existing safety problems within Segment 5 of the Alameda Avenue corridor. During the study period, the study area recorded 64 crashes resulting in injuries and no crashes resulting in fatalities. All of Segment 5 is part of DRCOG's regional High Injury Network.

Crash types resulting in injuries and fatalities

The project team evaluated crash types in Segment 5 to understand which movements and collision types most commonly result in injuries or fatal crashes. The common severe crash types between Quebec Street and Havana Street included:

- Rear End: 26 crashes.
- Broadside: 14 crashes.
- Sideswipe: 7 crashes.
- Approach Turn: 6 crashes.
- Bicycle or Pedestrian: 1 crash.

Severe crashes by location type

The project team evaluated crash locations to understand which types of facilities within Segment 5 are more susceptible to crashes that involve injuries or fatalities:

- Intersection/Related: 40 injury-related crashes.
- Non-Intersection: 23 injury-related crashes.
- Driveway: 1 injury-related crash.

Crash density

The following intersection in Segment 5 had the highest concentrations of severe (fatal and injury) crashes between 2017 and 2021:

- Fairmount Boulevard: 13 severe crashes.

Community feedback themes

Focus group feedback

While a specific focus group was not held within Segment 5 due to low registration, discussion of this area occurred during other focus group meetings and through one-on-one phone calls and emails with several residents. Feedback generally focused on connectivity, safety and mobility along the corridor between Quebec Street and Havana Street in Denver. Specific themes included:

- Safety concerns about excessive speeding and a high-crash intersection at Dayton Street.
- Inadequate transit with Route 3 operating only once an hour.
- High pedestrian volumes near Fairmount Cemetery.
- Poor quality pedestrian environment, including dangerously placed bus stops lacking basic amenities.

Phase 1 Social Pinpoint map feedback

Key themes from the commenting map feedback in Segment 5 included:

- Desire for more frequent, convenient and comfortable transit service.
- Concerns about speeding due to the lack of stop control.

Phase 2 recommendations feedback

Respondents were most excited about improvements to the intersection of Alameda Avenue and Quebec Street, followed by the Dayton Street and Havana Street intersections. Speed control and safety improvements were the highest-priority improvement categories, followed by bike network improvements.

Themes of the Phase 2 open-ended comments for Segment 5 included a desire to make this portion of the corridor more friendly to bicycles, a desire for increased frequency of bus service to make bus rapid transit more functional, and a need to reduce frequent speeding.

Segment 5 recommendations

Figure 21 and **Table 6** outline the location-specific recommendations within Segment 5. Within this segment, the recommendations are largely focused on increasing the comfort and safety of walking and biking along Alameda Avenue and managing speeds, as this segment has minimal stop control. Key recommendations include an additional designated bike/ped crossing, a shared-use path connecting between Xenia Street and Havana Street, and lane narrowing throughout.

For major and minor signalized intersections, standard short-term recommendations include installation of high-visibility crosswalk markings and evaluation of signal phasing and timing alternatives such as leading pedestrian intervals, protected left-turn phases, lagging left-turn phases and/or longer pedestrian walk phases. Standard mid-term recommendations include assessing the feasibility of adding and/or improving pedestrian median islands with features such as median tips and curbs, evaluating slip lane removal where applicable (and considering raised slip lane crossings where removal is not feasible), replacing diagonal curb ramps with directional curb ramps and minimizing curb radii.

Segment 5 Recommendations

Figure 21. Segment 5 map

Table 6: Segment 5 recommendations table

Project ID and Location	Project Type	Short-Term Recommendations	Mid-Term Recommendations	Long-Term Recommendations
1: Alameda Avenue and Fairmount Cemetery Road	**Mid-block or unsignalized intersection crossing**: Bicycle mobility, pedestrian mobility	Install RRFB and crosswalk visibility enhancements at existing unmarked bike/ped crossing at Fairmount Cemetery entrance.	Evaluate feasibility of a pedestrian hybrid beacon signal and hardened median islands for safe pedestrian crossing.	No long-term recommendations.
2: Alameda Avenue and Fairmount Drive	**Major intersection**: Bicycle mobility, pedestrian mobility	Standard short-term recommendations (see description before Figure 19).	No mid-term recommendations.	Evaluate removal of one dedicated left-turn lane from southbound Fairmount Drive and repurpose the space to create a pedestrian median island. If dedicated lanes not recommended in this section, consider adding bus bulbs at far-side stops.
3: Alameda Avenue and Xenia Street	**Minor intersection**: Bicycle mobility, pedestrian mobility	Standard short-term recommendations.	Standard mid-term recommendations (see description before Figure 19).	No long-term recommendations.

Project ID and Location	Project Type	Short-Term Recommendations	Mid-Term Recommendations	Long-Term Recommendations
4: Alameda Avenue and Clinton Street	**Minor intersection**: Bicycle mobility, pedestrian mobility	Standard short-term recommendations.	Standard mid-term recommendations. Remove westbound bus pullout.	No long-term recommendations.
5: Alameda Avenue and Dayton Street	**Minor intersection**: Bicycle mobility, pedestrian mobility	Standard mid-term recommendations.	Standard mid-term recommendations. Remove westbound bus pullout.	No long-term recommendations.
6: Alameda Avenue and Galena Way	**Minor intersection**: Equity, bicycle mobility, pedestrian mobility	Standard short-term recommendations.	Standard mid-term recommendations. Remove westbound bus pullout.	No long-term recommendations.

Project ID and Location	Project Type	Short-Term Recommendations	Mid-Term Recommendations	Long-Term Recommendations
7: Alameda Avenue and Havana Street	**Major intersection**: Equity, safety concern, bicycle mobility, pedestrian mobility	Standard mid-term recommendations.	Standard mid-term recommendations. Use the existing westbound right-turn drop lane as a bypass lane for transit. Identify key mobility hub needs and implement a mobility hub.	Narrow crossing distance by evaluating the removal of one dedicated left-turn lane and repurpose the space to create a pedestrian median island (all intersection legs). Implement a mobility hub due to high transit ridership and transfers between the future Alameda Avenue BRT and the Route 105 buses near this intersection.
8: Alameda Avenue from Xenia Street to Havana Street	**Bicycle network**: Equity, bicycle mobility, pedestrian mobility	No short-term recommendations.	Design and construct a shared-use path on the north side of Alameda.	No long-term recommendations.

Project ID and Location	Project Type	Short-Term Recommendations	Mid-Term Recommendations	Long-Term Recommendations
9: Segment-wide	**Transit**: Equity, transit mobility	Consider bus stop consolidation and rebalancing. Average stop spacing in Segment 5 is currently just over one-quarter mile. Further analysis of boardings and alightings by stop can support where stop consolidation should be considered.	Evaluate transit signal priority at all signalized intersections.	Consider increased transit frequency.
10: Segment-wide	**Corridor speed and safety**: Equity bicycle mobility, pedestrian mobility	Consider enforcement measures to discourage speeding.	Narrow general purpose travel lane widths where feasible.	No long-term recommendations.
11: Segment-wide	**Sidewalk**: Pedestrian mobility	No short-term recommendations.	Consider wayfinding signage to destinations in Segment 5, including Fairmount Cemetery, Wings Over the Rockies Air and Space Museum, Lowry Sports Complex and Highline Canal Trail.	No long-term recommendations.

Segment 6: Havana Street to Sable Boulevard

Segment 6 overview

Existing condition and context

Corridor Segment 6 is within the city of Aurora and spans Havana Street to Sable Boulevard. The west end of Segment 6 consists of large commercial developments with car dealerships, restaurants, a pharmacy and other commercial destinations with large surface parking lots that prioritize vehicle access. RTD's Alameda and Havana Park-n-Ride and the High Line Canal Trail are also in this same area. Moving east, between Lansing Street and I-225, the character of the corridor becomes more suburban with single-family homes accessed by local streets, along with other destinations like parks, schools and churches. To the east of I-225 are the Town Center at Aurora and Aurora City Place malls, along with other shopping and dining options primarily auto-oriented with large surface parking lots. Aurora Metro Center Station is also located along Sable Boulevard, just south of the Alameda and Sable intersection.

