APPENDIX D
TRANSIT-FRIENDLY STREETS GUIDE

JANUARY 2019
INTRODUCTION

The Transit-Friendly Streets Guide (TFS Guide) is a resource to support development of transit corridor and stop and station improvements. It supplements the strategies and actions in Chapter 3 of the Denver Moves: Transit plan. Elements presented in this guide are conceptual and will be further defined and evaluated during project studies and design. The TFS Guide also serves as an educational tool for Denver residents, community and business organizations, and implementation partners, providing information about the importance, benefits, and application of transit-supportive investments in Denver.
DENVER MOVES: TRANSIT PLAN

The TFS Guide is comprised of six sections, beginning with an overview and recommended improvements along the Transit Capital Investment Corridors followed by descriptions of transit improvement tools and strategies, their associated benefits, considerations for implementation, and examples from other cities in North America.

D-1 Transit Capital Investment Corridors: This section includes recommended improvements and estimated costs along each of the High- and Medium-Capacity Transit and Speed and Reliability Corridors.

D-2 Corridor, Stop, and Station Toolkit: The toolkit summarizes how the various types of corridor, stop/station, and access and connection improvements can be applied together at different contexts and scales depending on factors including land use, level of ridership, and type of corridor. Each improvement is discussed in more detail in Sections 3 through 6.

D-3 Corridor Improvements: These improvements can be applied along a full corridor and include dedicated transit lanes and signal priority to support reliable and frequent service along Denver’s transit corridors.

D-4 Stop and Station Improvements: Stop- and station-level improvements support a more comfortable passenger experience and integrate transit into communities. Many of the improvements listed in this section can also be applied corridor-wide.

D-5 Access and Connections to Transit: This section provides an overview of pedestrian, bicycle, parking, and shared mobility and on-demand mobility strategies that support safe and convenient access to transit.

D-6 Transit-Supportive Programs and Partnerships: Transit-supportive programs and partnerships can help to increase people’s understanding and awareness of transit.

The elements in this guide are conceptual. As typologies, priorities, and other implementation elements are further defined beginning in Denver Moves: Transit Phase 2, the TFS Guide can be updated to provide additional details and implementation guidance for staff and partners. Some improvements listed in the TFS Guide may require new policies, programs, and other resources to move forward.

ACHIEVING DENVER’S TRANSIT VISION TOGETHER

The City and County of Denver (the City) plays a key role in moving forward as many actions in Denver Moves: Transit as possible, depending on priorities, available funding, staffing, and other resources. However, successful implementation requires coordination, investments, and participation from partners including RTD and other local and regional agencies, advocacy and non-profit organizations, employers, and neighborhood organizations.
Denver’s Transit Capital Investment Corridors warrant the highest levels of investment based on community input and technical analysis. These corridors serve the most people, including Denver residents with the greatest need for transit. They also include the strongest connections between neighborhoods and points of interest, serve the highest densities of jobs, and have the potential to provide significant social and environmental benefits. The Transit Capital Investment Corridors are shown in Figure D-1.

The recommendations for these corridors are organized into three levels of investment: High-Capacity Transit, Medium-Capacity Transit, and Speed and Reliability. High- and Medium-Capacity Transit Corridors are served by higher-capacity services, such as bus rapid transit, together with improvements including dedicated transit lanes and enhanced stops and stations. Speed and Reliability Corridors include improvements such as transit signal priority to help transit move through the corridor faster and more reliably. The High-Capacity and Medium-Capacity Transit Corridors also inform the Blueprint Denver Transit Priority Streets, as described on page D-44.

This section includes corridor sheets that provide an overview of the recommended capital and service frequency improvements and cost estimates for each of the Transit Capital Investment Corridors. A summary of the corridors is provided in Figure D-2.
The existing local bus network and first and final mile services, as described in Big Move: Improve Access and Connections to Transit (Chapter 3), will be essential in connecting people to the Frequent Transit Network and Transit Capital Investment Corridors.
## Overview of Transit Capital Improvement Corridors

<table>
<thead>
<tr>
<th>Corridor</th>
<th>Length(^a) (Miles)</th>
<th>Low Level of Investment</th>
<th>Medium Level of Investment</th>
<th>High Level of Investment</th>
<th>Goal Area Scorecard(^c)</th>
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</table>

In 2018 dollars and does not include maintenance and operation costs. Future corridor studies and design projects, building on the guidance of Denver Moves: Transit, will provide a more in-depth evaluation of each corridor including defining the transit mode, alignment, and design and developing detailed costs for each corridor. The Peoria and Tower Speed and Reliability corridors are not shown in this table - these corridors were identified during the Neighborhood Planning Initiative (NPI) and will be further evaluated during future corridor studies and design projects.

Notes:
- a) Length used in Denver Moves: Transit analysis.
- b) Draft conceptual costs are for planning purposes only, in 2018 dollars. Typical costs per mile for Rapid Bus, BRT, and rail modes are informed by past or current projects funded through the Federal Transit Administration (FTA) programs. Enhanced bus costs per mile are based on conceptual quantities of improvements and unit costs (e.g., number of stops, traffic signal improvements, and bicycle/pedestrian features), and soft costs (e.g., design, administration, contingency); See Appendix E for details. The “high” level of investment for HCT corridors assumes rail (streetcar), while the other modes are rubber-tire bus.
- c) Goal area composite score from the Federal Transit Administration (FTA) programs. Enhanced bus costs per mile are based on conceptual quantities of improvements and unit costs (e.g., number of stops, traffic signal improvements, and bicycle/pedestrian features), and soft costs (e.g., design, administration, contingency); See Appendix E for details. The “high” level of investment for HCT corridors assumes rail (streetcar), while the other modes are rubber-tire bus.
- d) The Brighton corridor was evaluated as a portion of the Brighton/48th/Green Valley Ranch corridor. Brighton (Downtown to Colorado) is a Medium-Capacity Corridor, while the remainder is a Speed & Reliability Corridor.
**DENVER MOVES: TRANSIT PLAN**

## COLFAKX CORRIDOR

**BACKGROUND**

- **Corridor Type:** High-Capacity Transit
- **Length:** 9.0 miles
- **Sidewalk Coverage within 1/4-mile:** 70%
- **Existing Transit:** Routes 15, 15L (East Colfax), 16, 16L (West Colfax)

**Planning Background:**

- **A** Colfax Corridor Connections project (ongoing) is planning center-running dedicated BRT lanes and stop consolidation from Civic Center Station to Yosemite, and wider sidewalks from Colorado to Yosemite
- **B** East Colfax Corridor Plan (2004) recommends transit upgrades, higher density development, and pedestrian, bicycle, and streetscape improvements between Colorado and Broadway
- **C** Denver Vision Zero Action Plan (2017) identifies Colfax Avenue as a corridor on the High-Injury Network

**CORRIDOR MAP**

- **West Colfax**
- **East Colfax**

*Map shows existing conditions and improvement recommendations proposed through other plans/projects. The corridor routing is conceptual and does not represent actual bus routes. Future project studies and design will further define the Denver Moves: Transit recommendations including a more in-depth evaluation of each corridor, including defining the transit mode, alignment, and design, and developing details costs for each corridor. The level of investment for each type of corridor may change over time as priorities and resources are identified.*
**PROPOSED TRANSIT IMPROVEMENTS**

**TRANSIT RELIABILITY**
- Transit lanes (e.g., BAT lanes or exclusive transit lanes)
- Queue jumps/bypass lanes
- Transit signal priority

**ACCESS AND CONNECTIONS**
- Improve sidewalks and crossings

**STOPS AND STATIONS**
- Evaluate stop consolidation
- Enhanced amenities
- Off-board fare payment

**SENSE OF PLACE**
- Streetscape improvements including sidewalks, landscaping, and placemaking amenities

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**SERVICE SPAN AND FREQUENCY VISION**

Increase transit service frequency on weekdays to arrive:
- Every 5 to 10 minutes during peak hours
- Every 5 to 10 minutes during the rest of the day (until 10 p.m.)
- Every 30 minutes from 5 to 6 a.m. and 10 p.m. to 1 a.m.

Increase transit frequency on weekends to arrive:
- Every 15 minutes from 6 a.m. to 10 p.m.
- Every 30 minutes from 5 to 6 a.m. and 10 p.m. to 1 a.m.

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**ESTIMATED IMPROVEMENT COSTS**

**Potential Modes:** Bus Rapid Transit, Rail

**Estimated Cost:** $190 to $730 million

Draft conceptual costs for planning purposes only. Costs are in 2018 dollars and will be further defined during future corridor study and design projects. Rapid Bus, BRT, and rail costs per mile are informed by past or current projects funded through the Federal Transit Administration (FTA) programs. Higher end costs often include placemaking features and streetscape enhancements in addition to the core transit improvements.

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*Improvements will be further defined during future project studies and design.*

*The FTN is Denver’s vision for a network of transit corridors with frequent service. The FTN will be implemented in phases in coordination with RTD.*
DENVER MOVES: TRANSIT PLAN

BROADWAY/LINCOLN CORRIDOR

BACKGROUND

Corridor Type: High-Capacity Transit
Length: 6.3 miles
Sidewalk Coverage within 1/4-mile: 74%

Existing Transit:
• Routes: 0, 0L, additional routes north of 6th
• Infrastructure: 24-hour Business Access and Transit lanes on Broadway and northern portion of Lincoln

Planning Background:
A Denver Moves: Broadway/Lincoln Transit Improvements Study (2017-2018) transitioned existing peak-hour transit lanes to 24-hour lanes with new signage, pavement markings, and bus stop consolidation
B Denver Moves: Broadway/Lincoln Corridor Study (2016) identified multimodal access and connection improvements
C I-25 & Broadway Station Area Plan (2016) identifies the need for improved multimodal connections among modes, including a multi-use path and improved connections to the South Platte River Trail
D Golden Triangle Neighborhood Plan (2014) recommends enhanced transit and improved multimodal connections
E Denver Vision Zero Action Plan (2017) identifies Broadway and Lincoln as corridors on the High-Injury Network

If there was a BRT or Streetcar system with a dedicated lane that ran up and down Broadway/Lincoln from, say Blake St/RiNo to Alameda/1st Ave, I would gladly get rid of my car.

– Denver Moves: Transit Survey Participant

a. Map shows existing conditions and improvement recommendations proposed through other plans/projects. The corridor routing is conceptual and does not represent actual bus routes. Future project studies and design will further define the Denver Moves: Transit recommendations including a more in-depth evaluation of each corridor, including defining the transit mode, alignment, and design, and developing details costs for each corridor. The level of investment for each type of corridor may change over time as priorities and resources are identified.
BROADWAY/LINCOLN CORRIDOR
PROPOSED TRANSIT IMPROVEMENTS

TRANSIT RELIABILITY
■ Evaluate flex transit/parking lane along southern portion of Lincoln (Denver Moves Broadway/Lincoln)
■ Transit lanes (e.g., BAT lanes or exclusive transit lanes)
■ Queue jumps/bypass lanes
■ Transit signal priority

ACCESS AND CONNECTIONS
■ Improve multimodal connections to transit

STOPS AND STATIONS
■ Evaluate stop consolidation
■ Enhanced amenities
■ Off-board fare payment

SENSE OF PLACE
■ Streetscape improvements including sidewalks, landscaping, and placemaking amenities

SERVICE SPAN AND FREQUENCY VISION
Increase transit service frequency on weekdays to arrive:
■ Every 5 to 10 minutes during peak hours
■ Every 10 to 15 minutes during the rest of the day (until 10 p.m.)
■ Every 30 minutes from 5 to 6 a.m. and 10 p.m. to 1 a.m.
Increase transit frequency on weekends to arrive:
■ Every 15 minutes from 6 a.m. to 10 p.m.
■ Every 30 minutes from 5 to 6 a.m. and 10 p.m. to 1 a.m.

Weekday Frequency and Span of Service

ESTIMATED IMPROVEMENT COSTS
Potential Modes: Bus Rapid Transit, Rail
Estimated Cost: $130 to $510 million
Draft conceptual costs for planning purposes only. Costs are in 2018 dollars and will be further defined during future project studies and design. Rapid Bus, BRT, and rail costs per mile are informed by past or current projects funded through the Federal Transit Administration (FTA) programs. Higher end costs often include placemaking features and streetscape enhancements in addition to the core transit improvements.

b. Improvements will be further defined during future project studies and design.
c. The FTN is Denver’s vision for a network of transit corridors with frequent service. The FTN will be implemented in phases in coordination with RTD.
**DENVER MOVES: TRANSIT PLAN**

**SPEER-LEETSDALE CORRIDOR**

**BACKGROUND**

**Corridor Type:** High-Capacity Transit  
**Length:** 8.9 miles  
**Sidewalk Coverage within 1/4-mile:** 53%  
**Existing Transit:** Routes 1, 3, 83, 83D, 83L  

**Planning Background:**

A. Go Speer/Leetsdale (2017) identifies transit improvements including Business Access and Transit lanes, reversible peak-direction center transit lanes, transit signal priority, and pedestrian/bike improvements

B. Cherry Creek Area Plan (2012) recommends improved transit service to and through Cherry Creek

C. Denver Vision Zero Action Plan (2017) identifies Speer Boulevard and Leetsdale Drive as corridors on the High-Injury Network

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**CORRIDOR MAP**

- **Existing**
- **Rail line**
- **Key transit connection/destination**
- **Bike path**
- **No transit service today**
- **Improvements identified in other plans**

a. Map shows existing conditions and improvement recommendations proposed through other plans/projects. The corridor routing is conceptual and does not represent actual bus routes. Future project studies and design will further define the Denver Moves: Transit recommendations including a more in-depth evaluation of each corridor, including defining the transit mode, alignment, and design, and developing details costs for each corridor. The level of investment for each type of corridor may change over time as priorities and resources are identified.
**SPEER-LEETSDALE CORRIDOR PROPOSED TRANSIT IMPROVEMENTS**

**TRANSIT PRIORITY TREATMENTS**
- Business Access and Transit lanes
- Reversible peak-direction center transit lane
- Transit signal priority

**ACCESS**
- Complete gaps in sidewalk network
- Replace existing sidewalks with detached sidewalk and shared use path
- Improve connections to Cherry Creek Trail

**STOPS AND STATIONS**
- Enhanced and consolidated stops
- Implement mobility hubs

**SENSE OF PLACE**
- Provide trees and planters

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**SERVICE SPAN AND FREQUENCY VISION**

Increase transit service frequency on weekdays to arrive:
- Every 5 to 10 minutes during peak hours
- Every 10 to 15 minutes during the rest of the day (until 10 p.m.)
- Every 30 minutes from 5 to 6 a.m. and 10 p.m. to 1 a.m.

Increase transit frequency on weekends to arrive:
- Every 15 minutes from 6 a.m. to 10 p.m.
- Every 30 minutes from 5 to 6 a.m. and 10 p.m. to 1 a.m.

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**ESTIMATED IMPROVEMENT COSTS**

**Potential Modes:** Bus Rapid Transit, Rail

**Estimated Cost:** $180 to $720 million

Draft conceptual costs for planning purposes only. Costs are in 2018 dollars and will be further defined during future corridor study and design projects. Rapid Bus, BRT, and rail costs per mile are informed by past or current projects funded through the Federal Transit Administration (FTA) programs. Higher end costs often include placemaking features and streetscape enhancements in addition to the core transit improvements.