Relevant plan and project overview

The project team identified four planning documents that are relevant to Segment 6 of Alameda Avenue:

- Arapahoe County Transportation Master Plan, 2021.
- Aurora City Center Station Plan, 2021.
- Arapahoe County Bicycle and Pedestrian Master Plan, 2017.
- Aurora Places Comprehensive Plan, 2018.

Additionally, the City of Aurora is currently developing Connecting Aurora, a citywide multimodal transportation master plan that will include further assessment of Alameda Avenue. Key previous recommendations for this segment of Alameda Avenue include future upgrade of the full corridor to a high speed transit corridor (Arapahoe County Transportation Master Plan, Aurora Places Plan); a mobility hub at the Aurora Metro Center Station (Aurora Places Plan); improvements to the existing I-225 overpass for improved pedestrian and bicyclist access (Bicycle and Pedestrian Master Plan); a more complete bike network and improved bikeway crossings (Bicycle and Pedestrian Master Plan); and intersection comfort and safety improvements for the Aurora City Center Station area (Aurora City Center Station Plan).

Safety assessment

The safety assessment for this project, conducted as part of the Existing Conditions Report, reviewed the crash history for all segments of the Alameda Avenue corridor. The data that follows summarizes the crash data analyzed for Segment 6 during the period of Jan. 1, 2017, to Dec. 31, 2021.

Crash history

The project team evaluated the corridor crash history for the period of Jan. 1, 2017, to Dec. 31, 2021, to understand the magnitude and nature of existing crash patterns within Segment 6 of the Alameda corridor. During the study period, the study area recorded 267 crashes resulting in injuries and 2 crashes resulting in fatalities. All of Segment 6 is part of DRCOG's regional High Injury Network.

Crash types resulting in Injuries and fatalities

The project team evaluated crash types in Segment 6 to understand which movements and collision types most commonly result in injuries or fatal crashes. The common severe crash types between Havana Street and Sable Boulevard included:

- Approach Turn: 85 crashes.
- Rear End: 80 crashes.
- Broadside: 48 crashes.
- Sideswipe: 23 crashes.
- Bicycle or Pedestrian: 18 crashes.

Severe crashes by location type

The project team evaluated crash locations to understand which types of facilities within Segment 6 are more susceptible to crashes that involve injuries or fatalities.

- Intersection/Related: 204 injury-related crashes and 1 fatal crash.
- Non-Intersection: 50 injury-related crashes and 1 fatal crash.
- Driveway: 13 injury-related crashes.

Fatal crashes

The project team also reviewed crashes by location type to identify where fatal crashes occur. There were two fatal crashes in Segment 6 between 2017 and 2021:

- Intersection/Related: Peoria Street.
- Non-Intersection: Lima Street.

Crash density

The following intersections in Segment 6 had the highest concentrations of severe (fatal and injury) crashes between 2017 and 2021:

- Sable Boulevard: 28 severe crashes.
- Interstate 225: 25 severe crashes.
- Peoria Street: 19 severe crashes.

Community feedback themes

Focus group feedback

The focus group discussion in Segment 6 addressed connectivity, safety and mobility along the corridor between Havana and Aurora Town Center in Aurora. **Attachment A: Phase 1 Engagement Summary** includes comments received during each focus group meeting. Specific themes from the conversation included:

- Safety concerns about excessive speeding and limited controlled pedestrian crossings.
- Need for better pedestrian and bicycle facilities to be part of the future I-225 bridge design.

Phase 1 Social Pinpoint map feedback

Key themes from the commenting map feedback in Segment 6 included:

- Support for lane reduction and lane narrowing to reduce excessive vehicle speeds.
- Desire for additional signalized intersections along the corridor, enabling safer crossing of Alameda Avenue for all modes.

Phase 2 recommendations feedback

Respondents were most excited about intersection improvements at Alameda Avenue and I-225, followed by the Havana Street and Peoria Street intersections. Speed control and safety improvements were the highest-priority improvement category, followed by transit improvements.

Themes of the Phase 2 open-ended comments for Segment 6 included support for additional safe crossings of Alameda for pedestrians, wider sidewalks throughout the corridor and more bike paths.

Segment 6 recommendations

Figure 22 and **Table 7** outline the location-specific recommendations within Segment 6. Within this segment, the recommendations are largely focused on increasing the comfort and safety of walking and biking across Alameda Avenue, as this segment has a higher speed limit and wider cross-section than segments to the west. Key recommendations including several additional designated bike/ped crossing points, speed limit reduction, improved bicycle network connections, and sidewalk widening and detachment.

For major and minor signalized intersections, standard short-term recommendations include installation of high-visibility crosswalk markings and evaluation of signal phasing and timing alternatives such as leading pedestrian intervals, protected left-turn phases,

lagging left-turn phases and/or longer pedestrian walk phases. Standard mid-term recommendations include assessing the feasibility of adding and/or improving pedestrian median islands with features such as median tips and curbs, evaluating slip lane removal where applicable (and considering raised slip lane crossings where removal is not feasible), replacing diagonal curb ramps with directional curb ramps and minimizing curb radii.

Segment 6 Recommendations

Figure 22. Segment 6 map

Table 7: Segment 6 recommendations table

Project ID and Location	Project Type: Focus	Short-Term Recommendations	Mid-Term Recommendations	Long-Term Recommendations
1: Alameda Avenue and Havana Street	**Major intersection:** Equity, safety concern, bicycle mobility, pedestrian mobility	Standard short-term recommendations (see description before Figure 20).	Standard mid-term recommendations (see description before Figure 20). Evaluate use of the existing westbound right-turn drop lane as a bypass lane for transit.	Evaluate the feasibility of narrowing the crossing distance by removal of one dedicated left-turn lane and repurpose the space to create a pedestrian median island (all intersection legs). Implement a mobility hub due to high transit ridership and transfers between the future Havana Street BRT and the future Alameda Avenue BRT.
2: Alameda Avenue and Ironton Street	**Minor intersection:** Equity, safety concern, bicycle mobility, pedestrian mobility	Standard short-term recommendations.	Standard mid-term recommendations.	No long-term recommendations.

Project ID and Location	Project Type: Focus	Short-Term Recommendations	Mid-Term Recommendations	Long-Term Recommendations
3: Alameda Avenue and High Line Canal Trail	**Mid-block signalized intersection crossing:** Equity, bicycle mobility, pedestrian mobility	Add signage at the Lotus School access to alert turning drivers of nearby High Line Canal Trail crossing.	No mid-term recommendations.	Explore the feasibility of a trail underpass underneath Alameda Avenue.
4: Alameda Avenue and Lansing Street	**Mid-block or unsignalized intersection crossing:** Equity, bicycle mobility, pedestrian mobility	No short-term recommendations.	Evaluate the feasibility of a pedestrian hybrid beacon signal or fully signalized intersection and hardened median islands for safe pedestrian crossing and safe access to the bus stop (currently 790 ft from the closest signalized crossing) and key destinations, including several multifamily residential buildings on either side of Alameda and two churches on the south side of Alameda.	No long-term recommendations.