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b. Corridor routing is conceptual and does not represent actual bus routes. Improvements will be further defined during future project studies and design.

c. The FTN is Denver’s vision for a network of transit corridors with frequent service. The FTN will be implemented in phases in coordination with RTD.
**PARK CORRIDOR**

**BACKGROUND**
- **Corridor Type:** High-Capacity Transit
- **Length:** 1.4 miles
- **Sidewalk Coverage within 1/4-mile:** 81%
- **Existing Transit:** none

**Planning Background:**
- Denver Vision Zero Action Plan (2017) identifies Park Avenue as a corridor on the High-Injury Network

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**CORRIDOR MAP**

- [Map showing existing conditions and improvement recommendations proposed through other plans/projects.
- The corridor routing is conceptual and does not represent actual bus routes. Future project studies and design will further define the Denver Moves: Transit recommendations including a more in-depth evaluation of each corridor, including defining the transit mode, alignment, and design, and developing detailed costs for each corridor. The level of investment for each type of corridor may change over time as priorities and resources are identified. Corridor length reflects Colfax-Lawrence based on corridor evaluation, however map illustrates a possible connection further west to other corridors (e.g., 38th).]
PARK CORRIDOR

PROPOSED TRANSIT IMPROVEMENTS

TRANSIT RELIABILITY

- Transit lanes (e.g., BAT lanes or exclusive transit lanes)
- Evaluate couplet options with 22nd including possible HOV lane used by regional transit, and possible turnaround options
- Restructure service to utilize Park to provide connections to/through downtown

ACCESS AND CONNECTIONS

- Safe crossings serving transit stops

STOPS AND STATIONS

- Provide downtown transit connections and wayfinding

SENSE OF PLACE

- Streetscape improvements including sidewalk improvements, landscaping, and placemaking amenities

SERVICE SPAN AND FREQUENCY VISION

Increase transit service frequency on weekdays to arrive:

- Every 5 to 10 minutes during peak hours
- Every 10 to 15 minutes during the rest of the day (until 10 p.m.)
- Every 30 minutes from 5 to 6 a.m. and 10 p.m. to 1 a.m.

Increase transit frequency on weekends to arrive:

- Every 15 minutes from 6 a.m. to 10 p.m.
- Every 30 minutes from 5 to 6 a.m. and 10 p.m. to 1 a.m.

ESTIMATED IMPROVEMENT COSTS

Potential Modes: Bus Rapid Transit, Rail

Estimated Cost: $30 to $120 million

Draft conceptual costs for planning purposes only. Costs are in 2018 dollars and will be further defined during future corridor study and design projects. Enhanced bus costs are based on conceptual quantities of improvements and unit costs (e.g., number of stops, traffic signal improvements, and bicycle/pedestrian features), and soft costs (e.g., design, administration, contingency). Higher end costs often include placemaking features and streetscape enhancements in addition to the core transit improvements.

DENVER FTN STANDARD (Very Frequent)

SERVICE SPAN AND FREQUENCY VISION

Weekday Frequency and Span of Service

- Every 5 to 10 minutes during peak hours
- Every 10 to 15 minutes during the rest of the day (until 10 p.m.)
- Every 30 minutes from 5 to 6 a.m. and 10 p.m. to 1 a.m.

c. The FTN is Denver’s vision for a network of transit corridors with frequent service. The FTN will be implemented in phases in coordination with RTD.
S Federal Blvd is the most dangerous road in the entire city. If S Federal Blvd is not the preeminent focus for the city, then that undermines the city’s commitment to Vision Zero.

– Denver Moves: Transit Survey Participant

a. Map shows existing conditions and improvement recommendations proposed through other plans/projects. The corridor routing is conceptual and does not represent actual bus routes. Future project studies and design will further define the Denver Moves: Transit recommendations including a more in-depth evaluation of each corridor, including defining the transit mode, alignment, and design, and developing details costs for each corridor. The level of investment for each type of corridor may change over time as priorities and resources are identified.
**FEDERAL CORRIDOR**

**PROPOSED TRANSIT IMPROVEMENTS**

**TRANSIT RELIABILITY**
- Transit lanes (e.g., BAT lanes or exclusive transit lanes)
- Queue jumps/bypass lanes
- Transit signal priority

**ACCESS AND CONNECTIONS**
- Improve bike/pedestrian safety & access at major intersections and key destinations
- Improve regional trail crossings and connections
- Study alternative configurations to make the Colfax/Federal interchange more accessible for all modes
- Widen I-70 overpass sidewalks and improve intersections on either side

**STOPS AND STATIONS**
- Evaluate stop consolidation
- Off-board fare payment
- Mobility hub at Federal and Evans

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**SENSE OF PLACE**
- Streetscape improvements including sidewalks, landscaping, and placemaking amenities

**SERVICE SPAN AND FREQUENCY VISION**

Increase transit service frequency on weekdays to arrive:
- Every 5 to 10 minutes during peak hours
- Every 15 minutes during the rest of the day (until 10 p.m.)
- Every 30 minutes from 5 to 6 a.m. and 10 p.m. to 1 a.m.

Increase transit frequency on weekends to arrive:
- Every 15 minutes from 6 a.m. to 10 p.m.
- Every 30 minutes from 5 to 6 a.m. and 10 p.m. to 1 a.m.

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**ESTIMATED IMPROVEMENT COSTS**

**Potential Modes:** Bus Rapid Transit, Rail

**Estimated Cost:** $190 to $760 million

Draft conceptual costs for planning purposes only. Costs are in 2018 dollars and will be further defined during future corridor study and design projects. Rapid Bus, BRT, and rail costs per mile are informed by past or current projects funded through the Federal Transit Administration (FTA) programs. Higher end costs often include placemaking features and streetscape enhancements in addition to the core transit improvements.

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b. Improvements will be further defined during future project studies and design.

c. The FTN is Denver’s vision for a network of transit corridors with frequent service. The FTN will be implemented in phases in coordination with RTD. Federal is designated as a “Very Frequent” FTN corridor south of W. Colfax and as a “Frequent” FTN corridor north of W. Colfax.
COLORADO CORRIDOR

BACKGROUND

Corridor Type: High-Capacity Transit
Length: 9.5 miles
Sidewalk Coverage within 1/4-mile: 42%
Existing Transit: Route 40

Planning Background:

A Elyria and Swansea Neighborhood Plan (2015) recommends studying transit service and stop enhancements and bicycle/pedestrian enhancements to transform Colorado Blvd into a “complete street”

B Cherry Creek Area Plan (2012) recommends improved transit service to and through Cherry Creek, including further study of Colorado as a “Priority Transit Corridor” connecting urban centers and to East and Southeast Corridor rail service, and improving pedestrian and multimodal connections along and across Colorado

C University/Colorado Station Mobility Plan (2017) recommends narrowing intersections to shorten bicycle and pedestrian crossings of Colorado

D Denver Vision Zero Action Plan (2017) identifies Colorado Boulevard as a corridor on the High-Injury Network

BRT on Colorado Blvd. is a must. After Colfax, Colorado should be the next priority.

– Denver Moves: Transit Survey Participant

a. Map shows existing conditions and improvement recommendations proposed through other plans/projects. The corridor routing is conceptual and does not represent actual bus routes. Future project studies and design will further define the Denver Moves: Transit recommendations including a more in-depth evaluation of each corridor, including defining the transit mode, alignment, and design, and developing details costs for each corridor. The level of investment for each type of corridor may change over time as priorities and resources are identified.
COLORADO CORRIDOR
PROPOSED TRANSIT IMPROVEMENTS

TRANSPORT RELIABILITY
- Transit lanes (e.g., BAT lanes or exclusive transit lanes)
- Queue jumps/bypass lanes
- Transit signal priority

ACCESS AND CONNECTIONS
- Improve and complete gaps in sidewalk network
- Improve crossings
- Improved connections with bike lanes near City Park

STOPS AND STATIONS
- Evaluate stop consolidation
- Enhanced amenities

SENSE OF PLACE
- Streetscape improvements including sidewalks, landscaping, and placemaking amenities

SERVICE SPAN AND FREQUENCY VISION
Increase transit service frequency on weekdays to arrive:
- Every 5 to 10 minutes during peak hours
- Every 15 minutes during the rest of the day (until 10 p.m.)
- Every 30 minutes from 5 to 6 a.m. and 10 p.m. to 1 a.m.

Increase transit frequency on weekends to arrive:
- Every 15 minutes from 6 a.m. to 10 p.m.
- Every 30 minutes from 5 to 6 a.m. and 10 p.m. to 1 a.m.

ESTIMATED IMPROVEMENT COSTS
Potential Modes: Bus Rapid Transit, Rail

Estimated Cost: $200 to $770 million

Draft conceptual costs for planning purposes only. Costs are in 2018 dollars and will be further defined during future corridor study and design projects. Rapid Bus, BRT, and rail costs per mile are informed by past or current projects funded through the Federal Transit Administration (FTA) programs. Higher end costs often include placemaking features and streetscape enhancements in addition to the core transit improvements.

b. Improvements will be further defined during future project studies and design.

c. The FTN is Denver’s vision for a network of transit corridors with frequent service. The FTN will be implemented in phases in coordination with RTD.
38TH AVENUE CORRIDOR

BACKGROUND

Corridor Type: Medium-Capacity Transit
Length: 4.3 miles
Sidewalk Coverage within 1/4-mile: 76%
Existing Transit: Route 38
Planning Background:

A The Globeville Neighborhood Plan (2014) recommends improved multimodal connectivity and choices, safety improvements at intersections, and transit-supportive development

B The Denver Vision Zero Action Plan (2017) identifies 38th Avenue west of downtown as a corridor on the High-Injury Network

“38th needs to be made pedestrian friendly. There need to be more protected crossings so that people can easily get across the street to take the bus or visit businesses. Pedestrians and businesses would benefit from a green median and slower speeds.”

– Denver Moves: Transit Survey Participant

CORRIDOR MAP

a. Map shows existing conditions and improvement recommendations proposed through other plans/projects. The corridor routing is conceptual and does not represent actual bus routes. Future project studies and design will further define the Denver Moves: Transit recommendations including a more in-depth evaluation of each corridor, including defining the transit mode, alignment, and design, and developing details costs for each corridor. The level of investment for each type of corridor may change over time as priorities and resources are identified.
**38TH AVENUE CORRIDOR**

**PROPOSED TRANSIT IMPROVEMENTS**

- **TRANSIT RELIABILITY**
  - Transit lanes (business access and transit lanes or exclusive transit lanes)
  - Transit signal priority

- **ACCESS AND CONNECTIONS**
  - Intersection improvements per Globeville Neighborhood Plan

- **STOPS AND STATIONS**
  - Evaluate stop consolidation
  - Enhanced amenities

- **SENSE OF PLACE**
  - Streetscape improvements including sidewalks, landscaping, and placemaking amenities

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**SERVICE SPAN AND FREQUENCY VISION**

- Increase transit service frequency on weekdays to arrive:
  - Every 10 to 15 minutes during peak hours
  - Every 15 minutes during the rest of the day (until 10 p.m.)
  - Every 30 minutes from 5 to 6 a.m. and 10 p.m. to 1 a.m.

- Increase transit frequency on weekends to arrive:
  - Every 15 minutes from 6 a.m. to 10 p.m.
  - Every 30 minutes from 5 to 6 a.m. and 10 p.m. to 1 a.m.

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**ESTIMATED IMPROVEMENT COSTS**

**Potential Modes:** Rapid Bus, Bus Rapid Transit

**Estimated Cost:** $22 to $90 million

Draft conceptual costs for planning purposes only. Costs are in 2018 dollars and will be further defined during future project studies and design projects. Rapid Bus, BRT, and rail costs per mile are informed by past or current projects funded through the Federal Transit Administration (FTA) programs. Higher end costs often include placemaking features and streetscape enhancements in addition to the core transit improvements.

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b. Improvements will be further defined during future project studies and design.

c. The FTN is Denver’s vision for a network of transit corridors with frequent service. The FTN will be implemented in phases in coordination with RTD.
DENVER MOVES: TRANSIT PLAN

ALAMEDA CORRIDOR

BACKGROUND

Corridor Type: Medium-Capacity Transit
Length: 10.1 miles
Sidewalk Coverage within 1/4-mile: 62%
Existing Transit: Routes 3, 3L, 4

Planning Background:

A The Westwood Neighborhood Plan (2016) recommends improvements to sidewalks, bike and pedestrian crossings, transit stops, the streetscape, and enhanced bus priority and capacity along major transit streets such as Alameda

B The Alameda Station Area Plan (2009) recommends improved sidewalks and other bike and pedestrian enhancements

C Transit Oriented Denver (2014) recommends transit-oriented development in the Alameda Station area

D The Cherry Creek Area Plan (2012) recommends enhancing transit service on priority corridors, including Alameda, that serve regional connections, such as, RTD’s East and Southeast corridor rail lines

E Go Speer/Leetsdale (2017) recommends a center-running reversible managed transit lane from the Cherry Creek Trail to Leetsdale

F Denver Vision Zero Action Plan (2017) identifies Alameda as a High-Injury Street

“ I know that the ridership and employability for the people living along the Federal and Alameda corridor would be strongly supported by any RTD enhancements. The local community would be strengthened. ”

– Denver Moves: Transit Survey Participant

CORRIDOR MAP

a. Map shows existing conditions and improvement recommendations proposed through other plans/projects. The corridor routing is conceptual and does not represent actual bus routes. Future project studies and design will further define the Denver Moves: Transit recommendations including a more in-depth evaluation of each corridor, including defining the transit mode, alignment, and design, and developing details costs for each corridor. The level of investment for each type of corridor may change over time as priorities and resources are identified.
ALAMEDA CORRIDOR
PROPOSED TRANSIT IMPROVEMENTS

TRANSPORT RELIABILITY
- Transit lanes (business access and transit lanes or exclusive transit lanes)
- Queue jumps/bypass lanes
- Transit signal priority

ACCESS AND CONNECTIONS
- Evaluate multimodal access across Cherry Creek
- Ensure direct bus routing and improved bike/pedestrian circulation
- Complete gaps in sidewalk network

STOPS AND STATIONS
- Evaluate stop consolidation
- Enhanced amenities

SENSE OF PLACE
- Streetscape improvements including sidewalks, landscaping, and placemaking amenities

SERVICE SPAN AND FREQUENCY VISION
Increase transit service frequency on weekdays to arrive:
- Every 5 to 10 minutes during peak hours
- Every 15 minutes during the rest of the day (until 10 p.m.)
- Every 30 minutes from 5 to 6 a.m. and 10 p.m. to 1 a.m.

Increase transit frequency on weekends to arrive:
- Every 15 minutes from 6 a.m. to 10 p.m.
- Every 30 minutes from 5 to 6 a.m. and 10 p.m. to 1 a.m.

ESTIMATED IMPROVEMENT COSTS
Potential Modes: Rapid Bus, Bus Rapid Transit

Estimated Cost: $51 to $210 million

Draft conceptual costs for planning purposes only. Costs are in 2018 dollars and will be further defined during future corridor study and design projects. Rapid Bus, BRT, and rail costs per mile are informed by past or current projects funded through the Federal Transit Administration (FTA) programs. Higher end costs often include placemaking features and streetscape enhancements in addition to the core transit improvements.

b. Improvements will be further defined during future project studies and design.

APPENDIX D: TRANSIT-FRIENDLY STREETS GUIDE
DENVER MOVES: TRANSIT PLAN

MISSISSIPPI CORRIDOR

BACKGROUND

Corridor Type: Medium-Capacity Transit
Length: 11.1 miles
Sidewalk Coverage within 1/4-mile: 53%
Existing Transit: Routes 11, 14

Planning Background:

A. The Westwood Neighborhood Plan (2016) recommends intersection improvements and a bikeway between Sheridan Blvd and Irving Street

B. I-25 & Broadway Station Area Plan (2016) identifies the need for improved multimodal connections among modes, including a multi-use path and improved connections to the South Platte River Trail

C. The Denver Vision Zero Action Plan (2017) identifies Mississippi Avenue between Federal Blvd. and S. Lincoln as a corridor on the High-Injury Network

“Denver should invest in the southwest part of the city because it has largely been ignored. A lot of low income citizens in this area would benefit from better access to public transportation.”

– Denver Moves: Transit Survey Participant

CORRIDOR MAP

a. Map shows existing conditions and improvement recommendations proposed through other plans/projects. The corridor routing is conceptual and does not represent actual bus routes. Future project studies and design will further define the Denver Moves: Transit recommendations including a more in-depth evaluation of each corridor, including defining the transit mode, alignment, and design, and developing details costs for each corridor. The level of investment for each type of corridor may change over time as priorities and resources are identified.
MISSISSIPPI CORRIDOR
PROPOSED TRANSIT IMPROVEMENTS

TRANSLIT RELIABILITY
- Transit lanes (business access and transit lanes or exclusive transit lanes)
- Transit signal priority

ACCESS AND CONNECTIONS
- Intersection improvements and neighborhood bikeway/bike lanes between Sheridan Blvd and Irving Street per Westwood Neighborhood Plan
- Safe crossings serving transit stops

STOPS AND STATIONS
- Evaluate stop consolidation
- Enhanced amenities

SENSE OF PLACE
- Streetscape improvements including sidewalks, landscaping, and placemaking amenities

SERVICE SPAN AND FREQUENCY VISION
Increase transit service frequency on weekdays to arrive:
- Every 10 to 15 minutes during peak hours
- Every 15 minutes during the rest of the day (until 10 p.m.)
- Every 30 minutes from 5 to 6 a.m. and 10 p.m. to 1 a.m.