Project ID and Location	Project Type: Focus	Short-Term Recommendations	Mid-Term Recommendations	Long-Term Recommendations
5: Alameda Avenue and Moline Street	**Minor intersection:** Equity, bicycle mobility, pedestrian mobility	Standard short-term recommendations.	Standard mid-term recommendations. Extend the existing Moline Street bike lane through the intersection. Design considerations should include: • Evaluating signal phasing alternatives to reduce vehicle/bicyclist conflicts. • Evaluating removal of dedicated turn lanes on Moline Street to allow a more comfortable bikeway through the intersection. • Evaluating bike boxes or protected intersections to reduce bike/vehicle conflicts at intersections and add conflict markings through the intersection.	No long-term recommendations.
6: Moline Street	**Bike network:** Equity, bicycle mobility	No short-term recommendations.	Evaluate the type of bike facility that would work best for extending the existing Moline Street bike facility north of Alameda on Moline Street to access the High Line Canal Trail.	No long-term recommendations.

Project ID and Location	Project Type: Focus	Short-Term Recommendations	Mid-Term Recommendations	Long-Term Recommendations
7: Alameda Avenue and Nome Street	**Mid-block or unsignalized intersection crossing:** Equity, bicycle mobility, pedestrian mobility	No short-term recommendations.	Evaluate the feasibility of a fully signalized intersection and hardened median islands for safe pedestrian crossing and access to the existing bus stop (currently 1,015 ft from the closest signalized crossing), along with a large number of multifamily and single-family residential buildings on the north and south sides of the intersection.	No long-term recommendations.
8: Alameda Avenue and Peoria Street	**Major intersection:** Equity, safety concern, bicycle mobility, pedestrian mobility	Standard short-term recommendations.	Evaluate the feasibility of adding pedestrian median islands with features such as median tips and curbs to slow left-turning vehicles and prevent vehicle/pedestrian conflicts (all intersection legs). Replace diagonal curb ramps with directional curb ramps and minimize curb radii.	No long-term recommendations.

Project ID and Location	Project Type: Focus	Short-Term Recommendations	Mid-Term Recommendations	Long-Term Recommendations
9: Alameda Avenue and Troy Street	**Mid-block or unsignalized intersection crossing improvements:** Equity, bicycle mobility, pedestrian mobility	No short-term recommendations.	Connect Troy Street bike lane to the shared use path on the north side of Alameda by: • Evaluating the feasibility of a pedestrian hybrid beacon signal or full traffic signal and hardened median islands for safe pedestrian/bicycle crossing (currently 1,350 ft from the closest signalized crossing). • Extending the existing bike lane on Troy through the Alameda and Troy intersection. • Adding curb cuts to access the shared-use path on the north side of Alameda, which will connect bicyclists and pedestrians to the Peoria Street shared-use path.	No long-term recommendations.
10: North of Alameda at Troy Street	**Bike network:** Equity, bicycle mobility	No short-term recommendations.	Connect the Troy Street bike lane from the shared-use path on the north side of Alameda west to Peoria Street, and ultimately up to the High Line Canal Trail.	No long-term recommendations.

Project ID and Location	Project Type: Focus	Short-Term Recommendations	Mid-Term Recommendations	Long-Term Recommendations
11: Alameda Avenue and Ursula Way	**Mid-block or unsignalized intersection crossing improvements:** Equity, bicycle mobility, pedestrian mobility	No short-term recommendations.	Evaluate the feasibility of a pedestrian hybrid beacon signal or fully signalized intersection and hardened median islands for safe pedestrian crossing and access to the existing bus stop (currently 1,500 ft from the closest signalized crossing), along with the Bicentennial Art Center and two churches on the north side of the intersection, and a shopping center on the south side of Alameda, approximately 400 ft east of the intersection. Consider relocation of bus stops from Xapary Street to Ursula Street with proposed controlled crossing.	No long-term recommendations.

Project ID and Location	Project Type: Focus	Short-Term Recommendations	Mid-Term Recommendations	Long-Term Recommendations
12: Alameda Avenue and S Potomac Street	**Major intersection:** Equity, safety concern, bicycle mobility, pedestrian mobility	Standard short-term recommendations.	Standard mid-term recommendations. Extend the existing Potomac Street bike lane through the intersection. Design considerations should include: • Evaluating signal phasing alternatives to reduce vehicle/bicyclist conflicts. • Evaluating removal of dedicated turn lanes on Potomac Street to allow a more comfortable bikeway through the intersection. • Evaluating bike boxes or protected intersections to reduce bike/vehicle conflicts at intersections and add conflict markings through the intersection. • Evaluate through lane reduction along Potomac to allow the extension of bike lanes through the intersection.	Evaluate narrowing the crossing distance by removal of one dedicated left-turn lane and repurpose the space to create a pedestrian median island (intersection north leg).
13: S Potomac Street	**Bike network:** Equity, safety concern, bicycle mobility	No short-term recommendations.	Extend the existing Potomac Street bike lane north of Alameda on Potomac Street to access Bicentennial Park.	No long-term recommendations.

Project ID and Location	Project Type: Focus	Short-Term Recommendations	Mid-Term Recommendations	Long-Term Recommendations
14: Alameda Avenue and I-225 Overpass	**Bike network:** Equity, safety concern, bicycle mobility, pedestrian mobility	No short-term recommendations.	Add taller fencing along the bridge's pedestrian walkways to increase safety.	Widen the pedestrian walkway on the south side of the I-225 bridge to a 12-ft shared-use path that enables usage by both pedestrians and bicyclists for improved access from Potomac Street to the Aurora Metro Center Light Rail Station.
15: Alameda Avenue and I-225 Interchange	**Major intersection:** Equity, safety concern, bicycle mobility, pedestrian mobility	Standard short-term recommendations.	Standard mid-term recommendations, in coordination with upcoming bridge replacement project.	Collaborate with CDOT to slow vehicles exiting from I-225 by exploring tools such as pavement markings and geometric design modifications.
16: Alameda Avenue and Abilene Street	**Major intersection:** Equity, safety concern, bicycle mobility, pedestrian mobility	Standard short-term recommendations.	Standard mid-term recommendations.	Evaluate the feasibility of narrowing the crossing distance by removing one dedicated left-turn lane and repurposing the space to create a pedestrian median island (east, west, and south intersection legs).

Project ID and Location	Project Type: Focus	Short-Term Recommendations	Mid-Term Recommendations	Long-Term Recommendations
17: Alameda Avenue and Crystal Street	**Minor intersection:** Equity, safety concern, bicycle mobility, pedestrian mobility	Standard short-term recommendations.	Standard mid-term recommendations.	No long-term recommendations.
18: Alameda Avenue and Sable Boulevard	**Major intersection:** Equity, safety concern, bicycle mobility, pedestrian mobility	Standard short-term recommendations.	Standard short-term recommendations. Evaluate narrowing the crossing distance by removal of one dedicated left-turn lane and repurpose the space to create a pedestrian median island (north, south, and east intersection legs). South of this intersection at the Aurora Metro Center Station, implement a mobility hub due to high transit ridership and transfers between the future Alameda Avenue BRT, the R Line and all bus routes that have transfers at this station.	No long-term recommendations.

Project ID and Location	Project Type: Focus	Short-Term Recommendations	Mid-Term Recommendations	Long-Term Recommendations
19: Sable Boulevard	**Bike network:** Equity, safety concern, bicycle mobility	No short-term recommendations.	Replace the current southbound bike lane on Sable Boulevard with a shared-use path on the east side of Sable Boulevard to connect more safely to the Aurora Metro Center Station.	No long-term recommendations.
20: West of Alameda Avenue and S Ironton Street to Expo Park	**Sidewalk:** Equity, safety concern, bicycle mobility, pedestrian mobility	No short-term recommendations.	No mid-term recommendations.	Improve the current 5-ft attached sidewalks on the south side of Alameda from 1/2 block W of Ironton Street to Expo Park by adding either separated sidewalks with amenity zones or wider attached sidewalks.
21: Alameda Avenue (Peoria Street to Potomac Street)	**Sidewalk:** Safety concern, bicycle mobility, pedestrian mobility	No short-term recommendations.	No mid-term recommendations.	If it is feasible to narrow travel lanes along this portion of the corridor, use this right-of-way to improve the 5-ft attached sidewalks on the south side of Alameda from Peoria to Potomac Street (separated sidewalk or wider attached sidewalks) by adding either separated sidewalks with amenity zones or wider attached sidewalks.