Increase transit frequency on weekends to arrive:
- Every 15 minutes from 6 a.m. to 10 p.m.
- Every 30 minutes from 5 to 6 a.m. and 10 p.m. to 1 a.m.

ESTIMATED IMPROVEMENT COSTS
Potential Modes: Rapid Bus, Bus Rapid Transit

Estimated Cost: $56 to $230 million
Draft conceptual costs for planning purposes only. Costs are in 2018 dollars and will be further defined during future corridor study and design projects. Rapid Bus, BRT, and rail costs per mile are informed by past or current projects funded through the Federal Transit Administration (FTA) programs. Higher end costs often include placemaking features and streetscape enhancements in addition to the core transit improvements.

b. Improvements will be further defined during future project studies and design.

c. The FTN is Denver’s vision for a network of transit corridors with frequent service. The FTN will be implemented in phases in coordination with RTD.
**DENVER MOVES: TRANSIT PLAN**

**JEWEL/EVANS/ILIFF CORRIDOR**

**BACKGROUND**

**Corridor Type:** Medium-Capacity Transit

**Length:** 8.3 miles

**Sidewalk Coverage within 1/4-mile:** 61%

**Existing Transit:** Route 21

**Planning Background:**

A. The Evans Station Area Plan (2009) recommends pedestrian and bicycle connections and amenity improvements, multimodal street design, and enhanced transit corridors


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"Service needs to be increased in southwest Denver. Trips take much longer and frequency is once ever half hour or hour on some lines."

— Denver Moves: Transit Survey Participant

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**CORRIDOR MAP**

- Map shows existing conditions and improvement recommendations proposed through other plans/projects. The corridor routing is conceptual and does not represent actual bus routes. Future project studies and design will further define the Denver Moves: Transit recommendations including a more in-depth evaluation of each corridor, including defining the transit mode, alignment, and design, and developing details costs for each corridor. The level of investment for each type of corridor may change over time as priorities and resources are identified.
JEWEL/EVANS/ILIFF CORRIDOR
PROPOSED TRANSIT IMPROVEMENTS

TRANSIT RELIABILITY
- Transit lanes (business access and transit lanes or exclusive transit lanes)
- Transit signal priority

ACCESS AND CONNECTIONS
- Improve walking and crossing conditions along western corridor
- Improve connections with South Platte River Trail

STOPS AND STATIONS
- Evaluate stop consolidation
- Enhanced amenities

SENSE OF PLACE
- Streetscape improvements including sidewalks, landscaping, and placemaking amenities

SERVICE SPAN AND FREQUENCY VISION
Increase transit service frequency on weekdays to arrive:
- Every 10 to 15 minutes during peak hours
- Every 15 minutes during the rest of the day (until 10 p.m.)
- Every 30 minutes from 5 to 6 a.m. and 10 p.m. to 1 a.m.

Increase transit frequency on weekends to arrive:
- Every 15 minutes from 6 a.m. to 10 p.m.
- Every 30 minutes from 5 to 6 a.m. and 10 p.m. to 1 a.m.

ESTIMATED IMPROVEMENT COSTS

Potential Modes: Rapid Bus, Bus Rapid Transit

Estimated Cost: $42 to $170 million

Draft conceptual costs for planning purposes only. Costs are in 2018 dollars and will be further defined during future corridor study and design projects. Rapid Bus, BRT, and rail costs per mile are informed by past or current projects funded through the Federal Transit Administration (FTA) programs. Higher end costs often include placemaking features and streetscape enhancements in addition to the core transit improvements.

b. Improvements will be further defined during future project studies and design.

c. The FTN is Denver’s vision for a network of transit corridors with frequent service. The FTN will be implemented in phases in coordination with RTD.
DENVER MOVES: TRANSIT PLAN

MARTIN LUTHER KING CORRIDOR

BACKGROUND

Corridor Type: Medium-Capacity Transit

Length: 8.3 miles

Sidewalk Coverage within 1/4-mile: 53%

Existing Transit: Route 43

“" I hope we have more light rail or even trolley on major streets, like on MLK Blvd, Colorado Blvd, York, Colfax, etc. “”

– Denver Moves: Transit Survey Participant

CORRIDOR MAP

a. Map shows existing conditions and improvement recommendations proposed through other plans/projects. The corridor routing is conceptual and does not represent actual bus routes. Future project studies and design will further define the Denver Moves: Transit recommendations including a more in-depth evaluation of each corridor, including defining the transit mode, alignment, and design, and developing details costs for each corridor. The level of investment for each type of corridor may change over time as priorities and resources are identified.
MARTIN LUTHER KING CORRIDOR
PROPOSED TRANSIT IMPROVEMENTS

TRANSIT RELIABILITY
- Queue jumps/bypass lanes
- Transit signal priority

ACCESS AND CONNECTIONS
- Improve sidewalks and complete sidewalk gaps
- Safe crossings serving transit stops between widely-spaced traffic signals
- Shared bus-bike lanes may be used to bridge on-street bike facility gaps

STOPS AND STATIONS
- Evaluate stop consolidation
- Enhanced amenities

SENSE OF PLACE
- Streetscape improvements including sidewalks, landscaping, and placemaking amenities

SERVICE SPAN AND FREQUENCY VISION
Increase transit service frequency on weekdays to arrive:
- Every 10 to 15 minutes during peak hours
- Every 15 minutes during the rest of the day (until 10 p.m.)
- Every 30 minutes from 5 to 6 a.m. and 10 p.m. to 1 a.m.

Increase transit frequency on weekends to arrive:
- Every 15 minutes from 6 a.m. to 10 p.m.
- Every 30 minutes from 5 to 6 a.m. and 10 p.m. to 1 a.m.

ESTIMATED IMPROVEMENT COSTS
Potential Modes: Rapid Bus, Bus Rapid Transit

Estimated Cost: $42 to $170 million

Draft conceptual costs for planning purposes only. Costs are in 2018 dollars and will be further defined during future corridor study and design projects. Rapid Bus, BRT, and rail costs per mile are informed by past or current projects funded through the Federal Transit Administration (FTA) programs. Higher end costs often include placemaking features and streetscape enhancements in addition to the core transit improvements.

b. Improvements will be further defined during future project studies and design.

c. The FTN is Denver’s vision for a network of transit corridors with frequent service. The FTN will be implemented in phases in coordination with RTD.
We need a grid of high-frequency bus routes with 10-minute headways throughout the day. In a word, make the buses reliable enough that people don’t have to wonder when or even whether the next bus will come.

– Denver Moves: Transit Survey Participant

a. Map shows existing conditions and improvement recommendations proposed through other plans/projects. The corridor routing is conceptual and does not represent actual bus routes. Future project studies and design will further define the Denver Moves: Transit recommendations including a more in-depth evaluation of each corridor, including defining the transit mode, alignment, and design, and developing details costs for each corridor. The level of investment for each type of corridor may change over time as priorities and resources are identified.
UNIVERSITY CORRIDOR

PROPOSED TRANSIT IMPROVEMENTS

TRANSPORT RELIABILITY
- Transit lanes (e.g., BAT lanes or exclusive transit lanes)
- Queue jumps/bypass lanes
- Transit signal priority

ACCESS AND CONNECTIONS
- Detached sidewalks and enhanced crossings

STOPS AND STATIONS
- Evaluate stop consolidation
- Enhanced amenities

SENSE OF PLACE
- Streetscape improvements including sidewalks, landscaping, and placemaking amenities

SERVICE SPAN AND FREQUENCY VISION
Increase transit service frequency on weekdays to arrive:
- Every 10 to 15 minutes during peak hours
- Every 15 minutes during the rest of the day (until 10 p.m.)
- Every 30 minutes from 5 to 6 a.m. and 10 p.m. to 1 a.m.

Increase transit frequency on weekends to arrive:
- Every 15 minutes from 6 a.m. to 10 p.m.
- Every 30 minutes from 5 to 6 a.m. and 10 p.m. to 1 a.m.

Weekday Frequency and Span of Service

ESTIMATED IMPROVEMENT COSTS
Potential Modes: Rapid Bus, Bus Rapid Transit

Estimated Cost: $45 to $180 million

Draft conceptual costs for planning purposes only. Costs are in 2018 dollars and will be further defined during future corridor study and design projects. Rapid Bus, BRT, and rail costs per mile are informed by past or current projects funded through the Federal Transit Administration (FTA) programs. Higher end costs often include placemaking features and streetscape enhancements in addition to the core transit improvements.
DENVER MOVES: TRANSIT PLAN

6TH/8TH CORRIDOR

BACKGROUND
Corridor Type: Speed & Reliability
Length: 8.3 miles
Sidewalk Coverage within 1/4-mile: 63%
Existing Transit: Route 6
Planning Background:

La Alma/Lincoln Park Neighborhood Plan (2010) recommends improved bicycle and pedestrian connections, expanded bus service serving the station, and enhanced bus stops

Connectivity to transit via walking and biking should be a priority with emphasis on attractive corridors that people want to be on, which connect to the surrounding area and are not blocked by railroad tracks, highways, or poor sidewalk continuity.

— Denver Moves: Transit Survey Participant

CORRIDOR MAP

a. Map shows existing conditions and improvement recommendations proposed through other plans/projects. The corridor routing is conceptual and does not represent actual bus routes. Future project studies and design will further define the Denver Moves: Transit recommendations including a more in-depth evaluation of each corridor, including defining the transit mode, alignment, and design, and developing details costs for each corridor. The level of investment for each type of corridor may change over time as priorities and resources are identified.
6TH/8TH CORRIDOR
PROPOSED TRANSIT IMPROVEMENTS

TRANSHIP RELIABILITY
- Queue jumps/bypass lanes
- Transit signal priority

ACCESS AND CONNECTIONS
- Improve sidewalks
- Improve crossings serving transit

STOPS AND STATIONS
- Evaluate stop consolidation
- Enhanced amenities at high-ridership stops

SENSE OF PLACE
- Streetscape improvements including sidewalks and landscaping

SERVICE SPAN AND FREQUENCY VISION
Increase transit service frequency on weekdays to arrive:
- Every 10 to 15 minutes during peak hours
- Every 15 minutes during the rest of the day (until 10 p.m.)
- Every 30 minutes from 5 to 6 a.m. and 10 p.m. to 1 a.m.

Increase transit frequency on weekends to arrive:
- Every 15 minutes from 6 a.m. to 10 p.m.
- Every 30 minutes from 5 to 6 a.m. and 10 p.m. to 1 a.m.

Weekday Frequency and Span of Service

ESTIMATED IMPROVEMENT COSTS

Potential Modes: Enhanced Bus

Estimated Cost: $10 to $42 million

Draft conceptual costs for planning purposes only. Costs are in 2018 dollars and will be further defined during future project studies and design projects. Enhanced bus costs are based on conceptual quantities of improvements and unit costs (e.g., number of stops, traffic signal improvements, and bicycle/pedestrian features), and soft costs (e.g., design, administration, contingency). Higher end costs often include placemaking features and streetscape enhancements in addition to the core transit improvements.

b. Improvements will be further defined during future project studies and design.

c. The FTN is Denver’s vision for a network of transit corridors with frequent service. The FTN will be implemented in phases in coordination with RTD.
QUEBEC CORRIDOR

BACKGROUND

Corridor Type: Speed & Reliability

Length: 12.3 miles

Sidewalk Coverage within 1/4-mile: 58%

Existing Transit: Route 73. Portions served by Routes 37 and 88, and various other routes.

Planning Background:

A Quebec Street Multimodal Improvement Project (ongoing) recommends sidewalk and crossing improvements and improved bus stops between 6th and 26th Avenues

B Eastside Mobility Plan (2010) recommends sidewalk, intersection, and bus stop improvements, and enhanced transit frequency and connections

C Denver Vision Zero Action Plan (2017) identifies Quebec Street north of Alameda as a corridor on the High-Injury Network

Sidewalks and pedways encourage people to use public transportation. Crossing Quebec by foot is intimidating with 8 lanes and constant traffic. Not to mention, North East Park Hill has inadequate sidewalks.

– Denver Moves: Transit Survey Participant

a. Map shows existing conditions and improvement recommendations proposed through other plans/projects. The corridor routing is conceptual and does not represent actual bus routes. Future project studies and design will further define the Denver Moves: Transit recommendations including a more in-depth evaluation of each corridor, including defining the transit mode, alignment, and design, and developing details costs for each corridor. The level of investment for each type of corridor may change over time as priorities and resources are identified.
**QUEBEC CORRIDOR**

**PROPOSED TRANSIT IMPROVEMENTS**

**TRANSIT RELIABILITY**
- Queue jumps/bypass lanes
- Transit signal priority

**ACCESS AND CONNECTIONS**
- Complete gaps in the sidewalk network
- Add mid-block crossings

**STOPS AND STATIONS**
- Evaluate stop consolidation
- Enhanced amenities at high-ridership stops

**SENSE OF PLACE**
- Streetscape improvements including sidewalks and landscaping

**SERVICE SPAN AND FREQUENCY VISION**

Increase transit service frequency on weekdays to arrive:
- Every 10 to 15 minutes during peak hours
- Every 15 minutes during the rest of the day (until 10 p.m.)
- Every 30 minutes from 5 to 6 a.m. and 10 p.m. to 1 a.m.

Increase transit frequency on weekends to arrive:
- Every 15 minutes from 6 a.m. to 10 p.m.
- Every 30 minutes from 5 to 6 a.m. and 10 p.m. to 1 a.m.

**ESTIMATED IMPROVEMENT COSTS**

**Potential Modes:** Enhanced Bus

**Estimated Cost:** $15 to $62 million

Draft conceptual costs for planning purposes only. Costs are in 2018 dollars and will be further defined during future corridor study and design projects. Enhanced bus costs are based on conceptual quantities of improvements and unit costs (e.g., number of stops, traffic signal improvements, and bicycle/pedestrian features), and soft costs (e.g., design, administration, contingency). Higher end costs often include placemaking features and streetscape enhancements in addition to the core transit improvements.

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b. Improvements will be further defined during future project studies and design.

c. The FTN is Denver’s vision for a network of transit corridors with frequent service. The FTN will be implemented in phases in coordination with RTD.
DENVER MOVES: TRANSIT PLAN

17TH/18TH AND 22ND/23RD CORRIDOR

BACKGROUND

Corridor Type: Speed & Reliability
Length: 6.2 miles
Sidewalk Coverage within 1/4-mile: 65%
Existing Transit: Route 20
Planning Background:

A Denver Vision Zero Action Plan (2017) identifies 17th Avenue as a corridor on the High-Injury Network

"I think we need local circulators in NW Denver... Helps with parking and gets people using transit for small commutes."

– Denver Moves: Transit Survey Participant

CORRIDOR MAP*

a. Map shows existing conditions and improvement recommendations proposed through other plans/projects. The corridor routing is conceptual and does not represent actual bus routes. Future project studies and design will further define the Denver Moves: Transit recommendations including a more in-depth evaluation of each corridor, including defining the transit mode, alignment, and design, and developing details costs for each corridor. The level of investment for each type of corridor may change over time as priorities and resources are identified.
17TH/18TH AND 22ND/23RD CORRIDOR PROPOSED TRANSIT IMPROVEMENTS

**TRANSIT RELIABILITY**
- Queue jumps/bypass lanes
- Transit signal priority

**ACCESS AND CONNECTIONS**
- Improve sidewalks
- Improve crossings serving transit

**STOPS AND STATIONS**
- Evaluate stop consolidation
- Enhanced amenities at high-ridership stops

**SENSE OF PLACE**
- Streetscape improvements including sidewalks and landscaping

**SERVICE SPAN AND FREQUENCY VISION**
Increase transit service frequency on weekdays to arrive:
- Every 10 to 15 minutes during peak hours
- Every 15 minutes during the rest of the day (until 10 p.m.)
- Every 30 minutes from 5 to 6 a.m. and 10 p.m. to 1 a.m.