Project ID and Location	Project Type: Focus	Short-Term Recommendations	Mid-Term Recommendations	Long-Term Recommendations
22: Segment-wide	**Transit:** Equity, transit mobility	Consider increased transit frequency.	Evaluate transit signal priority at all signalized intersections. Consider bus stop consolidation and rebalancing. Average stop spacing in Segment 6 is currently just under one-fifth mile. Further analysis of boardings and alightings by stop can support where stop consolidation should be considered.	Consider increased transit frequency.
23: Segment-wide	**Corridor speed and safety:** Equity, safety concern, bicycle mobility, pedestrian mobility	Evaluate reducing the speed limit from the current 45 miles per hour and consider enforcement measures to discourage speeding.	Evaluate the feasibility of narrowing general purpose travel lane widths.	No long-term recommendations.
24: Segment-wide	**Sidewalk:** Pedestrian mobility	Consider wayfinding signage to destinations in Segment 6, including Expo Park, High Line Canal Trail, Highline Park, Bicentennial Park, Town Center at Aurora and Aurora Metro Center Station.	No mid-term recommendations.	No long-term recommendations.

Project Prioritization

The large collective scale of recommended improvements within each corridor segment requires a substantial amount of time and investment to implement all of them. Because of this, the project team conducted a prioritization process after project development to offer insight into which projects are best aligned with the study's focus and expected to be most beneficial. The process solely focused on assessing project need and benefit, so as not to "penalize" high-cost projects in terms of priority

The project team integrated cost and impact considerations into the implementation assessment detailed in this chapter. The project team identified 15 prioritization criteria, grouped into 3 categories:

Equity Considerations: What is the equity context of the project location?

- DRCOG Economic Status Index (1–4 points).
- DRCOG Mobility Barriers Index (1–4 points).
- DRCOG Race and National Origin Index (1–4 points).

Transportation Network Characteristics: What is the existing transportation/land use context of the project location?

- Severe Crash Density (1–5 points).
- Proximity to Bike Crossing (0–2 points).
- Pedestrian Focus Area (0–2 points).
- Transit Boardings and Alightings (1–5 points).
- Bike Comfort Assessment (1–3 points).
- Pedestrian Comfort Assessment (1–3 points).

Corridor Goals Evaluation: How directly does the project address corridor goals?

- Connectivity (1–3 points).
- Safety (1–3 points).
- Improved Transit (1–3 points).
- Accessibility (1–3 points).
- Mobility (1–3 points).
- Vibrancy (1–3 points).

The raw scoring results from this process were weighted so that each category of criteria represented one-third of the overall prioritization score. **Table 8 through Table 13** present the five projects with the highest weighted prioritization scores in each corridor segment. **Attachment D** provides the prioritization scores for all projects identified by the study.

Table 8: Segment 1 high priority projects

Project ID and Name	Weighted Prioritization Score
13. Sheridan and Alameda Intersection Improvements	79
15. Segment-Wide Speed and Safety Improvements	69
16. Segment-Wide Wayfinding	68
5. Pierce and Alameda Intersection Improvements	68
14. Segment-Wide Transit Speed and Reliability Improvements	66

Table 9: Segment 2 high priority projects

Project ID and Name	Weighted Prioritization Score
7. Federal and Alameda Intersection Improvements	89
15. Sidewalk Widening, Sheridan to S Platte River	85
4. Raleigh and Alameda Intersection Improvements	82
6. Morrison and Alameda Intersection Improvements	82
16. Raised Median, Decatur to Navajo	81

Table 10: Segment 3 high priority projects

Project ID and Name	Weighted Prioritization Score
1. Cherokee and Alameda Intersection Improvements	69
3. Broadway and Alameda Intersection Improvements	66
12. Shared-Use Path Widening, Santa Fe to Broadway	63
2. Alameda Station Area Routing Improvements	57
6. Pearl and Alameda Intersection Improvements	57

Table 11: Segment 4 high priority projects

Project ID and Name	Weighted Prioritization Score
3. Colorado and Alameda Intersection Improvements	69
4. Leetsdale and Alameda Intersection Improvements	68
11. Monaco and Alameda Intersection Improvements	68
15. Segment-Wide Speed and Safety Improvements	63

Project ID and Name	Weighted Prioritization Score
16. Segment-Wide Wayfinding	63

Table 12: Segment 5 high priority projects

Project ID and Name		Weighted Prioritization Score
7.	Havana and Alameda Intersection Improvements	84
8.	Sidewalk Widening/Detachment, Xenia to Havana	65
10.	Segment-Wide Speed and Safety Improvements	63
1.	Fairmount Cemetery and Alameda Crossing Improvements	62
11.	Segment-Wide Wayfinding	61

Table 13: Segment 6 high priority projects

Project ID and Name		Weighted Prioritization Score
8.	Peoria and Alameda Intersection Improvements	81
20.	Sidewalk Widening/Detachment, Havana to High Line Canal	81
18.	Sable and Alameda Intersection Improvements	80
5.	Moline and Alameda Intersection Improvements	79
17.	Crystal and Alameda Intersection Improvements	77

Implementation

The Implementation chapter builds on the Segment Recommendations chapter by identifying funding and collaboration strategies and evaluating implementation considerations for each project to ensure that projects can move ahead efficiently.

Phasing and funding

To support recommended project implementation, agencies can adopt a comprehensive approach that leverages multiple funding sources. By combining various funding sources, they can develop robust financial strategies to ensure the continued planning and implementation of these recommended projects. At the federal level, competitive grant programs offer substantial funding opportunities to address the recommended major corridor improvements, including bus rapid transit and major infrastructure improvements. State, regional, and municipal funding opportunities also play a critical role in supporting implementation of the recommended projects, providing further options for securing necessary funding.

Table 14: Overview of potential federal, state, regional, and local funding sources

Funding Opportunity and Source	Funding Type	Description	Transit Project Funding	Safety Project Funding	Bike/Ped Project Funding
Capital Investment Grants (CIG) – Small Starts or New Starts **(FTA)**	Federal	This FTA discretionary grant program funds transit capital investments, including heavy rail, commuter rail, light rail, streetcars and bus rapid transit. Small Starts includes projects with a total estimated project cost of less than $400 million (with a maximum of $150 million from CIG funding). New Starts includes projects with a total estimated project cost of $400 million or more (and are seeking $150 million or more in CIG funding).	X		

Funding Opportunity and Source	Funding Type	Description	Transit Project Funding	Safety Project Funding	Bike/Ped Project Funding
Safe Streets and Roads for All (SS4A) Grant Program **(US DOT)**	Federal	The Bipartisan Infrastructure Law (BIL) established the Safe Streets and Roads for All (SS4A) discretionary program with $5 billion in appropriated funds over five years, 2022–2026. The SS4A program funds regional, local and Tribal initiatives through grants to prevent roadway deaths and serious injuries.		X	X
Active Transportation Infrastructure Investment Program (ATIIP) **(US DOT)**	Federal	A competitive grant program created by the BIL to construct projects to provide safe and connected active transportation facilities in active transportation networks or active transportation spines.	X		X
Surface Transportation Block Grant (STBG) **(FHWA)**	Federal	A grant program that provides flexible funding that may be used by states and localities for projects to preserve and improve the conditions and performance on any Federal-aid highway, bridge and tunnel project on any public road, pedestrian and bicycle infrastructure, and transit capital projects, including intercity bus terminals.	X	X	X

Funding Opportunity and Source	Funding Type	Description	Transit Project Funding	Safety Project Funding	Bike/Ped Project Funding
Transportation Alternatives Program (TAP) **(FHWA)**	Federal	Federal funds are allocated under the TAP program to transportation improvement projects that expand travel choice, strengthen the local economy, improve quality of life and protect the environment. TAP projects are selected via a competitive scoring process.	X	X	X
Congestion Mitigation and Air Quality Improvement Program (CMAQ) **(FHWA)**	Federal	The CMAQ program provides a funding source for state and local governments to fund transportation projects and programs to help meet the requirements of the Clean Air Act. Relevant eligible project types include transit improvements, bicycle and pedestrian facilities and shared micromobility projects, including shared scooter systems.	X		X

Funding Opportunity and Source	Funding Type	Description	Transit Project Funding	Safety Project Funding	Bike/Ped Project Funding
Revitalizing Main Streets **(CDOT)**	State	A competitive grant program that enhances active transportation safety and strengthens the connection of people to main streets and central economic hubs. The program encourages physical activity and enhances local economic vitality in towns and cities across Colorado through funding infrastructure improvements to make walking and biking easy, yielding long-term benefits that bolster community connections.		X	X
Highway Safety Improvement Program (HSIP) **(CDOT)**	State	A Federal-aid program with the purpose of achieving significant reduction in fatalities and serious injuries on all public roadways, including non-state owned roads and roads on tribal land. Administered by CDOT, the Colorado HSIP requires a data-driven, strategic approach to improving highway safety on all public roads with a focus on performance to support zero deaths and serious injuries on Colorado roads.		X	

Funding Opportunity and Source	Funding Type	Description	Transit Project Funding	Safety Project Funding	Bike/Ped Project Funding
Colorado Safe Routes to School (SRTS) **(CDOT)**	State	Colorado SRTS uses a comprehensive approach to make school routes safer for children when walking and bicycling to school. SRTS funds can be used for safer infrastructure, education about school travel choices and programs that encourage healthy and safe transportation options for children.		X	X
Office of Innovative Mobility (OIM) Grants **(CDOT)**	State	CDOT OIM provides grants to private, public, non-profit and local agencies to fund innovative mobility and electrification solutions.	X	X	X
Transportation Improvement Program (TIP) **(DRCOG)**	Regional	DRCOG implements the current Regional Transportation Plan through the Transportation Improvement Program. The program identifies all current federal- and state-funded transportation projects to be completed in the Denver region over a four-year period.	X	X	X

Funding Opportunity and Source	Funding Type	Description	Transit Project Funding	Safety Project Funding	Bike/Ped Project Funding
TIP Set-Aside Programs **(DRCOG)**	Regional	The TIP also funds set-aside programs, including Community Mobility Planning and Implementation; TDM Services; Regional Transportation Operations and Technology; Air Quality Improvements; Human Service Transportation; and Corridor, Community, Livability, and Innovation Planning.	X	X	X
Local Matching Funds for Federal, State, or Regional Programs	Municipal	Many previously listed programs require a local match. Refer to the individual program websites for specific match requirements.	X	X	X
Capital Improvement Program Funding (CIP)	Municipal	A CIP manages the annual budget process for municipal level capital investments and provides analysis for decision-making and strategic capital planning efforts.	X	X	X
Recurring programmed funds	Municipal	Funding allocated by annual municipal budgets, including signals programs, bicycle and pedestrian programs, transit programs, Vision Zero programs, local Safe Routes to School programs and other initiatives.	X	X	X

Implementation approach

All projects from the Segment Recommendations chapter have been evaluated for implementation based on implementation consideration rating criteria.

Table 15: Rating criteria for project delivery complexity

Implementation Considerations	Low	Medium	High
Project Scope	Spot improvements. Traffic study not anticipated.	Minor intersection or portion of corridor segment improvements . Traffic analysis likely required.	Major intersection or corridor-wide improvements. Robust traffic analysis required.
Level of Complexity	Minor traffic signal timing adjustments.	Primarily signing and striping work, with some minor concrete work (e.g., curb ramp replacement). More significant traffic signal timing adjustments.	Substantial concrete work required in addition to signal and/or striping work
Interagency Coordination Requirements	Project is within a single municipality; no CDOT controlled roadways involved.	Project involves coordination between municipalities and/or CDOT controlled roadways are involved.	Significant coordination required among municipalities and other key stakeholders (DRCOG, CDOT, RTD, etc.).
Coordination with Other Projects/Plans	No other current projects or plans exist where coordination is required.	Coordination required to ensure that the project aligns with existing planning/concept work completed in the project area.	Design work has already been completed for other ongoing initiatives in the area; large amount of coordination required.
Construction Impact	< 6 months (Most "Low" Project Scope and "Low" Investment Level projects).	6 months–1 year (Most "Medium" Project Scope and "Medium" Investment Level projects).	> 1 year (Most "High" Project Scope and "High" Investment Level projects).

Table 16: Rating criteria for financial impact

Implementation Considerations	Low	Medium	High
Project Cost	$ – less than $1 million.	$$ – between $1 million and $3 million.	$$$ – over $3 million.

Implementation Considerations	Low	Medium	High
Impact of Cost	Smaller scale project with no external funding.	Grant funded (one or more) with standard administration process, 20% match.	High grant match requirement and/or internal costs (staffing resources).
Recommended Funding Sources	**Municipal Funding:** Recurring/programmed funds, **External Funding:** None needed, or state level grant programs (e.g., CDOT Revitalizing Main Streets).	**Municipal Funding:** Municipal CIP Funding. **External Funding:** Federal (SS4A), CDOT (HSIP), and other funding sources detailed in the next section.	**Municipal Funding:** Bond projects; matching funds for federal funding. **External Funding:** Federal (DRCOG TIP controlled).

Table 17: Rating criteria for community input

Implementation Considerations	Low	Medium	High
Community Project Priority*	Bottom one-third of segment priorities, per community feedback.	Middle one-third of segment priorities, per community feedback.	Top one-third of segment priorities, per community feedback.

*The Community Project Priority criteria are based on the following Phase 2 Engagement Survey question that was asked for each corridor segment: *"Which of these recommended intersections are you most excited about? Select up to 5 intersections."*

The following assumptions are used for the project implementation scoring tables:

- **All evaluation ratings are based on full project implementation**. As a reminder, all project recommendations from the Segment recommendations chapter are categorized as short-, medium-, or long-term recommendations. From an implementation perspective, this incremental approach makes it possible to evaluate and implement recommended improvements faster. For implementation scoring, all projects where phased implementation was recommended will be rated based on full project implementation. For example, implementation scoring is based on the combination of the short-, medium-, and long-term recommendations necessary to reach full project implementation.
- Project cost estimates are derived from unit-type (per mile, per intersection, etc.) cost estimates for common project types and elements. The unit cost estimates

were developed using historical cost data and generalized quantities for the basic materials of each project type, with standard contingency percentages applied for additional considerations like preliminary/final design, utilities, drainage and right-of-way.

Table 18 through **Table 23** show project implementation ratings for each corridor segment.