Increase transit frequency on weekends to arrive:
- Every 15 minutes from 6 a.m. to 10 p.m.
- Every 30 minutes from 5 to 6 a.m. and 10 p.m. to 1 a.m.

**ESTIMATED IMPROVEMENT COSTS**

**Potential Modes:** Enhanced Bus

**Estimated Cost:** $8 to $32 million

Draft conceptual costs for planning purposes only. Costs are in 2018 dollars and will be further defined during future corridor study and design projects. Enhanced bus costs are based on conceptual quantities of improvements and unit costs (e.g., number of stops, traffic signal improvements, and bicycle/pedestrian features), and soft costs (e.g., design, administration, contingency). Higher end costs often include placemaking features and streetscape enhancements in addition to the core transit improvements.

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b. Improvements will be further defined during future project studies and design.

c. The FTN is Denver’s vision for a network of transit corridors with frequent service. The FTN will be implemented in phases in coordination with RTD.
**BACKGROUND**

**Corridor Type:** Medium-Capacity Transit on Brighton, Speed & Reliability on 48th/Green Valley Ranch

**Length:** 2.5 miles (downtown-Colorado) and 13.7 miles (Colorado to Green Valley Ranch)

**Sidewalk Coverage within 1/4-mile:** 65%

**Existing Transit:** Routes 37, 42, 44, 45, 48

**Planning Background:**

**A** Brighton Boulevard Corridor Redevelopment Project (2018) will implement streetscape improvements and a continuous sidewalk and cycle track on Brighton

**B** Far Northeast Area Plan (est. 2018) preliminary findings identify a strong community need for improved transit service, connections (first/final mile) to transit, and multimodal improvements

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**CORRIDOR MAP**

I would like to see a walkway or bike trail linking GVR Blvd to 40th Ave.

– Denver Moves: Transit Survey Participant

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a. Map shows existing conditions and improvement recommendations proposed through other plans/projects. The corridor routing is conceptual and does not represent actual bus routes. Future project studies and design will further define the Denver Moves: Transit recommendations including a more in-depth evaluation of each corridor, including defining the transit mode, alignment, and design, and developing details costs for each corridor. The level of investment for each type of corridor may change over time as priorities and resources are identified.
**BRIGHTON/48TH/GREEN VALLEY RANCH CORRIDOR**

**PROPOSED TRANSIT IMPROVEMENTS**

**TRANSIT RELIABILITY**
- Queue jumps/bypass lanes
- Transit signal priority

**ACCESS AND CONNECTIONS**
- Improve crossings serving transit stops
- Improve connections with trail system in the eastern part of the corridor, and to new bike facilities near downtown
- Improve multimodal connections to transit, including completing sidewalk gaps
- Improve transit service connections to key destinations, neighborhoods and stations in the far NE communities

**STOPS AND STATIONS**
- Enhanced amenities at high-ridership stops
- Consolidate stops where a safe crossing cannot be provided

**SENSE OF PLACE**
- Streetscape improvements including sidewalks and landscaping

**SERVICE SPAN AND FREQUENCY VISION**

Increase transit service frequency on weekdays to arrive:
- Every 10 to 15 minutes during peak hours
- Every 15 minutes during the rest of the day (until 10 p.m.)
- Every 30 minutes from 5 to 6 a.m. and 10 p.m. to 1 a.m.

Increase transit frequency on weekends to arrive:
- Every 15 minutes from 6 a.m. to 10 p.m.
- Every 30 minutes from 5 to 6 a.m. and 10 p.m. to 1 a.m.

### Weekday Frequency and Span of Service

![Service Frequency Graph](image)

**ESTIMATED IMPROVEMENT COSTS**

**Potential Modes:** Enhanced Bus (48th/Green Valley Ranch), Rapid Bus, Bus Rapid Transit (Brighton)

**Estimated Cost:** $30 to $129 million

Estimated costs are the total of the Brighton (Medium-Capacity Corridor) and 48th/Green Valley Ranch (Speed & Reliability Corridor) portions of the corridor.

Draft conceptual costs for planning purposes only. Costs are in 2018 dollars and will be further defined during future corridor study and design projects. Enhanced bus costs are based on conceptual quantities of improvements and unit costs (e.g., number of stops, traffic signal improvements, and bicycle/pedestrian features), and soft costs (e.g., design, administration, contingency). Rapid Bus, BRT, and rail costs per mile are informed by past or current projects funded through the Federal Transit Administration (FTA) programs. Higher end costs often include placemaking features and streetscape enhancements in addition to the core transit improvements.

**b.** Improvements will be further defined during future project studies and design.

**c.** The FTN is Denver’s vision for a network of transit corridors with frequent service. The FTN will be implemented in phases in coordination with RTD. Brighton is designated as a “Very Frequent” FTN corridor (west of Colorado); the remainder of the corridor (east of Colorado) is designated as a “Frequent” FTN corridor.
DENVER MOVES: TRANSIT PLAN

26TH AVENUE CORRIDOR

BACKGROUND
Corridor Type: Speed & Reliability
Length: 3.6 miles
Sidewalk Coverage within 1/4-mile: 51%
Existing Transit: Routes 28, 28B

"Can’t say enough about need for frequent and reliable public transportation. Frequency of 30 min + is not acceptable for inner city transport."

– Denver Moves: Transit Survey Participant

CORRIDOR MAP*

* Map shows existing conditions and improvement recommendations proposed through other plans/projects. The corridor routing is conceptual and does not represent actual bus routes. Future project studies and design will further define the Denver Moves: Transit recommendations including a more in-depth evaluation of each corridor, including defining the transit mode, alignment, and design, and developing details costs for each corridor. The level of investment for each type of corridor may change over time as priorities and resources are identified.
26TH AVENUE CORRIDOR
PROPOSED TRANSIT IMPROVEMENTS

**TRANSIT RELIABILITY**
- Queue jumps/bypass lanes
- Transit signal priority

**ACCESS AND CONNECTIONS**
- Improve and complete gaps in sidewalks
- Improve crossings serving transit

**STOPS AND STATIONS**
- Evaluate stop consolidation
- Enhanced amenities at high-ridership stops

**SENSE OF PLACE**
- Streetscape improvements including sidewalks and landscaping

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**SERVICE SPAN AND FREQUENCY VISION**

Increase transit service frequency on weekdays to arrive:
- Every 10 to 15 minutes during peak hours
- Every 15 minutes during the rest of the day (until 10 p.m.)
- Every 30 minutes from 5 to 6 a.m. and 10 p.m. to 1 a.m.

Increase transit frequency on weekends to arrive:
- Every 15 minutes from 6 a.m. to 10 p.m.
- Every 30 minutes from 5 to 6 a.m. and 10 p.m. to 1 a.m.

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**ESTIMATED IMPROVEMENT COSTS**

**Potential Modes:** Enhanced Bus

**Estimated Cost:** $5 to $19 million

Draft conceptual costs for planning purposes only. Costs are in 2018 dollars and will be further defined during future corridor study and design projects. Enhanced bus costs are based on conceptual quantities of improvements and unit costs (e.g., number of stops, traffic signal improvements, and bicycle/pedestrian features), and soft costs (e.g., design, administration, contingency). Higher end costs often include placemaking features and streetscape enhancements in addition to the core transit improvements.

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b. Improvements will be further defined during future project studies and design.

c. The FTN is Denver’s vision for a network of transit corridors with frequent service. The FTN will be implemented in phases in coordination with RTD.
SHERIDAN CORRIDOR

BACKGROUND
Corridor Type: Speed and Reliability
Length: 10.8 miles
Sidewalk Coverage within 1/4-mile: 44%
Existing Transit: Routes 50, 51
Planning Background:
A Westwood Neighborhood Plan (2016) recommends pedestrian improvements and bus stop enhancements
B Sheridan Station Area Plan (2008) recommends pedestrian infrastructure and connection improvements along and across Sheridan Blvd
C Denver Vision Zero Action Plan identifies Sheridan as a High-Injury street

CORRIDOR MAP

I believe the most important transit priority for Denver’s future is to ensure the city is accessible and affordable for those living in disadvantaged areas. I selected Federal, Sheridan, and Colfax as high priorities for these reasons.

– Denver Moves: Transit Survey Participant

a. Map shows existing conditions and improvement recommendations proposed through other plans/projects. The corridor routing is conceptual and does not represent actual bus routes. Future project studies and design will further define the Denver Moves: Transit recommendations including a more in-depth evaluation of each corridor, including defining the transit mode, alignment, and design, and developing details costs for each corridor. The level of investment for each type of corridor may change over time as priorities and resources are identified.
**SHERIDAN CORRIDOR**

**PROPOSED TRANSIT IMPROVEMENTS**

**TRANSIT RELIABILITY**
- Transit lanes (business access and transit lanes or exclusive transit lanes)
- Queue jumps/bypass lanes
- Transit signal priority

**ACCESS AND CONNECTIONS**
- Evaluate multimodal access across Cherry Creek
- Ensure direct bus routing and improved bike/pedestrian circulation
- Complete gaps in sidewalk network

**STOPS AND STATIONS**
- Evaluate stop consolidation
- Enhanced amenities

**SENSE OF PLACE**
- Streetscape improvements (sidewalks, landscaping, and placemaking amenities)

---

**SERVICE SPAN AND FREQUENCY VISION**

Increase transit service frequency on weekdays to arrive:
- Every 10 to 15 minutes during peak hours
- Every 15 minutes during the rest of the day (until 10 p.m.)
- Every 30 minutes from 5 to 6 a.m. and 10 p.m. to 1 a.m.

Increase transit frequency on weekends to arrive:
- Every 15 minutes from 6 a.m. to 10 p.m.
- Every 30 minutes from 5 to 6 a.m. and 10 p.m. to 1 a.m.

**ESTIMATED IMPROVEMENT COSTS**

**Potential Modes:** Enhanced Bus

**Estimated Cost:** $13 to $54 million

Draft conceptual costs for planning purposes only. Costs are in 2018 dollars and will be further defined during future corridor study and design projects. Enhanced bus costs are based on conceptual quantities of improvements and unit costs (e.g., number of stops, traffic signal improvements, and bicycle/pedestrian features), and soft costs (e.g., design, administration, contingency). Higher end costs often include placemaking features and streetscape enhancements in addition to the core transit improvements.

---

b. Improvements will be further defined during future project studies and design.

c. The FTN is Denver’s vision for a network of transit corridors with frequent service. The FTN will be implemented in phases in coordination with RTD.
DENVER MOVES: TRANSIT PLAN

HAMPDEN CORRIDOR

BACKGROUND

Corridor Type: Speed & Reliability
Length: 5.0 miles
Sidewalk Coverage within 1/4-mile: 38%
Existing Transit: Routes 12, 27, 35, 40, 51, 65, 105

Planning Background:

A Hampden Avenue Corridor Study (2018) recommends safety and multimodal facility improvements, including a basic set of amenities at all transit stops, enhanced amenities at high ridership transit stops, completion of the sidewalk network, and safer bicycle and pedestrian crossings.


I live west of Federal and east of Sheridan. Getting in/out of that area is difficult using the current system. Hampden is pretty jammed going east and a ton of people use that artery to go to the DTC. – Denver Moves: Transit Survey Participant

CORRIDOR MAP

a. Map shows existing conditions and improvement recommendations proposed through other plans/projects. The corridor routing is conceptual and does not represent actual bus routes. Future project studies and design will further define the Denver Moves: Transit recommendations including a more in-depth evaluation of each corridor, including defining the transit mode, alignment, and design, and developing details costs for each corridor. The level of investment for each type of corridor may change over time as priorities and resources are identified.
HAMPDEN CORRIDOR
PROPOSED TRANSIT IMPROVEMENTS

TRANSLIT RELIABILITY
- Evaluate transit lanes (e.g., BAT lanes)
- Queue jumps/bypass lanes
- Transit signal priority

ACCESS AND CONNECTIONS
- Improve sidewalks and complete gaps
- Provide safe crossings serving transit stops, with reduced crossing distances
- Enhance connections across I-25, including to Southmoor Station

STOPS AND STATIONS
- Standardize a basic set of amenities at all stops and provide enhanced amenities at high-ridership stops (Hampden Avenue Corridor Study)

SENSE OF PLACE
- Streetscape improvements including sidewalks and landscaping

SERVICE SPAN AND FREQUENCY VISION
Increase transit service frequency on weekdays to arrive:
- Every 10 to 15 minutes during peak hours
- Every 15 minutes during the rest of the day (until 10 p.m.)
- Every 30 minutes from 5 to 6 a.m. and 10 p.m. to 1 a.m.

Increase transit frequency on weekends to arrive:
- Every 15 minutes from 6 a.m. to 10 p.m.
- Every 30 minutes from 5 to 6 a.m. and 10 p.m. to 1 a.m.

Weekday Frequency and Span of Service

ESTIMATED IMPROVEMENT COSTS
Potential Modes: Enhanced Bus

Estimated Cost: $6 to $25 million
Draft conceptual costs for planning purposes only. Costs are in 2018 dollars and will be further defined during future corridor study and design projects. Enhanced bus costs are based on conceptual quantities of improvements and unit costs (e.g., number of stops, traffic signal improvements, and bicycle/pedestrian features), and soft costs (e.g., design, administration, contingency). Higher end costs often include placemaking features and streetscape enhancements in addition to the core transit improvements.

b. Corridor length reflects portion of corridor within city limits, approximately University-Havana. Improvements will be further defined during future project studies and design.

c. The FTN is Denver’s vision for a network of transit corridors with frequent service. The FTN will be implemented in phases in coordination with RTD.
TOWER CORRIDOR

**BACKGROUND**

- **Corridor Type:** Speed & Reliability
- **Length:** 4.5 miles
- **Average Sidewalk Coverage within 1/4-mile:** 53%
- **Existing Transit:** 42, 45, 169L

**Planning Background:**

- Identified during the draft review of Denver Moves: Transit and Far Northeast Neighborhood Planning Initiative

---

**CORRIDOR MAP**

- Map shows existing conditions and improvement recommendations proposed through other plans/projects. The corridor routing is conceptual and does not represent actual bus routes. Future project studies and design will further define the Denver Moves: Transit recommendations including a more in-depth evaluation of each corridor, including defining the transit mode, alignment, and design, and developing detailed costs for each corridor. The level of investment for each type of corridor may change over time as priorities and resources are identified.
ESTIMATED IMPROVEMENT COSTS

**Potential Modes:** Enhanced Bus

**Estimated Cost:** $3 to $11 million

Draft conceptual costs for planning purposes only. Costs are in 2018 dollars and will be further defined during future corridor study and design projects. Rapid Bus, BRT, and rail costs per mile are informed by past or current projects funded through the Federal Transit Administration (FTA) programs. Higher end costs often include placemaking features and streetscape enhancements in addition to the core transit improvements.

---

**PROPOSED TRANSIT IMPROVEMENTS**

**TOWER CORRIDOR**

- **Transit Reliability**
  - TBD
- **Service Span and Frequency Vision**
  - TBD

- **Access and Connections**
  - TBD

- **Stops and Stations**
  - TBD

- **Sense of Place**
  - TBD

*b. Improvements will be further defined during future project studies and design.*
DENVER MOVES: TRANSIT PLAN

PEORIA CORRIDOR

BACKGROUND

Corridor Type: Speed & Reliability

Length: 2.1 miles

Sidewalk Coverage within 1/4-mile: 57%

Existing Transit: 45, 121

Planning Background:

• Identified during the draft review of Denver Moves: Transit and Far Northeast Neighborhood Planning Initiative

CORRIDOR MAP

a. Map shows existing conditions and improvement recommendations proposed through other plans/projects. The corridor routing is conceptual and does not represent actual bus routes. Future project studies and design will further define the Denver Moves: Transit recommendations including a more in-depth evaluation of each corridor, including defining the transit mode, alignment, and design, and developing details costs for each corridor. The level of investment for each type of corridor may change over time as priorities and resources are identified.
PEORIA CORRIDOR

PROPOSED TRANSIT IMPROVEMENTS

TRANSPORT RELIABILITY
- TBD

SERVICE SPAN AND FREQUENCY VISION
- TBD

ACCESS AND CONNECTIONS
- TBD

STOPS AND STATIONS
- TBD

SENSE OF PLACE
- TBD

b. Improvements will be further defined during future project studies and design.