Table 18: Project implementation considerations – Segment 1

Project Name	Project Scope	Level of Complexity	Interagency Coordination Requirements	Coordination with Other Plans/Projects	Construction Impact	Cost Estimate	Impact of Cost	Recommended Funding Sources	Community Project Priority
Wadsworth & Alameda Intersection Improvements	High	High	Medium	Medium	High	Low	Medium	Medium	High
Vance & Alameda Intersection Improvements	Medium	High	Low	Low	Medium	Low	Low	Low	Medium
Teller & Alameda Intersection Improvements	Low	Low	Low	Low	Low	Medium	Medium	Medium	Low
Saulsbury & Alameda Intersection Improvements	Medium	Medium	Low	Low	Low	Low	Medium	Medium	Low
Pierce & Alameda Intersection Improvements	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	High
Pierce Street Bikeway Improvements	Medium	Medium	Medium	Medium	Low	Low	Low	Low	N/A
Sidewalk Improvements, Newland to Lamar	Medium	Medium	Low	Medium	Medium	Low	Medium	Medium	Low

Project Name	Project Scope	Level of Complexity	Interagency Coordination Requirements	Coordination with Other Plans/Projects	Construction Impact	Cost Estimate	Impact of Cost	Recommended Funding Sources	Community Project Priority
Lamar & Alameda Crossing Improvements	**Medium**	**Medium**	**Low**	**Low**	**Low**	**Medium**	**Medium**	**Medium**	**N/A**
Harlan & Alameda Intersection Improvements	**Medium**	**Medium**	**Medium**	**Medium**	**Medium**	**Low**	**Medium**	**Medium**	**Medium**
Fenton & Alameda Crossing Improvements	**Medium**	**Medium**	**Low**	**Low**	**Low**	**Low**	**Low**	**Low**	**Low**
Depew & Alameda Intersection Improvements	**Low**	**Low**	**Low**	**Low**	**Low**	**Medium**	**Medium**	**Medium**	**Medium**
Benson & Alameda Crossing Improvements	**Medium**	**Medium**	**Low**	**Low**	**Low**	**Low**	**Low**	**Low**	**N/A**
Sheridan & Alameda Intersection Improvements	**High**	**High**	**Medium**	**Medium**	**High**	**Low**	**Low**	**Low**	**High**
Transit Speed & Reliability Improvements, Wadsworth to Sheridan	**Medium**	**Medium**	**Medium**	**Medium**	**Medium**	**Low**	**Low**	**Low**	**N/A**

Project Name	Project Scope	Level of Complexity	Interagency Coordination Requirements	Coordination with Other Plans/Projects	Construction Impact	Cost Estimate	Impact of Cost	Recommended Funding Sources	Community Project Priority
Lane Narrowing, Wadsworth to Sheridan	**High**	**High**	**High**	**High**	**High**	**High**	**High**	**High**	**N/A**
Wayfinding, Wadsworth to Sheridan	**Low**	**Medium**	**Medium**	**High**	**Low**	**Medium**	**Medium**	**Medium**	**N/A**

Table 19: Project implementation considerations – Segment 2

Project Name	Project Scope	Level of Complexity	Interagency Coordination Requirements	Coordination with Other Plans/Projects	Construction Impact	Cost Estimate	Impact of Cost	Recommended Funding Sources	Community Project Priority
Weir Gulch Trail Crossing Improvements	Medium	High	Medium	Medium	Medium	Low	Medium	Medium	High
Stuart & Alameda Intersection Improvements	Medium	High	Medium	Low	Medium	Low	Medium	Medium	Medium
Raleigh & Alameda Intersection Improvements	Medium	Medium	Medium	Low	Medium	Low	Medium	Medium	Low
Osceola & Alameda Crossing Improvements	Medium	Medium	Medium	Medium	Medium	Low	Low	Low	Medium
Morrison & Alameda Intersection Improvements	Low	Low	Medium	Low	Low	Low	Low	Low	Low

Project Name	Project Scope	Level of Complexity	Interagency Coordination Requirements	Coordination with Other Plans/Projects	Construction Impact	Cost Estimate	Impact of Cost	Recommended Funding Sources	Community Project Priority
Federal & Alameda Intersection Improvements	**High**	**High**	**Medium**	**Medium**	**High**	**High**	**High**	**High**	**Medium**
Clay Bikeway Improvements	**High**	**High**	**High**	**Medium**	**High**	**Medium**	**Medium**	**Medium**	**N/A**
Tejon & Alameda Intersection Improvements	**High**	**Medium**	**High**	**High**	**Medium**	**Low**	**Medium**	**Medium**	**High**
Railroad Crossing Improvements, Navajo & Alameda	**Medium**	**Medium**	**High**	**Medium**	**Medium**	**Medium**	**Medium**	**Medium**	**N/A**
Lipan & Alameda Crossing Improvements	**High**	**High**	**High**	**Medium**	**High**	**Medium**	**Medium**	**Medium**	**High**

Project Name	Project Scope	Level of Complexity	Interagency Coordination Requirements	Coordination with Other Plans/Projects	Construction Impact	Cost Estimate	Impact of Cost	Recommended Funding Sources	Community Project Priority
S Platte River & Alameda Intersection Improvements	**Medium**	**Medium**	**Medium**	**Medium**	**Low**	**Low**	**Low**	**Low**	**Medium**
Kalamath & Alameda Intersection Improvements	**High**	**High**	**High**	**High**	**High**	**High**	**High**	**High**	**High**
Santa Fe & Alameda Intersection Improvements	**Medium**	**Medium**	**Medium**	**Medium**	**Low**	**Low**	**Low**	**low**	**Low**
Sidewalk Widening, Sheridan to S Platte River	**Medium**	**Medium**	**Medium**	**Low**	**Medium**	**Low**	**Medium**	**Medium**	**N/A**
Raised Median, Decatur to Navajo	**High**	**High**	**Medium**	**High**	**High**	**Medium**	**Medium**	**Medium**	**N/A**

Project Name	Project Scope	Level of Complexity	Interagency Coordination Requirements	Coordination with Other Plans/Projects	Construction Impact	Cost Estimate	Impact of Cost	Recommended Funding Sources	Community Project Priority
Westbound Lane Balancing, Decatur to S Platte River	**Medium**	**Medium**	**High**	**Low**	**Medium**	**Low**	**Medium**	**Medium**	**N/A**
Westbound BAT Lane, Federal to Irving	**High**	**High**	**High**	**High**	**High**	**Medium**	**Medium**	**Medium**	**N/A**
Transit Speed & Reliability Improvements, Sheridan to Santa Fe	**Medium**	**Medium**	**Medium**	**Medium**	**Low**	**Low**	**Low**	**Low**	**N/A**
Lane Narrowing, Sheridan to Santa Fe	**High**	**High**	**High**	**High**	**High**	**High**	**High**	**High**	**N/A**
Wayfinding, Sheridan to Santa Fe	**High**	**High**	**High**	**High**	**High**	**High**	**High**	**High**	**N/A**

Table 20: Project implementation considerations – Segment 3

Project Name	Project Scope	Level of Complexity	Interagency Coordination Requirements	Coordination with Other Plans/Projects	Construction Impact	Cost Estimate	Impact of Cost	Recommended Funding Sources	Community Project Priority
Cherokee & Alameda Intersection Improvements	**Medium**	**High**	**Medium**	**Medium**	**Medium**	**Low**	**Medium**	**Medium**	**High**
Alameda Station Area Routing Improvements	**Medium**	**High**	**Medium**	**Low**	**Medium**	**Low**	**Medium**	**Medium**	**Medium**
Broadway & Alameda Intersection Improvements	**Medium**	**Medium**	**Medium**	**Low**	**Medium**	**Low**	**Medium**	**Medium**	**Low**
Lincoln & Alameda Intersection Improvements	**Medium**	**Medium**	**Low**	**Low**	**Medium**	**Low**	**Medium**	**Medium**	**Medium**
Logan & Alameda Intersection Improvements	**High**	**High**	**Medium**	**Low**	**High**	**Medium**	**Medium**	**Medium**	**N/A**
Pearl Intersection Improvements	**Low**	**Medium**	**Medium**	**Medium**	**Low**	**Low**	**Low**	**Low**	**Low**

Project Name	Project Scope	Level of Complexity	Interagency Coordination Requirements	Coordination with Other Plans/Projects	Construction Impact	Cost Estimate	Impact of Cost	Recommended Funding Sources	Community Project Priority
Washington Intersection Improvements	**Low**	**Low**	**Low**	**Low**	**Low**	**Low**	**Low**	**Low**	**Medium**
Emerson Intersection Improvements	**Low**	**Low**	**Low**	**Low**	**Low**	**Low**	**Low**	**Low**	**Low**
Downing & Alameda Intersection Improvements	**High**	**High**	**Low**	**Low**	**High**	**Medium**	**Medium**	**Medium**	**Medium**
Williams & Alameda Crossing Improvements	**Low**	**Medium**	**Low**	**Low**	**Low**	**Low**	**Low**	**Low**	**Low**
University & Alameda Intersection Improvements	**High**	**High**	**Medium**	**Medium**	**High**	**Medium**	**Medium**	**Medium**	**Medium**
Shared-use Path Widening, Santa Fe to Broadway	**Low**	**Low**	**Low**	**Low**	**Low**	**Low**	**Low**	**Low**	**Low**
Raised Median, Broadway to Logan	**High**	**High**	**High**	**High**	**High**	**High**	**High**	**High**	**N/A**
Road Diet, Logan to Franklin	**Medium**	**Medium**	**Medium**	**Low**	**Medium**	**Low**	**Medium**	**Medium**	**High**

Project Name	Project Scope	Level of Complexity	Interagency Coordination Requirements	Coordination with Other Plans/Projects	Construction Impact	Cost Estimate	Impact of Cost	Recommended Funding Sources	Community Project Priority
Traffic Calming, Franklin to University	**High**	**High**	**Medium**	**Medium**	**High**	**Medium**	**Medium**	**Medium**	**N/A**
Sidewalk Construction, Race to Gaylord	**High**	**High**	**Medium**	**Medium**	**High**	**Medium**	**Medium**	**Medium**	**N/A**
Transit Speed & Reliability Improvements, Santa Fe to University	**Medium**	**Medium**	**Low**	**Low**	**Medium**	**Low**	**Low**	**Low**	**N/A**
Wayfinding, Santa Fe to University	**Medium**	**Medium**	**Medium**	**Medium**	**Medium**	**Medium**	**Medium**	**Medium**	**N/A**

Table 21: Project implementation considerations – Segment 4

Project Name	Project Scope	Level of Complexity	Interagency Coordination Requirements	Coordination with Other Plans/Projects	Construction Impact	Cost Estimate	Impact of Cost	Recommended Funding Sources	Community Project Priority
Cherry Creek North & Alameda Crossing Improvements	**Medium**	**High**	**Medium**	**Medium**	**Medium**	**Low**	**Medium**	**Medium**	**High**
Colorado & Alameda Intersection Improvements	**Medium**	**High**	**Medium**	**Low**	**Medium**	**Low**	**Medium**	**Medium**	**Medium**
Leetsdale & Alameda Intersection Improvements	**Medium**	**Medium**	**Medium**	**Low**	**Medium**	**Low**	**Medium**	**Medium**	**Low**
Clermont & Alameda Crossing Improvements	**Medium**	**Medium**	**Low**	**Low**	**Medium**	**Low**	**Medium**	**Medium**	**Medium**
Eastbound BAT Lane, Leetsdale to Dahlia	**High**	**High**	**Medium**	**Low**	**High**	**Medium**	**Medium**	**Medium**	**N/A**
Alameda & Dahlia Intersection Improvements	**Low**	**Medium**	**Medium**	**Medium**	**Low**	**Low**	**Low**	**Low**	**Low**

Project Name	Project Scope	Level of Complexity	Interagency Coordination Requirements	Coordination with Other Plans/Projects	Construction Impact	Cost Estimate	Impact of Cost	Recommended Funding Sources	Community Project Priority
Forest & Alameda Crossing Improvements	**Low**	**Low**	**Low**	**Low**	**Low**	**Low**	**Low**	**Low**	**Medium**
Holly & Alameda Intersection Improvements	**Low**	**Low**	**Low**	**Low**	**Low**	**Low**	**Low**	**Low**	**Low**
Kearney & Alameda Crossing Improvements	**High**	**High**	**Low**	**Low**	**High**	**Medium**	**Medium**	**Medium**	**Medium**
Monaco & Alameda Intersection Improvements	**Low**	**Medium**	**Low**	**Low**	**Low**	**Low**	**Low**	**Low**	**Low**
Quebec & Alameda Intersection Improvements	**High**	**High**	**Medium**	**Medium**	**High**	**Medium**	**Medium**	**Medium**	**Medium**
BAT Lanes, Monaco to Quebec	**Low**	**Low**	**Low**	**Low**	**Low**	**Low**	**Low**	**Low**	**Low**
Transit Speed & Reliability Improvements, Colorado to Quebec	**High**	**High**	**High**	**High**	**High**	**High**	**High**	**High**	**N/A**

Project Name	Project Scope	Level of Complexity	Interagency Coordination Requirements	Coordination with Other Plans/Projects	Construction Impact	Cost Estimate	Impact of Cost	Recommended Funding Sources	Community Project Priority
Lane Narrowing, University to Quebec	**Medium**	**Medium**	**Medium**	**Low**	**Medium**	**Low**	**Medium**	**Medium**	**High**
Wayfinding, University to Quebec	**High**	**High**	**Medium**	**Medium**	**High**	**Medium**	**Medium**	**Medium**	**N/A**

Table 22: Project implementation considerations – Segment 5

Project Name	Project Scope	Level of Complexity	Interagency Coordination Requirements	Coordination with Other Plans/Projects	Construction Impact	Cost Estimate	Impact of Cost	Recommended Funding Sources	Community Project Priority
Fairmount Cemetery & Alameda Crossing Improvements	**Medium**	**Medium**	**Low**	**Low**	**Medium**	**Low**	**Low**	**Medium**	**N/A**
Fairmount & Alameda Intersection Improvements	**High**	**Medium**	**Low**	**Low**	**High**	**High**	**Medium**	**High**	**Medium**
Xenia & Alameda Intersection Improvements	**High**	**Medium**	**Low**	**Low**	**Medium**	**Low**	**Medium**	**Medium**	**Low**
Clinton & Alameda Intersection Improvements	**Low**	**Low**	**Low**	**Low**	**Low**	**Low**	**Low**	**Medium**	**N/A**

Project Name	Project Scope	Level of Complexity	Interagency Coordination Requirements	Coordination with Other Plans/Projects	Construction Impact	Cost Estimate	Impact of Cost	Recommended Funding Sources	Community Project Priority
Dayton & Alameda Intersection Improvements	**Medium**	**Medium**	**Low**	**Low**	**Medium**	**Low**	**Medium**	**Medium**	**High**
Galena & Alameda Intersection Improvements	**High**	**High**	**Medium**	**Low**	**High**	**Low**	**Low**	**Medium**	**N/A**
Havana & Alameda Reconstruction	**Low**	**Medium**	**Low**	**Low**	**Medium**	**High**	**High**	**High**	**High**
Sidewalk Improvements, Xenia to Havana	**Medium**	**Medium**	**Low**	**Low**	**Medium**	**High**	**High**	**Medium**	**N/A**
Transit Speed & Reliability Improvements, Quebec to Havana	**High**	**High**	**Low**	**Low**	**High**	**High**	**High**	**High**	**N/A**
Lane Narrowing, Quebec to Havana	**Low**	**Medium**	**Low**	**Low**	**Medium**	**High**	**High**	**High**	**N/A**
Wayfinding, Quebec to Havana	**Medium**	**Medium**	**Low**	**Low**	**Medium**	**Low**	**Low**	**Low**	**N/A**

Table 23: Project implementation considerations – Segment 6

Project Name	Project Scope	Level of Complexity	Interagency Coordination Requirements	Coordination with Other Plans/Projects	Construction Impact	Cost Estimate	Impact of Cost	Recommended Funding Sources	Community Project Priority
Ironton & Alameda Intersection Improvements	**Medium**	**Medium**	**Low**	**Low**	**Medium**	**Low**	**Medium**	**Medium**	**Low**
High Line Canal Trail Crossing Improvements	**High**	**High**	**Medium**	**Medium**	**Low**	**High**	**High**	**High**	**Medium**
Lansing & Alameda Crossing Improvements	**Medium**	**Medium**	**Low**	**Low**	**Low**	**Low**	**Low**	**Low**	**N/A**