ESTIMATED IMPROVEMENT COSTS

Potential Modes: Enhanced Bus

Estimated Cost: $6 to $23 million

Draft conceptual costs for planning purposes only. Costs are in 2018 dollars and will be further defined during future corridor study and design projects. Rapid Bus, BRT, and rail costs per mile are informed by past or current projects funded through the Federal Transit Administration (FTA) programs. Higher end costs often include placemaking features and streetscape enhancements in addition to the core transit improvements.
DENVER MOVES: TRANSIT PLAN

BLUEPRINT DENVER’S TRANSIT PRIORITY STREETS

Transit priority streets are those on which transit will be prioritized over other modes when making decisions about how to design or operate the right-of-way. By prioritizing a particular street to benefit transit, the City can help transit reach its potential to transport more people reliably and rapidly. In Blueprint Denver, transit priority streets are those that have been identified in Denver Moves: Transit as High- or Medium-Capacity Transit Corridors. Transit capital investments take many forms, but they are direct expenditures by the City (and its partners) on corridors that are, or aspire to be, mixed-use, transit-supportive places. Design and operation of transit priority streets will prioritize transit through the following investments:

- **Dedicated transit lanes or grade separation**: Transit runs in exclusive lanes or in dedicated guideways (e.g., rail). This helps transit to move the most people reliably and efficiently.

- **Operational**: Improvements, such as transit signal priority, prioritize transit at traffic signals, reducing travel time and improving reliability.

- **Advanced, higher-capacity vehicles**: High-capacity vehicles, such as rail or bus rapid transit, can carry more people and increase person-throughput of a corridor.

- **Enhanced stops/stations**: Stops with shelters that protect riders from the elements, provide real-time transit information, and offer off-board ticket stations should be expected on transit priority streets.

MAKING TRADE-OFFS

To move more people on city streets, higher-capacity modes should be prioritized to provide reliable, rapid, and high-quality service. Where design and operational trade-offs are needed, transit reliability and access will be given priority on transit priority streets. These trade-offs may include removal of a general-purpose travel lane or on-street parking. Some of the factors that will be considered when making a trade-off to prioritize transit on a particular corridor include the following:

- **Person Throughput**: Transit-only or business access transit (BAT) lanes are justified if the shift from general-purpose travel lanes to transit lanes increases the total number of people that can be carried through a corridor.

- **Bus Volume**: Transit-only or BAT lanes are justified by a combined flow of 30-40 in-service transit vehicles or more per hour during peak operations—typically representing a minimum of one bus per traffic signal cycle. This level of operation ensures a transit lane never looks “empty” and virtually guarantees the lane is moving more people during an hour than a general-purpose traffic lane.

- **Speed**: The transit-only or BAT lane provides an increase in transit operating speed (for the distance of the lane or in the corridor), improves the overall person speed through the corridor, or improves service reliability.

- **Increased Reliability**: The transit-only or BAT lane dramatically improves reliability and reduces travel time on consistently delayed bus routes.

Implementing the transit priority streets will result in a complete transit network for Denver that complements the existing regional rail system. Refer to Blueprint Denver for more information about transit priority streets.
This toolkit illustrates corridor, stop and station, and access and connections improvements that can be applied together at different contexts and scales depending on land use, level of transit ridership, and type of corridor. Each of the elements are discussed in more detail in D-3 through D-5.

Future corridor studies and design projects, expanding on the Denver Moves: Transit guiding framework, will provide a more in-depth evaluation of each corridor including defining the transit mode, alignment, and design and developing detailed costs for each corridor.
# CORRIDOR TYPES

<table>
<thead>
<tr>
<th>Theme</th>
<th>Element</th>
<th>High-Capacity Transit</th>
<th>Medium-Capacity Transit</th>
<th>Speed &amp; Reliability Corridor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transit Priority Treatments</td>
<td>Transit Priority</td>
<td>■ Dedicated transit lanes, either center- or side-running</td>
<td>■ Transit lanes (including BAT lanes) in strategic locations, at specific times, and/or in the peak travel direction</td>
<td>■ Queue jumps/bypass lanes in select locations</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ Running way treatments</td>
<td>■ Running way spot improvements</td>
<td>■ Signal priority in conjunction with queue jumps</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ Signal priority</td>
<td>■ Queue jumps/bypass lanes</td>
<td></td>
</tr>
<tr>
<td>Stop and Station Spacinga</td>
<td>½ to ½-mile</td>
<td>¼ to ½-mile</td>
<td>1,000 feet to ¼-mile</td>
<td></td>
</tr>
<tr>
<td>Access</td>
<td>Bike Access</td>
<td>High-ease-of-use facilities within 1½-mile radius of stations.</td>
<td>High-ease-of-use facilities within 1½-mile radius of major stations.</td>
<td>Neighborhood bikeway facilities within ½-mile radius of stops.</td>
</tr>
<tr>
<td>Pedestrian Access</td>
<td>Pedestrian access improvements within ½-mile radius of stations.</td>
<td>Pedestrian access improvements within ½-mile radius of major stations.</td>
<td>Pedestrian access improvements within ¼-mile radius of stops.</td>
<td></td>
</tr>
<tr>
<td>Sense of Place</td>
<td>Transit Supportive Land Use and Urban Form</td>
<td>Public art, green infrastructure, pedestrian-scale design and amenities, mixed-use development, parklets and plazas may be appropriate depending on the context.</td>
<td>Public art, green infrastructure, pedestrian-scale design and amenities, and mixed-use development may be appropriate depending on the context.</td>
<td>Green infrastructure and pedestrian-scale design and amenities may be appropriate depending on the context.</td>
</tr>
</tbody>
</table>

---

a Future corridor studies and design projects, expanding on the Denver Moves: Transit guiding framework, will provide a more in-depth evaluation of each corridor including defining the transit mode, alignment, and design and developing detailed costs for each corridor. Stop and station spacing shown are estimates based on industry practices. The stop and station spacing along the Transit Capital Investment Corridors will be coordinated with RTD.
HIGH-CAPACITY TRANSIT CORRIDOR

TRANSPORT PRIORITY TREATMENTS
- Dedicated transit lanes, either center- or side-running
- Running way treatments
- Signal priority
- Station spacing ⅓ to ½-mile

ACCESS
- High-ease-of-use bicycle facilities within 1½-mile radius of stations
- Pedestrian access improvements within ½-mile radius of stations
- Articulated vehicles provide space for bikes on board

SENSE OF PLACE
Public art, green infrastructure, pedestrian-scale design and amenities, mixed-use development, parklets and plazas may be appropriate depending on the context.

Future corridor studies and design projects, expanding on the Denver Moves: Transit guiding framework, will provide a more in-depth evaluation of each corridor including defining the transit mode, alignment, and design and developing detailed costs for each corridor.
DENVER MOVES: TRANSIT PLAN

MEDIUM-CAPACITY TRANSIT CORRIDOR

Conceptual graphic of a Medium Capacity Transit Corridor in Denver

**TRANSIT PRIORITY TREATMENTS**
- Transit lanes (including BAT lanes) in strategic locations, at specific times, and/or in the peak travel direction
- Running way spot improvements
- Queue jumps/bypass lanes
- Signal priority
- Station spacing ¼ to ½-mile

**ACCESS**
- High-ease-of-use bicycle facilities within 1½-mile radius of major stations
- Pedestrian access improvements within ½-mile radius of major stations
- Vehicles have exterior bike racks with storage capacity for a minimum of three bikes

**SENSE OF PLACE**
Public art, green infrastructure, pedestrian-scale design and amenities, and mixed-use development may be appropriate depending on the context

Future corridor studies and design projects, expanding on the Denver Moves: Transit guiding framework, will provide a more in-depth evaluation of each corridor including defining the transit mode, alignment, and design and developing detailed costs for each corridor.
SPEED AND RELIABILITY CORRIDOR

TRANSIT PRIORITY TREATMENTS
- Queue jumps/bypass lanes in select locations
- Signal priority in conjunction with queue jumps
- Station spacing 1,000 feet to ¼-mile

ACCESS
- Neighborhood bikeway facilities within ½-mile radius of stops
- Pedestrian access improvements within ½-mile radius of stops

SENSE OF PLACE
Green infrastructure and pedestrian-scale design and amenities may be appropriate depending on the context

Future corridor studies and design projects, expanding on the Denver Moves: Transit guiding framework, will provide a more in-depth evaluation of each corridor including defining the transit mode, alignment, and design and developing detailed costs for each corridor.
## STOP AND STATION TYPES

<table>
<thead>
<tr>
<th>Element</th>
<th>Transit Facility Type</th>
<th>Bus Stop</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Transit Center</td>
<td>Transit Station</td>
</tr>
<tr>
<td>Corridor Type</td>
<td>All</td>
<td>High-Capacity Transit &amp; Mobility Hub</td>
</tr>
<tr>
<td>Landscaping, Trees, Art</td>
<td>■ Landscaped stormwater treatments</td>
<td>■ Landscaped stormwater treatments</td>
</tr>
<tr>
<td></td>
<td>■ Art features</td>
<td>■ Art features</td>
</tr>
<tr>
<td>Passenger Information</td>
<td>■ Printed schedule information</td>
<td>■ Printed schedule information</td>
</tr>
<tr>
<td></td>
<td>■ Real-time information display</td>
<td>■ Real-time information display</td>
</tr>
<tr>
<td>Shelter Design</td>
<td>■ Vertical panels to provide weather protection and separation from vehicle traffic</td>
<td>■ Vertical panels to provide weather protection and separation from vehicle traffic</td>
</tr>
<tr>
<td></td>
<td>■ Ample seating, including benches and lean bars</td>
<td>■ Ample seating, including benches and lean bars</td>
</tr>
<tr>
<td>Safety and Security</td>
<td>■ Lighting and security features</td>
<td>■ Lighting and security features</td>
</tr>
<tr>
<td>Fare Payment</td>
<td>■ Off-board fare payment</td>
<td>■ Off-board fare payment</td>
</tr>
<tr>
<td>Wayfinding</td>
<td>■ Wayfinding signs connect to nearby destinations</td>
<td>■ Wayfinding signs connect to nearby destinations</td>
</tr>
<tr>
<td></td>
<td>■ Interactive/digital wayfinding a</td>
<td>■ Interactive/digital wayfinding</td>
</tr>
<tr>
<td>Other Access Amenities</td>
<td>■ Bike share stations</td>
<td>■ Bike share stations</td>
</tr>
<tr>
<td></td>
<td>■ Car share parking</td>
<td>■ Car share parking</td>
</tr>
<tr>
<td></td>
<td>■ On-demand ride services dropoff</td>
<td>■ On-demand ride services dropoff</td>
</tr>
<tr>
<td></td>
<td>■ Secure, covered bike parking</td>
<td>■ Secure, covered bike parking</td>
</tr>
<tr>
<td></td>
<td>■ Park &amp; ride a</td>
<td>■ Park &amp; ride a</td>
</tr>
<tr>
<td></td>
<td>■ Well-marked pedestrian crossings</td>
<td>■ Well-marked pedestrian crossings</td>
</tr>
</tbody>
</table>

---

a. Level of amenity based on ridership thresholds and/or space availability
b. Depends on location

Future corridor studies and design projects, expanding on the Denver Moves: Transit guiding framework, will provide a more in-depth evaluation of each corridor including defining the transit mode, alignment, and design and developing detailed costs for each corridor.
TRANSIT CENTER

AMENITIES
A. Landscaped stormwater treatments
B. Art features
C. Lighting and security features

SHELTERS AND SEATING
D. Weather protection and separation from vehicle traffic
E. Ample seating, including benches and lean bars

INFORMATION AND FARE TECHNOLOGY
F. Real-time information display
G. Printed schedule information
H. Off-board fare payment

ACCESS
I. Wayfinding signs connect to nearby destinations
J. Interactive digital wayfinding
K. Bike share stations
L. Car share parking
M. On-demand ride service dropoff location
N. Secure, covered bike parking
O. Park & ride
P. Well-marked pedestrian crossings

a. Depends on location
TRANSIT STATION
High-Capacity Transit Corridors and Mobility Hubs

Conceptual graphic of a High-Capacity Corridor in Denver

AMENITIES
A. Landscaped stormwater treatments
B. Art features
C. Lighting and security features

SHELTERS AND SEATING
D. Vertical panels to provide weather protection and separation from vehicle traffic
E. Ample seating, including benches and lean bars

INFORMATION AND FARE TECHNOLOGY
F. Real-time information display
G. Printed schedule information
H. Off-board fare payment

ACCESS
I. Wayfinding signs connect to nearby destinations
J. Interactive/digital wayfinding
K. Bike share stations
L. Car share parking
M. On-demand ride service dropoff location
N. Secure, covered bike parking
O. Park & ride
P. Well-marked pedestrian crossings

a. Depends on location

Future corridor studies and design projects, expanding on the Denver Moves: Transit guiding framework, will provide a more in-depth evaluation of each corridor including defining the transit mode, alignment, and design and developing detailed costs for each corridor.
TRANSIT STATION
Medium-Capacity Transit Corridors

AMENITIES
A. Landscaped stormwater treatments
B. Lighting

SHELTERS AND SEATING
C. Vertical panels to provide weather protection and separation from vehicle traffic
D. Ample seating, including benches and lean bars

INFORMATION AND FARE TECHNOLOGY
E. Printed schedule information
F. On-board fare payment

ACCESS
G. Bike parking
H. Well-marked pedestrian crossings
DENVER MOVES: TRANSIT PLAN

BUS STOP

Speed & Reliability Corridors

Conceptual graphic of a Speed and Reliability Corridor in Denver

**AMENITIES**
A. Lighting

**SHELTERS AND SEATING**
B. Shelter
C. Bench or seat on sign post

**INFORMATION AND FARE TECHNOLOGY**
D. Printed schedule information on sign post
E. On-board fare payment

**ACCESS**
F. Well-marked pedestrian crossings
G. Bike parking

Future corridor studies and design projects, expanding on the Denver Moves: Transit guiding framework, will provide a more in-depth evaluation of each corridor including defining the transit mode, alignment, and design and developing detailed costs for each corridor.

a. Level of amenity based on ridership thresholds and/or space availability
The destinations transit serves and the route it takes to get there is just one piece of the puzzle. Making transit rapid and reliable is essential to get more people to take transit for more types of trips. The City and County of Denver manages many of Denver’s major streets and has an important role to play in ensuring that transit moves more efficiently throughout Denver. This section describes improvements that support high-quality, reliable, and frequent service along transit corridors in Denver:

- Dedicated transit lanes
- Stop and station spacing and consolidation
- Transit signal priority
- Bypass or queue jump lanes

Refer to the Corridor, Stop, and Station Toolbox (Section D-2) in the previous section for a summary of how the various types of corridor, stop/station, and access and connection improvements can be applied together at different contexts and scales depending on land use, level of ridership, and type of corridor.
DEDICATED TRANSIT LANES

What This Is

To improve transit service and operations, dedicated or “exclusive” transit lanes can be reserved for transit use, separating and limiting conflicts between transit vehicles and general-purpose traffic. Features of dedicated transit lanes include:

- Dedicated lanes can be either center- or side-running, depending on the configuration of the roadway and transit operations.

- Business Access and Transit (BAT) lanes are primarily dedicated for transit use but allow non-transit vehicles to enter the transit lane to access driveways or intersecting streets.

- Dedicated lanes typically operate as either full-time (24-hours) or part-time (during peak periods).

- Lanes are indicated with a combination of signs, pavement markings, and colored concrete.

- Lanes can be physically separated from travel lanes with textured treatments (e.g., rumble strips).

- Transit running-way separation is commonly used for light rail and commuter rail and applied to streets with very high transit volumes.

Why It Matters

- Increases transit travel speed, reliability, and capacity.

- Improves service quality and safety.

- Increases transit visibility and improves compliance with transit-only restrictions.

- Improves transit service and operations quality.

Considerations for Implementation

- Evaluate the application of dedicated transit lanes (see “Blueprint Denver’s Transit Priority Streets on page D-48”).

- Coordinate transit lane design with other street features, including bicycle facilities and parking.

- Evaluate whether existing stops need to be relocated or reconfigured.

- Center-running and side-running applications depend on transit operations and the number of access points to adjacent roads and driveways.

- A dedicated transit lane can be a relatively low cost improvement, depending on what features are used to define the dedicated space for transit (e.g., pavement markings or grade-separation).
Types of Dedicated Transit Lanes

CENTER-RUNNING LANES

Transit vehicles operate in the center of the roadway, eliminating conflicts with other street uses such as deliveries, parking, and right-hand turning movements. Most center-running lane configurations allow transit vehicles to operate in the center of a roadway and require median boarding islands, which must be paired with safe, accessible crossings for passengers. This lane configuration provides higher transit-exclusivity than side-running lanes.

Center-running lanes are commonly supported by these features:

■ Median transit boarding islands.
■ Safe, accessible crossings for passengers.
■ Pavement markings, signs, colored concrete, or textured treatments.

Considerations for implementation of center-running lanes include the following:

■ Easiest to implement in areas with fewer left-hand turns.
■ Should be coordinated with stop relocation and reconfiguration.
■ Vehicles cannot cross center-running lanes except at signals, meaning that U-turns or multiple left-turns may be required to reach a destination.

SIDE-RUNNING LANES

Transit vehicles operate in the outer lanes of the roadway. Some side-running lanes operate as flex lanes, serving as a transit lane during the peak periods and a parking lane in off-peak periods, for example. They may also operate as shared-use lanes that allow general-purpose vehicles to enter the lane to access driveways or adjacent streets, such as BAT lanes. Side-running lanes provide less transit exclusivity than center-running lanes; however, they are often easier to implement.

Side-running lanes are commonly supported by these features:

■ Shared lanes (e.g., transit lanes during peak periods and parking at other times of day).
■ Transit signal priority.

Considerations for implementation:

■ May be preferable along corridors with many access points (e.g., commercial strip with many business driveways).
■ Requires enforcement to ensure cars are not parked in the lane.

BUSINESS ACCESS AND TRANSIT (BAT) LANES

BAT lanes are a specific type of side-running lanes that allow general-purpose vehicles to enter the transit lane to make right-hand turns to access driveways and adjacent streets. Pavement markings and signs can be used to delineate where non-transit vehicles are allowed to enter the lane and are important to enforce compliance.
COMMUNITY HIGHLIGHT: JUSTIFICATION FOR DEDICATED TRANSIT LANES IN SEATTLE

For Seattle’s RapidRide Program, a dedicated transit lane can be justified if one or more of the following conditions are met:

- **Person Throughput**: Increases the total number of people that can be carried through a corridor during peak-hour periods.

- **Bus Volume**: Accommodates 30-40 transit vehicles per hour through the corridor during peak operations, typically representing a minimum of one bus per signal cycle. This level of operation ensures that a transit lane never looks “empty” and virtually guarantees the transit lane is moving more people during an hour than a general-purpose traffic lane.

- **Mode Share**: Provides more person throughput than a general-purpose traffic lane during the peak hour or peak period or handles 20% peak-period transit mode share in the corridor.

- **Speed**: Provides 4-6 mph transit speed increase (or 40-50% average operating speed increase) over the distance of the lane.

When compared with local buses operating in mixed traffic, a street with dedicated transit lanes can reduce transit travel times and increase the person-carrying capacity of the street (even with fewer general-purpose lanes).
Transit Running-Way Separation

On streets with very high transit volumes, physical separation of transit lanes from other travel modes and turning movements supports the highest level of transit reliability and speed. Fully grade-separated facilities are most common for light rail and commuter rail, although a few North American cities have applied running-way separation for bus rapid transit (BRT). Running-way separation requires the most significant capital investment and is supported by raised curbs, medians or other types of barriers, off-board ticketing, and level boarding platforms. Adding grade-separated transit running ways to High-Capacity Transit Corridors in Denver would require detailed evaluation and design.

Eugene, Oregon’s EmEx BRT operates in a separated running way along much of the route, reducing delay from turning vehicles and providing space for upgraded station amenities.

COMMUNITY HIGHLIGHT: DEDICATED TRANSIT LANES

CLEVELAND HEALTHLINE BRT

The HealthLine BRT in Cleveland uses center-running transit lanes to connect major employment destinations, universities, and downtown Cleveland. In combination with other corridor improvements, including stop consolidation and transit signal priority, transit travel times along the corridor have been reduced by 30% (Data source: HealthLine BRT).

DENVER BROADWAY/LINCOLN TRANSIT IMPROVEMENTS

The Broadway and Lincoln corridors received transit service improvements in 2017, including converting the peak-period transit lanes to 24-hour lanes. Pavement markings and new signs help to define the dedicated space for transit.
STOP/STATION SPACING AND CONSOLIDATION

What This Is

Bus stop consolidation reduces the number of stops along a route to shorten travel time. Generally, the further apart stops are spaced, the faster service operates.

Why It Matters

- Reduces the number of times that a transit vehicle stops for passenger boarding and alighting, merges into traffic, and accelerates.
- Reduces delay and improves transit reliability, transit travel time, and the overall experience riding transit.

Considerations for Implementation

- When consolidating stops, ensure that mobility, accessibility, and ridership goals are met. RTD is currently in charge of stop consolidation. The City should continue to work with RTD to discuss stop relocations and placement.
- Stops that are spaced farther apart can increase the distance that transit riders must travel to a stop or station, which is an important consideration in overall travel time and accessibility.
- Optimal transit stop spacing and locations depend on the type of transit service, street layout, access from the surrounding neighborhoods, land uses and major destinations, and typography.
- Consider retaining stops with high existing ridership. Areas of higher population of older adults and people with disabilities may merit closer stop spacing.
- Consider the application of first and final mile access and connections when deciding on stop location or relocation.
- In some cases, travel time savings from stop consolidation can be great enough to allow for transit agencies to run fewer transit vehicles while still meeting local guidelines for bus headways.
Stop Spacing Guidance for Transit Capital Investment Corridors

**SPEED & RELIABILITY CORRIDOR**
1,000 foot to 1/4-mile stop spacing

**MEDIUM-CAPACITY TRANSIT CORRIDOR**
1/4 to 1/2-mile stop spacing

**HIGH-CAPACITY TRANSIT CORRIDOR**
1/3 to 1/2-mile stop spacing

Stop and station spacing shown are estimates based on industry practices. The stop and station spacing along the Transit Capital Investment Corridors will be coordinated with RTD.
TRANSIT SIGNAL PRIORITY

What This Is

Transit signal priority (TSP) is a tool used to modify traffic signal phases to advance transit vehicles through intersections, helping to reduce delays at intersections and increase transit speeds. TSP is sometimes used in combination with queue jumps, bypass lanes, or dedicated transit lanes.

There are two types of transit signal priority:

- As the transit vehicle approaches the intersection, the traffic signal stays green longer, allow the bus or train to pass through the intersection.

- The red signal is shortened to reduce the amount of time the transit vehicle is stopped at the light.

Why It Matters

- Delay at traffic signals can account for over one quarter of a transit route’s total trip time; transit signal priority reduces total transit travel times.

- Improves transit reliability, speed, and safety.
Considerations for Implementation

- Implement signal priority at multiple intersections along a corridor, or at specific intersections with consistent congestion delays.

- Signal priority can be very effective on streets with long signal cycles or significant distances between signals.

- Implementing signal priority at highly congested intersections can have impacts on cross-street traffic delay; moderately congested intersections are best suited for signal priority treatments.

- To maximize operational improvements at intersections with no bypass/queue jump lanes, TSP can be paired with far-side transit stops so that approaching buses activate the priority signal, move through the intersection, and then make the stop.

- When TSP is paired with bypass/queue jump lanes, stops may be either near or far side.

COMMUNITY HIGHLIGHT: TRANSIT SIGNAL PRIORITY IMPLEMENTATION SUCCESS

Studies in Minneapolis, Portland, Seattle, and Los Angeles have demonstrated that signal priority can reduce total bus travel times during peak hours by 4-15%, improving transit speed and reliability.

Buses in Seattle have signal priority on Columbia Street crossing 2nd Avenue, allowing them to move ahead in traffic.

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**BYPASS/QUEUE JUMP LANES**

**What This Is**

Bypass or queue jump lanes are short sections of dedicated/exclusive transit lanes that give preference to transit along arterial streets, allowing transit vehicles to bypass congested areas and move ahead of traffic at intersections.

**Why It Matters**

- Improves transit reliability, speed, and safety.

**Considerations for Implementation**

- Implement these lanes where transit operates in a side-running lane (curb lane) with high peak hour/period traffic volumes and a low number of right-turning movements.

- To maximize benefits, implement bypass/queue jump lanes with transit signal priority (where feasible).

- Implement near-side stop locations for bypass/queue jump lanes when the green phase for the bus is short.

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This graphic shows one possible design for an intersection combining bypass/queue jump lanes, a near-side bus stop, and signal priority. Parking and right turns are prohibited near the intersection to allow the bus to serve the stop and take advantage of the advance green signal to proceed ahead of other queued traffic.
Well-designed stops and stations provide a comfortable and safe waiting space for people who ride transit. Enhanced stops and stations are needed throughout the city to meet the vision of a high-quality transit experience in Denver.

This section discusses the various types of stop and station improvements, including:

- People-first places
- Transit stop placement
- Transit passenger information
- Bicycle parking at transit stops and stations
- Safety and security at transit stops and stations
- Wayfinding
- Green infrastructure, landscaping, sustainable materials, and art

Refer to the Corridor, Stop, and Station Toolbox in Section D-2 for a summary of how the various types of corridor, stop/station, and access and connection improvements can be applied together at different contexts and scales depending on land use, level of ridership, and type of corridor. While the improvements and enhancements in this section are discussed at a stop/station-level, many can also be implemented corridor-wide.
PEOPLE-FIRST PLACES

What This Is

People-first places are public or semi-public spaces that create a sense of place with furnishings, landscaping, and art. They are designed to offer a greater sense of safety and security to people waiting for and accessing transit. By prioritizing pedestrians and creating attractive places to spend time, people-first places support active streets and transit ridership. People-first places may be separate from the street network, such as plazas or active ground-floor building uses, or part of the streetscape, such as parklets. People-first places can also be smaller parklets or interim plazas.

Considerations for Implementation

- Integrate parklets near transit stops and stations to enhance the transit rider experience. Activating this public space can allow transit riders to enjoy the landscape and public art, engage with elements of the parklet, and have a comfortable place to sit while they wait for their bus or train.
- Where feasible, provide site-specific pedestrian plaza areas, such as the Union Station Plaza off Wynkoop Street. This plaza supports multiple uses and facilitates easy walking between the sidewalk, bus terminal, and high-capacity transit boarding zones.
- Provide street furniture such as bollards, benches, and planters to help define shared spaces and create clear travel paths.
- Allow temporary installations of plazas and traffic calming elements, such as the pop-up park on 21st Street called “The Square” (summer 2017) which was activated as a public space in summer 2017. These low-cost installations help test designs and build public support for permanent improvements.

Why It Matters

- Provides community places for people to gather and create a sense of place and community.
- When located on transit streets, people-first places make waiting for and accessing transit more comfortable.
COMMUNITY HIGHLIGHT: PEOPLE-FIRST PLACES

DENVER

The Square (right), a pop-up park in Denver on 21st Street between Lawrence and Larimer Streets, featured a performance stage, bike trail, dog park, vendors/food trucks, landscaping, seating, and street art...

Public art at the 40th and Airport light rail station in Denver (below) enhances the transit station and makes the rider experience more enjoyable.

Source: Denverite
Source: Denverite

PITTSBURGH, PENNSYLVANIA

Project for Public Spaces activated bus stops throughout Pittsburgh’s Hill District. One bus stop was activated with work from local artists (right).

Source: Project for Public Spaces

BOULDER, COLORADO

The City of Boulder’s first parklet includes landscaping, seating, and a chalkboard for parklet visitors to provide their thoughts about what they adore in Boulder (below). Installing parklets like this adjacent to transit stops and stations enhance the transit rider experience.

Source: City of Boulder Parklet Facebook
Source: City of Boulder Parklet Facebook
TRANSIT STOP PLACEMENT

What This Is

The location of transit stops and stations impacts access and transit operations. At a macro-level, stops and stations located within active, transit-supportive areas help connect people who ride transit between neighborhoods and key destinations. At a micro-level, stop and station placement (near- or far-side or midblock) is important to connect to pedestrian pathways, safe crossings, and bicycle facilities. See Stop/Station Spacing and Consolidation in Section D-3.

Why It Matters

■ Stop and station placement supports transit ridership by providing passengers with convenient and safe access to transit while fostering easy transfers between other modes and access to adjacent destinations.

■ Stops and stations located adjacent to pedestrian crossings or trails makes it easier to walk to or from transit.

■ Placement of stops helps improve transit operations and safety.

Considerations for Implementation

■ Coordinate placement/relocation of transit stops with RTD.

■ Provide adequate space at each stop for boarding, alighting, and waiting areas for transit passengers. (This varies based on transit passenger volume, space available, and activity in the surrounding area).

■ Far-side stops are preferred at signalized intersections. Consider placement of stops where perpendicular routes meet to facilitate transfers and increase pedestrian safety by limiting street crossings (e.g., Colfax and Colorado).

■ Locate stops at the intersection rather than midblock where buses are required to pull out of traffic to access a stop.

■ Provide enhanced pedestrian crossing treatments at midblock stop locations, where feasible.
TRANSIT STOP PLACEMENT OPTIONS

Transit stops should be sited to support transit reliability and speed, connections between modes, safety, and access to adjacent land uses. The photos below show examples of a near-side bus stop in Chicago (below), a far-side bus stop in Alameda, California (bottom right), and midblock bus stop in Ashland, Oregon (top right).
COMMUNITY HIGHLIGHT: STOP AND STATION DESIGN

EUGENE, OREGON

Stations along Eugene’s EmX BRT line offer wide boarding platforms, real-time arrival information screens, seating, wide awnings, and trash receptacles.

ST. PAUL, MINNESOTA

The bus stop adjacent to Hutton Arena in St. Paul Minnesota provides transit riders with shelter, seating, bike parking, real-time arrival information screens, lighting, and security cameras.
CONSIDERATIONS FOR DESIGNING
STOPS AND STATIONS

- Design shelters to accommodate all riders, including those who rely on mobility devices.
- Incorporate bus stop amenities including: benches, shelters, informational signs, bicycle parking, and trash receptacles.
- Utilize existing design elements such as large awnings of businesses in stop and shelter design.
- Integrate sustainable design practices and materials into stop and station design.
- Choose shelter designs that provide protection from the elements.
- Integrate design principles that support crime prevention, including using transparent materials and open shelter designs to ensure visibility.
- Maintain stops and stations during all seasons to ensure a safe and clear walking areas.
- Integrate public art to enhance stop and station design and celebrate communities.
- Partner with local businesses to sponsor stations.

As Denver Moves: Transit is implemented, additional strategies and standards will be developed to guide decision-making and prioritization of stop and station improvements. These tools will help inform the minimum enhancements at stops and stations along the Transit Capital Investment Corridors.
TRANSIT PASSENGER INFORMATION

What This Is

Passenger information in digital or printed form helps transit riders understand how to ride the system. Information includes route schedules, maps, and digital and dynamic real-time information and signs. Information should be available online, in print, and/or through smartphone apps.

Why It Matters

- Clear and simple information increases convenience and legibility.
- Real-time information informs decision-making by allowing people to know their options instantly.
- Information provided at stops/stations reduces the need for access to technology such as smartphones.
- Information is especially important at busy transit stops and stations where riders rely on route information and wayfinding to reach connecting routes in a timely manner.