Project Name	Project Scope	Level of Complexity	Interagency Coordination Requirements	Coordination with Other Plans/Projects	Construction Impact	Cost Estimate	Impact of Cost	Recommended Funding Sources	Community Project Priority
Moline & Alameda Intersection Improvements	**Medium**	**Medium**	**Low**	**Medium**	**Medium**	**Low**	**Medium**	**Medium**	**Low**
Moline Bikeway Improvements	**Medium**	**Medium**	**Low**	**Medium**	**Low**	**Low**	**Low**	**Low**	**N/A**
Nome & Alameda Crossing Improvements	**Medium**	**Medium**	**Low**	**Low**	**Low**	**Low**	**Low**	**Low**	**N/A**
Peoria & Alameda Intersection Improvements	**High**	**Medium**	**Low**	**Low**	**Medium**	**Medium**	**Medium**	**Medium**	**High**
Troy & Alameda Crossing Improvements	**Medium**	**Medium**	**Low**	**Low**	**Low**	**Low**	**Low**	**Low**	**Medium**
Troy Bikeway Improvements	**Medium**	**Medium**	**Low**	**Medium**	**Medium**	**Low**	**Low**	**Low**	**N/A**
Ursula & Alameda Crossing Improvements	**Medium**	**Medium**	**Low**	**Low**	**Low**	**Low**	**Low**	**Low**	**N/A**

Project Name	Project Scope	Level of Complexity	Interagency Coordination Requirements	Coordination with Other Plans/Projects	Construction Impact	Cost Estimate	Impact of Cost	Recommended Funding Sources	Community Project Priority
Potomac & Alameda Intersection Improvements	High	Medium	Low	Medium	Medium	Medium	Medium	Medium	Medium
Potomac Bikeway Improvements	Medium	Medium	Low	Medium	Low	Low	Low	Low	N/A
Shared-use Path, Potomac to Sable	High	High	Medium	High	High	Medium	Medium	Medium	N/A
I-225 & Alameda Intersection Improvements	High	High	High	High	Medium	Medium	Medium	Medium	High
Abilene & Alameda Intersection Improvements	High	High	Low	Medium	Medium	Medium	Medium	Medium	High
Crystal & Alameda Intersection Improvements	High	High	Low	Low	Medium	Low	Low	Medium	Low
Sable & Alameda Intersection Improvements	High	High	Low	Low	Medium	Medium	Medium	Medium	Medium
Sable Bikeway Improvements	Medium	Medium	Low	Medium	Medium	Medium	Medium	Medium	N/A

Project Name	Project Scope	Level of Complexity	Interagency Coordination Requirements	Coordination with Other Plans/Projects	Construction Impact	Cost Estimate	Impact of Cost	Recommended Funding Sources	Community Project Priority
Sidewalk Improvements, Havana to High Line Canal	**Medium**	**High**	**Low**	**Low**	**Medium**	**High**	**High**	**High**	**N/A**
Sidewalk Improvements, Peoria to Potomac	**High**	**High**	**Low**	**Low**	**Medium**	**High**	**High**	**High**	**N/A**
Transit Speed & Reliability Improvements, Havana to Sable	**Medium**	**Medium**	**Medium**	**Medium**	**Low**	**High**	**High**	**High**	**N/A**
Lane Narrowing, Havana to Sable	**High**	**High**	**High**	**High**	**High**	**High**	**High**	**High**	**N/A**
Wayfinding, Havana to Sable	**Low**	**Medium**	**Medium**	**High**	**Low**	**Low**	**Low**	**Low**	**N/A**

Next steps

The project recommendations and implementation considerations will help carry forward the Alameda Corridor Plan's established vision, purpose and goals. While the project team has explored ways to improve transit, safety and multimodal infrastructure improvements through both intersection-level projects and corridor-wide transit investments, the Alameda Avenue Corridor Planning Study represents the first step in defining a bus rapid transit investment along Alameda Avenue.

Delivering bus rapid transit on Alameda Avenue

Additional study is needed to determine the exact configuration of bus rapid transit elements like station locations, locations of dedicated bus lanes and other transit priority treatments, service pattern(s) and the western terminus of the bus rapid transit project.

Corridor partners (DRCOG, City of Lakewood, City and County of Denver, City of Aurora, RTD and CDOT) can take incremental steps as outlined in this corridor plan to set the stage for the future bus rapid transit project. To maximize the corridor's full implementation potential, additional funding sources are likely needed beyond local and regional funding. The Federal Transit Administration Capital Investment Grant (CIG) program is one of the most prominent funding options. It funds corridor-based bus rapid transit projects through competitive, discretionary grants. To be eligible for these funds, project sponsors follow a standardized process as outlined below. Note that a Corridor Study (like the Alameda Avenue Planning Study) is a common preliminary step that identifies a corridor as a potential BRT project but is not a prerequisite for pursuing federal transit funding.

- **Alternatives Analysis (1–1.5 years):** Represents a planning study that determines the best approach to configuring bus rapid transit within the corridor. An Alternatives Analysis results in a Locally Preferred Alternative outlining the conceptual station locations, project termini and general locations and types of transit priority treatments.
- **Environmental Study (1–2 years):** Complies with National Environmental Policy Act requirements to study the environmental impacts of the Locally Preferred Alternative or multiple alternatives compared to doing nothing. At the end of this phase, project sponsors have enough information to submit a formal application for CIG funding.
- **Preliminary Design (1–2 years, typically in tandem with Environmental Study):** Project sponsors work with the community to better define the design and placement of bus rapid transit stations within the street, as well as the location and function of transit priority treatments. This phase usually results in engineering drawings at a 30% level of detail.
- **Final Design (1.5–2.5 years):** Sponsors continue working with the community to advance corridor design to the 60%, 90%, and finally 100% level of detail. Right-of-way acquisition and utility relocation coordination can also occur during this phase as needed.

- **Construction (2–4 years):** Depending on the level of complexity of the preferred alternative, construction can take anywhere from 2 to 4 years, accomplished in phases to minimize disruption to the existing street.

Figure 23 shows a potential project schedule for Alameda Avenue bus rapid transit, based on these general timeframes. At the conclusion of this study, project partners will determine the right approach for launching the Alternatives Analysis phase to continue the community conversation about delivering BRT on Alameda Avenue.

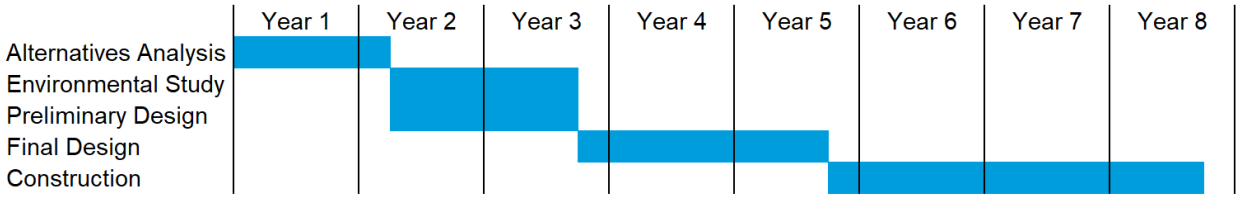


Figure 23: Potential project schedule

Multimodal improvements

In addition to the corridor-level bus rapid transit improvements, Lakewood, Denver, and Aurora can use the project recommendations and implementation considerations scoring to understand the general level of effort required to implement each project. Having this understanding will allow each municipality to prioritize important projects in the near term and identify project funding sources, while also planning for future opportunities that should be closely coordinated with the Alameda bus rapid transit project.