Considerations for Implementation

- To meet the diverse needs of transit riders and access to technology, provide transit information in a variety of formats including posted at stops and stations, inside transit vehicles, by phone, online, and through a smartphone app.
- Ensure information at transit stops includes the stop/station information, route information, and system logo; maps and wayfinding should also be considered.
- Ensure information at stops and stations meets agency and accessibility standards.
COMMUNITY HIGHLIGHT: TRANSIT PASSENGER INFORMATION

DENVER

Passenger information including a light rail system map and schedule are provided on a kiosk at the Colfax at Auraria Light Rail Station in Denver.

PORTLAND, OREGON

The downtown transit mall in Portland, OR (right) provides clear, legible signage that shows a transit map and indicates the stop name and transit routes serving the area. Real-time information is also provided at each stop.
BICYCLE PARKING AT TRANSIT STOPS AND STATIONS

What This Is

Bike parking at stops and stations allows transit riders to easily bike to connect to transit. Bicycle parking can include a mix of short-term parking (e.g., covered inverted U-racks) and long-term parking (e.g., bicycle lockers and secure bicycle parking facilities).

Why It Matters

- Bicycle parking at transit stops and stations allows people to connect easily to transit by providing a safe and convenient place to park their bike.
- Providing secure bicycle parking at transit stops and stations can alleviate the demand for bicycle storage space on transit vehicles.

Considerations for Implementation

- Work with the City’s bicycle program and RTD to create standards to define the types and quantity of short- and long-term bicycle parking at transit stops and stations.
- Inventory parking along the Transit Capital Investment Corridors and FTN and identify locations to install secure and convenient short- and long-term bike parking.
- Where possible, locate bicycle parking under a covered area to provide weather protection.
- Locate bicycle parking as close as possible to stops or stations without creating conflict with pedestrians.
- Where increased development is expected near transit, plan additional space adjacent to boarding areas for future bicycle parking growth needs.
- Consider creative, yet functional bicycle parking as an opportunity to integrate art into transit stops or stations.
- Explore opportunities to support system integration (e.g., mobility platform) to provide convenience for customers using long-term, secure bicycle parking.
COMMUNITY HIGHLIGHT: BICYCLE PARKING AT STOPS AND STATIONS

SEATTLE, WASHINGTON
Covered short-term bicycle parking provides a protected place for transit users to secure their bicycle at light rail stations.

FALLS CHURCH, VIRGINIA
Well-designed signs communicate how to rent a bike locker.

Source: Toole Design Group
SAFETY AND SECURITY AT TRANSIT STOPS AND STATIONS

What This Is

Personal safety and security at transit stops and stations both during the day and at night affects a person’s decision to ride transit. Safety features at stops and stations include:

- Lighting.
- Clear sightlines.
- Stop designs that are open and visible (e.g., clear shelter materials, well-placed landscaping).
- Security cameras.
- Emergency phones.

Safe access to stops and stations (e.g., pedestrian access) is discussed in D-5: Access and Connections to Transit.

Why It Matters

- Provides passengers with a safer and more comfortable transit experience.
- Supports transit ridership.

Considerations for Implementation

- Apply the principles of Crime Prevention Through Environmental Design (CPTED) at stops and stations and along transit corridors.
- Where possible, local transit stops near building frontages and windows to provide “eyes on the street.”
- Locate stops near street lighting.
- Provide lighting within or adjacent to transit shelters.
- Use transparent shelter materials to improve visibility and sightlines (e.g., glass-paneled bus shelters).
- Provide emergency telephones and security cameras at major stations.

WHAT IS CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN?

Crime Prevention Through Environmental Design (CPTED) is defined as a multi-disciplinary approach to deterring crime by designing a physical environment that positively influences human behavior and create a climate of safety in a community.
COMMUNITY HIGHLIGHT: SAFETY AT TRANSIT STOPS

DENVER

Open locations and transparent shelters increase rider comfort at downtown bus stops in Denver.

Source: Ryan Dravitz, Denver Urbanism

BOISE, IDAHO

A bus stop in Boise is located along an active downtown street surrounded by a mix of retail and offices that offer high visibility for people using transit. This can help people feel safe and secure while waiting for the bus.

Source: Nelson\Nygaard
WAYFINDING

What This Is

Wayfinding helps orient people and makes it easier to navigate between places. Wayfinding can be in the form of signs, interactive kiosks, or pavement markings. Transit-specific wayfinding directs people to transportation connections (such as bus transfer points or stations) and nearby destinations.

Why It Matters

- Helps orient people and makes it easier to navigate between places.
- Improves access between modes by helping transit riders navigate to transfers between modes.
- Promotes safety by leading people to designated pedestrian crossings and bike routes.

Considerations for Implementation

- Locate wayfinding along transit streets, at transit stops, and between transit and key destinations.
- Ensure wayfinding is placed in intuitive locations where it is visible by people walking, bicycling, and using mobility devices.
- Include direction, destination, distance, and transit stop or station names on signs.
- Where possible, locate both static (e.g., mounted signage) and dynamic (e.g., interactive kiosk or variable message signs) wayfinding to best meet customer needs and to be responsive to service changes/disruptions.
- Use a recognizable brand to improve awareness of transit.
- Ensure information at stops and stations meets agency and accessibility standards.
COMMUNITY HIGHLIGHT: WAYFINDING AT TRANSIT STOPS AND STATIONS

DENVER

Pedestrian-oriented signs near Union Station help transit users navigate between modes.

DENVER

Wayfinding signs along the 16th Street Mall direct people to key downtown destinations.

Source: Nelson\Nygaard
## GREEN INFRASTRUCTURE, LANDSCAPING, SUSTAINABLE MATERIALS, AND ART

### What This Is

Landscaping, green infrastructure, and art can be used to enhance the function, safety, and aesthetic of transit stops and stations and integrate the transit area into the surrounding community. Utilizing sustainable design and materials, including those that are recycled, durable, or produced locally can help ensure stops and stations contribute to multiple environmental, economic, and social benefits.

The stop and station enhancements discussed below can also be applied corridor-wide.

### Why It Matters

- Helps define spaces and provides a more comfortable experience.
- Near transit stops, some features can provide traffic calming.
- Art and aesthetic treatments at stops/stations foster a sense of community by celebrating the unique characteristics of neighborhoods and create an identity for individual transit stops.
- Plantings can improve the micro-climate around a transit station by lowering the urban heat island effect and improving air quality.
- Trees provide scale, shade, and some protection from adverse weather.
- Green infrastructure improves water quality and reduce stormwater loads.
- Applying sustainable design practices contributes environmental, economic, and social benefits.

### Considerations for Implementation

#### Landscaping/Green Infrastructure:

- Integrate green infrastructure into transit capital improvement projects.
- Install multi-functional landscaping such as stormwater planters with ground cover, shrubs, and trees to help define space, provide passenger comfort (e.g., shade), and treat stormwater.
- Utilize landscaping features, such as curb extensions, as traffic calming strategies near transit stops/stations.
- Planting areas reduce the amount of paving at transit stops, which reduces the urban heat island effect and improve air quality.
- Maintain trees and landscaping to maintain comfort and sightlines around transit stops.
- Consider CPTED principles when designing and installing landscaping to promote safety.
- Work with the Denver’s Office of the City Forester to protect existing public trees and pursue options for planting new public trees along transit corridors.

#### Art:

- Integrate art into the functional design of a transit stop/station through site furnishings and architectural treatments or as standalone features such as murals or sculptures.
- Use existing public art programs that fund local art projects (e.g., RTD’s Art-n-Transit program, Denver Art and Venue’s Urban Arts Fund).
INTEGRATING GREEN INFRASTRUCTURE INTO TRANSIT CORRIDORS AND STOPS

While streets represent one of the largest sources of stormwater pollution, they also represent one of the best opportunities to install green infrastructure. Green infrastructure/green street practices balance multimodal priorities with environmental resilience and create safer, healthier, more attractive, and equitable places.

Making changes to curbs, bus stops, sidewalks, and crosswalks as part of transit capital improvement projects provides an opportunity to reduce stormwater loads on traditional infrastructure systems like storm sewers. Stormwater bioretention and infiltration facilities can be incorporated into bus bulbs, floating transit islands, curb extensions, and sidewalk planting strips. These facilities enhance the pedestrian environment and support transit use with greenery and shade and also help return street environments to a natural water cycle by allowing rainwater to percolate the soil.

Denver’s Ultra-Urban Green Infrastructure Guidelines provide siting and design specifications for street-side and curb-bulb stormwater planters, green gutters, and tree planting pits, any of which could be incorporated into transit stop and station design. Green infrastructure can reduce the volume of stormwater flowing into storm sewers, improve water quality in area waterways, and reduce peak flow surface runoff, all more economically than additional investment in traditional gray infrastructure engineering solutions.a

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*Incorporating green infrastructure elements such as this planter on 4th Avenue in Portland, Oregon, captures and infiltrates street runoff, reducing the load on the combined sewer system and helping to prevent sewage overflow into local waterways.*
COMMUNITY HIGHLIGHT: LANDSCAPING AND ART AT TRANSIT STOPS AND STATIONS

SEATTLE, WASHINGTON
Landscaping in Seattle softens the urban environments around transit stops and enhances the transit rider experience.

LAWRENCE, KANSAS
Artistic bike racks adjacent to bus stops in Lawrence, Kansas provide a sense of place and celebrate the community’s unique character.

Source: Toole Design Group
Multimodal access to transit stops and stations is essential to increase the number of people served by transit. Safe and comfortable walking and biking access to transit and seamless connections to shared mobility options can be a deciding factor in the decision to ride transit, especially for those with the option to drive.

This section highlights the strategies and tools to improve multimodal access to transit, including:

- Compact street networks
- Pedestrian access to transit
- Bicycle access to transit
- Bike share integration
- Bicycles on transit
- Shared and on-demand mobility integration
- On- and off- street parking management strategies
- Park-and-rides
An example of an area in Denver that is accessible by walking, biking, and car share.

Source: Denver Bike Paths Blog
COMPACT STREET NETWORK

What This Is

Compact street networks typically include shorter blocks and the streets are often narrow and well-connected. They provide shorter travel distances which make it easier for pedestrians, bicyclists, and drivers to access transit. Streets in a compact network are closely spaced providing more intersections and crossing opportunities.

Denver neighborhoods like Sunnyside, Capitol Hill, and Congress Park have a compact street network that supports access to transit – these neighborhoods show a higher than average percent of residents that commute by transit.

Why It Matters

- Provides more crossing opportunities and shorter travel distances, making it easier to access transit.
- Narrow and compact streets can help slow down auto speeds and increase comfort for pedestrians.

Considerations for Implementation

- Use zoning to promote small block size and a compact street grid to shorten the distances between transit stops and destinations.
- Use redevelopment opportunities to connect disconnected streets.
- If a full street grid is not possible, provide midblock crossings to make it more convenient to access transit.

<table>
<thead>
<tr>
<th>Capitol Hill</th>
<th>Northeast Park Hill</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crow-fly distance: 700 ft</td>
<td>Crow-fly distance: 700 ft</td>
</tr>
<tr>
<td>Street network distance: 944 ft</td>
<td>Street network distance: 2,243 ft</td>
</tr>
</tbody>
</table>

A well-connected street network (left) enables shorter and more direct walking connections. A disconnected street network (right) results in long walk distances and less efficient transit operations. The per acre data indicates the density of street intersections per acre of land – higher density of intersections means better access to transit.
## PEDESTRIAN ACCESS TO TRANSIT

### What This Is

Every transit rider is a pedestrian at some point of their trip and needs convenient, comfortable, and safe places to walk. Strategies that support pedestrian-friendly transit streets include:

- Complete and connected pedestrian networks consisting of high-quality, buffered, and accessible sidewalks and trails providing convenient and direct access to transit.
- Slower auto speeds along pedestrian-friendly streets to create a safe and comfortable pedestrian environment.
- Well-marked, conveniently located, and safe crossings designed for people of all ages and abilities.

### Why It Matters

- A complete, continuous, and comfortable pedestrian network supports transit access and use by all ages and abilities.
- Well-marked and well-placed crossings help people connect safely and conveniently to transit.
- Lower speeds, combined with landscaping and safe crossings provide a safer and more comfortable pedestrian environment.

### Considerations for Implementation

**Connected networks:**

- Support the implementation of Denver Moves: Pedestrians and Trails.
- Prioritize streets that connect to transit: Prioritize pedestrian improvement projects on streets that connect to transit.
- Landscape buffers: On streets with higher speeds and more vehicles, provide a wide buffer between the sidewalk and street for a more comfortable experience. Preferred widths vary by street type, though generally wider buffers and sidewalks provide the best pedestrian experience.

**Social paths:**

- Formalize well-worn social paths to transit stops or stations.

**Pedestrian zones:**

- Provide pedestrian zones free of obstructions such as utility poles, sign posts, and trash cans.

**Wayfinding:**

- Use wayfinding to provide connections from sidewalks and trails to transit; integrate information into service maps and online planning tools, like RTD’s Trip Planner tool.

**Universal design:**

- Apply universal design principles to meet the needs of transit riders with disabilities. Limit driveway curb cuts, provide level grades, and reduce cross-slopes to make sidewalks safer and more comfortable for all pedestrians, including those using mobility devices.
Considerations for Implementation, continued

Safe speeds:

- Design all streets, including transit streets, to promote safe speeds. Consider traffic calming elements including curb extensions, median refuge islands, and on-street parking to encourage lower vehicle speeds through design.
- Adjust traffic signal timing to encourage travel at safe speeds.
- Reduce lane widths and curb radii at intersections to slow overall speeds and turning movements.
- Clearly post and enforce speed limits near transit stops and stations.
- Consider implementing special reduced speed zones near transit stops and stations.
- Where it is not possible to reduce speeds, the street could include separation between the sidewalk and vehicular traffic, such as a sidewalk buffer with landscaping or on-street parking.

Well-Marked Crossings:

- Striping and other treatments: Use striping and special paving or paint to clearly mark crossings.
- Frequent crossings: Provide frequent opportunities to cross transit streets with traffic signals or appropriate measures per the Denver Uncontrolled Pedestrian Crossing Guidelines.
- Midblock crossings: Provide midblock crossings at transit stops located far from signalized intersections. If necessary, enhance crossings with signs and lights. For example, the median crossing island and flashing lights at 30th Avenue and Downing Street encourages driver awareness and yielding, thereby improving pedestrian access to and from transit.
- Leading pedestrian intervals: Where appropriate, install leading pedestrian intervals or dedicated pedestrian crossing phases, the walk signal during every signal phase, and place limits on red light turns.
- Shortened crossings: Shorten crossing distances through lane rechannelizations (e.g., road diets) or on-street geometric changes such as curb bulbs or extensions and median refuge islands.
- Curb ramps: Provide designated pedestrian crossings with curb ramps and other ADA-accessible treatments.
- Audible and responsive signals: Evaluate the need for audible countdown signals and responsive pushbuttons at signalized crossings near transit stops for visually-impaired transit riders.
DENVER VISION ZERO ACTION PLAN

Denver’s commitment to Vision Zero starts with the belief that safety is a top priority and that serious injuries and fatal crashes should be eliminated in Denver by 2030.

Speed reduction is an essential Vision Zero strategy. Higher vehicle speeds not only increase the risk of a crash, but also increase the risk of serious injury or death. The effects of speed are most pronounced for pedestrians, who are least protected. More visible pedestrian crossings and shorter distance crossing also improve the pedestrian environment and access to transit.

In support of Denver Vision Zero, the Denver Transit-Friendly Streets Guide encourages the improve crossings near transit stops and stations and support safe speeds for transit streets.

DENVER MOVES: PEDESTRIANS AND TRAILS PLAN

The Denver Moves: Pedestrians & Trails plan will help make walking a viable and primary way for people to get around town and access recreation comfortably and safely. With input from the community, the plan identified citywide needs and defined priorities for improving and connecting Denver’s pedestrian and off-street trail network by examining costs, funding options, and policies required to achieve this vision. The Denver Transit-Friendly Streets Guide builds upon this vision.

Source: Tefft, Brian C. Impact speed and a pedestrian’s risk of severe injury or death. Accident Analysis & Prevention. 50. 2013.
COMMUNITY HIGHLIGHT: PEDESTRIAN ACCESS TO TRANSIT

DENVER

Speed tables combine crosswalks with speed humps to slow traffic and provide a greater visibility of people in the crosswalk.

Wide sidewalks and amenities such as a bench and trash receptacle at this bus stop on 17th Avenue create a furniture zone that provides a buffer between the street and sidewalk.

SEATTLE, WASHINGTON

The pedestrian-friendly streetscape provides a landscape buffer between street and sidewalk, marked crossings, and curb ramps.

Source: Toole Design Group
BICYCLE ACCESS TO TRANSIT

What This Is

According to the 2013 RTD Bike-Transit User Survey, a significant percentage of RTD customers travel three miles or less to park-and-rides or light rail stations. The quality of the walking and biking environment around transit facilities can greatly affect how far people are willing to travel to reach transit. High-quality bicycle facilities that are connected to frequent and major transit corridors expand the catchment area of transit and increase the number of people bicycling to transit. High-ease-of-use bicycle facilities are attractive to all types of bicyclists because they offer separation from motor vehicle traffic.

Additional resources for improving bicycle access include Denver’s Bikeway Design Guidelines and Denver’s Bike Boulevard Design Guidelines.

Why It Matters

- Safe and comfortable bicycling facilities that connect to transit expand the reach of transit and can increase transit ridership.

Considerations for Implementation

- Support the implementation of Denver Moves: Bicycles.
- Provide appropriate, context-sensitive bicycle facilities to serve transit. On streets with higher speeds and more motor vehicles, protected bicycle lanes or shared-use paths offer greater comfort. On streets with low traffic speeds and volumes, neighborhood bikeways may be appropriate.
- Where it is not possible to install a high-ease-of-use bikeway on or connecting to a transit street, provide a high-ease-of-use facility on a nearby parallel street.
- At and around transit stations, reduce conflicts by separating bicycle and transit vehicles.
- Where appropriate, provide site-specific treatments including bicycle-transit bypasses, such as the 18th Street island along the Free MetroRide route. These special lanes provide a path for bikes to pass stopped transit vehicles and clarify interactions between passengers and bicyclists.
- When designing intersections, consider bicycle movements to reduce conflicts between bicycle and other modes.
- Use wayfinding to provide connections from dedicated bicycle facilities to transit (like the Cherry Creek Trail and 14th Street protected bikeway).
- Integrate bicycle access information into mobility platforms.
COMMUNITY HIGHLIGHT: BICYCLE ACCESS TO TRANSIT

PORTLAND, OREGON

An integrated transit corridor in Portland helps people safely and comfortably connect to transit.

MINNEAPOLIS, MINNESOTA

This Bike Boulevard in Minneapolis, Minnesota provides a comfortable and safe street for people biking by using traffic calming measures to slow speeds.

FORT COLLINS, COLORADO

Green lane markings in Fort Collins, CO, clearly show how bikes interact with transit and travel through an intersection comfortably and safely.
BIKE SHARE INTEGRATION

What This Is

Bike share provides self-service rental bicycles for short-term use. Bike share allows people to take one-way trips by renting a bicycle at any self-serve bike stations and returning it to any other bike station within the system’s service area. Denver B-cycle is an example of a bike share system in Denver.

Why It Matters

- Bike share provides a convenient transportation option for transit riders to connect to and from transit.
- Provides access to bicycles at one or both ends of a transit trip without the need to find public bicycle parking at a stop/station or use on-board bicycle storage space.

Considerations for Implementation

- Place bike share stations at or adjacent to transit stops and stations to provide easy modal transfers.
- Work with RTD and other partners to explore integrating bike share and other transportation options into a mobility platform and provide convenience to customers.
- Work with bike share companies to add bike share capacity to support access to transit.
- Market bike share and transit together as one integrated system.
**BICYCLES ON TRANSIT**

**What This Is**

Allowing bicycles on transit vehicles (buses and trains) encourages bicyclists to utilize transit and take their bicycles with them to their destination. Most RTD transit vehicles are equipped to carry bicycles inside or outside the vehicle:

- Front racks on buses.
- Under-bus storage for regional bus routes (e.g., the Flatiron Flyer).
- Hooks and designated bicycle areas on light rail and commuter rail (e.g., the University of Colorado A Line).

**Why It Matters**

- Supports access to transit by allowing transit riders to conveniently bring bicycles on transit vehicles, particularly from transit stops that lack secure bicycle parking or bicycle share stations.
- Allows for more seamless first and final mile connections on both ends of a transit trip (e.g., from home to transit and then from transit to their destination).

**Considerations for Implementation**

- Work with RTD and other jurisdictions in the RTD region to determine how additional bicycle storage areas can be accommodated on buses and rail vehicles.
- Provide designated bicycle storage space on rail vehicles.
- For passengers unable to lift bicycles to fit on upright racks, provide horizontal bicycle storage spaces on transit vehicles where possible.
- Provide signage and storage information at stops and stations, inside transit vehicles, and online.
- For transit routes that have high transit rider volumes and/or have at-capacity designated bicycle areas on vehicles with no option of expansion, implement more secure parking and bike share options at stops/stations.

*An RTD bus in Denver carries a bicycle on the front rack.*

Source: Toole Design Group
**SHARED AND ON-DEMAND MOBILITY INTEGRATION**

**What This Is**

Shared and on-demand mobility are part of the multimodal transportation system that can provide a mobility option to connect people to and from transit. Shared mobility options support the growing expectation that transportation is flexible and convenient.

Car share enables people to rent cars on a short-term, as-needed basis, paying only for the time the car was used. Car share supports lower vehicle ownership. Denver currently supports two models of car share:

- **Traditional (e.g., Zipcar):** Cars are picked up and dropped over at one location.
- **Point-to-point (e.g., Car2Go):** Cars are picked up at one location and dropped off at another location. Point-to-point car share is particularly useful to connect to and from transit because transit riders can pick-up or drop-off car share vehicles near transit stops and stations.

On-demand ride services, often called Transportation Network Companies (TNCs), are point-to-point transportation services that are scheduled and paid for using an online application. Three companies currently operate in the Denver region: FlitWays, Lyft, and Uber. These services provide first and final mile solutions between transit and origins and destinations.

**Why It Matters**

- Provides an important first and final mile connection to and from transit.
- Available as a “back-up” option if transit riders miss the transit or bus and need to reach their destination quickly.
- Provides connections to transit when there are limited walking or bicycling options.

**Considerations for Implementation**

- Provide dedicated car share parking spots near transit stops and stations.
- Where possible, designate loading zones with signs and pavement markings for on-demand ride services near transit stops and stations.
- Where greater development is expected near transit, plan dedicated car share parking spaces to accommodate future demand.
- Provide wayfinding signage between car share and transit.
- When possible, market shared and on-demand mobility and other transportation services alongside transit.
- Work with RTD and other partners to integrate car share, on-demand ride services, and other transportation options into a mobility platform and provide convenience to customers.
- Promote the use of shared on-demand mobility options to reduce the number of single-occupant vehicles and help meet Denver’s mobility and environmental goals.
COMMUNITY HIGHLIGHT: SHARED AND ON-DEMAND MOBILITY INTEGRATION WITH TRANSIT

DENVER
Dedicated car share parking in front of Denver Union Station provides convenient access to transit.

BROOKLYN, NEW YORK
Designated Lyft pick-up and drop-off zones are well marked outside of Barclays Center.

Source: Toole Design Group
Source: Nelson\Nygaard
ON- AND OFF-STREET PARKING MANAGEMENT STRATEGIES

What This Is

Many cities have an oversupply of parking which encourages the use of automobiles over other modes. By updating the local zoning code to reduce the parking minimums, determine parking demand based on actual use, and promote shared parking arrangements, cities can reduce developer costs and support the development of transit-rich neighborhoods.

Parking strategies could include:

- Reduce the amount of off-street parking required.
- Allow shared parking in off-street facilities between land uses that have different parking needs at different times of the day; for example, parking that is shared between a hardware store that operates primarily in the daytime and a restaurant that experiences peak demand at night requires fewer parking spaces to meet overall demand.
- Price parking dynamically depending on use and time of day.

Why It Matters

- Allows cities to use their parking resources more effectively and reduce the attractiveness of driving.
- Revenue generated from dynamically-priced parking can be invested back into the community to pay for access improvements.
- Encourages use of other modes of transportation instead of driving alone.

Considerations for Implementation

- Eliminate minimum off-street parking requirements near frequent transit service and in smaller buildings that are not as likely to generate high demand.
- Determine parking requirements based on actual use at comparable locations.
- Promote off-street parking to be shared by land uses that have different parking needs at different times of day.
- Dynamically price parking based on use and time of day.
- Implement priced parking near key destinations along frequent transit service corridors.
- Provide programs and incentives that encourage travelers to carpool or use transit instead of driving alone.
COMMUNITY HIGHLIGHT: PARKING MANAGEMENT STRATEGIES

KING COUNTY, WASHINGTON

King County Metro’s Multi-Family Residential Parking Calculator provides an estimate of the number of parking stalls needed per multi-family development. The tool is map-based and provides parcel-level estimates, offers customized scenario-building, and can help determine how much parking is appropriate for a development.

Source: King County Metro

BERKELEY, CALIFORNIA

In Berkeley, the city has developed the goBerkeley pilot program to make traveling easy in key areas of the city, such as Downtown, Telegraph/Southside, and Elmwood. As shown in the image, goBerkeley uses Premium and Value Zones and demand-based pricing to achieve one to two open parking spaces on every block. Street signs indicate the maximum number of hours people can park in that space, the zone, the applicable hours and days of the week, and where to pay for parking.

Source: goBerkeley
PARK-AND-RIDES

What This Is

Park-and-rides provide a place for cars and bicycles to park adjacent to high-capacity transit. Park-and-rides can be covered garage structures or surface parking lots.

Why It Matters

- Expands the reach of transit by allowing people to bike, drive, and get dropped off.
- Supports transit ridership.

Considerations for Implementation

- Ensure park-and-rides support multimodal and shared and on-demand mobility access.
- Integrate park-and-rides into the surrounding street network and land uses.
- Provide clear pedestrian and bicycle access, wayfinding, passenger information, short- and long-term bicycle parking, dedicated car share parking spaces, and loading zone for on-demand ride services.
- Prioritize carpool and vanpool parking at park-and-ride lots and near transit facilities to help encourage people to share rides.
- Explore shared parking concepts and potential partnerships for park-and-ride spaces during peak hours.

The Orchard light rail station includes a park-and-ride facility.

Source: Streetsblog Denver
Transit supportive programs and policies can encourage more Denver residents, commuters, and visitors to take transit and also support other citywide goals. This section provides a high-level overview of some of the programmatic approaches to leverage the investments in transit by improving awareness and understanding. Programs and strategies include:

- Partnerships with employers
- Integrating transportation demand management into development review
PARTNERSHIPS WITH EMPLOYERS

What This Is

Employees are an important target audience for transit because their travel patterns are predictable. Employer outreach engages workers to increase awareness and encourage the use of non-drive-alone travel options to and from work. There are a variety of outreach activities for employers, such as promotional campaigns, direct outreach to employees, informational resources (e.g., online content or mobile apps), and transit pass programs.

Considerations for Implementation

- Support the development and efforts of the City’s Transportation Demand Program (page D-105 and page D-106)
- Expand the role of transportation Management Associations (TMAs) in educating, promoting, and catalyzing employees and residents to shift toward transit and non-auto transportation modes.
- Partner with employers, advocacy groups, and others to conduct direct outreach to employees.

Why It Matters

- Employers value transportation services that help their workforce get to and from the job.
- Transportation Management Associations (TMA) in the Denver area have been successful in engaging employers and managing these partnerships.

CURRENT PARTNERSHIP SUCCESS

Employer partnerships are already strong in Denver. Denver has a history of partnerships between the city, businesses, and transportation advocacy groups, including the Transit Alliance, Downtown Denver Partnership, Bike Denver, and Walk Denver. These groups combine forces to support more walkable, bikeable, and transit friendly streets.

A corridor-focused travel options program, 36 Commuting Solutions, provides transportation options programming to employers along the US 36 corridor, which connects Denver and Boulder.
INTEGRATING TRANSPORTATION DEMAND MANAGEMENT INTO DEVELOPMENT REVIEW

What This Is

Transportation Demand Management (TDM) programs can be incorporated at the time of new development by incentivizing or requiring these programs as part of the development review process. Developments that support TDM—for example, by providing on-site car sharing and discounted transit passes—substantially reduce driving by tenants and require less parking overall. Programs and requirements vary by geographic location and range from requiring developers and/or property owners to develop a complete TDM plan with performance monitoring to requiring a one-time installation of bicycle, pedestrian, or transit-supportive amenities and infrastructure.

Considerations for Implementation

- Work in partnerships with the development community to define the parameters of the requirements.
- Identify geographic locations or thresholds (e.g., number of employees or square footage) where TDM will be required as part of the development process.
- Align geographic locations with the frequent transit network.

Why It Matters

- Ensures programs and infrastructure are implemented to help employees and tenants use travel options.
- If these options are not considered as part of the development review process, they might be implemented after-the-fact or not at all.
- Ensures buy-in and investment in travel options from the private sector.

WHAT IS TRANSPORTATION DEMAND MANAGEMENT?

Transportation Demand Management (TDM) includes various strategies to shift the how, when, and/or where of people’s travel behavior to increase transportation system efficiency and reduce single occupancy vehicle (SOV) trips. TDM also helps to ensure that transit-supportive programs and infrastructure are implemented in coordination with one another.
COMMUNITY HIGHLIGHT: INTEGRATING TDM INTO THE DEVELOPMENT PROCESS

DENVER

The City of Denver has recently created a TDM Program. Elements of this program include:

■ TDM programming for the City’s 13,000 employees. Internal TDM efforts are evaluated to determine the effectiveness and scalability for all Denverites.

■ Integration of TDM into development review process. One example is requiring specific TDM design standards along transit corridors to ensure that site plans provide desired access to transit stops.

■ TDM resources, commute trip reduction targets, and materials for employers, building owners/managers, and other relevant groups to provide to their constituents.

PASADENA, CALIFORNIA

The City of Pasadena adopted requirements for Transportation Management Programs that require development projects that meet certain thresholds to provide employee transportation information services, a transportation plan, and an annual progress report. Large mixed-used developments like the one shown below would require a TDM program plan.
Example Transportation Options Programs

PUBLIC INFORMATION AND MARKETING CAMPAIGNS

A lack of information is often a barrier to riding transit. Public information and marking campaigns can help promote, educate, and encourage the use of transit and be an effective method for promoting key messages such as safety and environmental benefits. Campaigns can also help raise awareness about existing and new transit services and facilities.

Targeted or individualized campaigns can be used to educate people who are unfamiliar with their local transit options. These campaigns can increase the likelihood that residents, employees, and visitors will consider using transit, therefore generating ridership for new transit improvements.

In 2015, a unique partnership in the Portland region between TriMet, the City of Milwaukie, and Metro developed an individualized marking campaign to help promote the regional newest rail line (the Orange line connecting downtown Portland to Milwaukie). Outreach included door-to-door distribution of informational materials, e-newsletters, and community events.

Source: TriMet

TRANSIT PASS PROGRAMS

Transit pass programs encourage residents, visitors, and employees to use transit by reducing the cost of riding transit. Transit pass programs also:

- Broaden the awareness of transit service
- Provide a convenient payment method
- Attract new transit users and support existing transit users
- Stimulate economic development by attracting more employers that are interested in making transit more accessible for their employees

Employees are more likely to use transit if the fare is free or subsidized through a pass program. In many cities, transit pass programs are offered to downtown employees, ensuring that a city’s largest employment base has affordable options and incentives to take transit.

RTD offers multiple fare pass programs – at the time of developing Denver Moves: Transit, the RTD Pass Program Working Group (2018) was developing a number of recommendations for low income fare programs, discounted fares for youth, and updated EcoPass, Neighborhood, and College Pass programs. The City will work with key partners to support the implementation of and address the trade-offs associated with the approved recommendations.