DENVER MOVES: DOWNTOWN
Executive Summary
Denver Moves: Downtown is the guiding framework for the future of the downtown mobility network. It establishes a clear strategic vision. In support of that vision, it includes a tactical roadmap for achieving that vision through short-term improvements, major Signature Projects, and policy and design standards.

Plan Process & Project Efforts
Over the course of approximately two years, this planning process has examined mobility downtown in detail. Building on a State of the System report, this plan presents a set of improvements for downtown that have been identified, evaluated, and prioritized through close stakeholder and public interaction.

Downtown Mobility Vision
To support the continued growth of Denver’s vibrant city center, downtown’s transportation systems will safely accommodate more people by encouraging healthy mobility options, prioritizing the pedestrian experience, and efficiently moving goods.
Signature Projects

Through this process, several projects were identified as having significant benefits to mobility in downtown that warranted further development. These projects, called Signature Projects, will help us achieve our vision for downtown in a smart, equitable, and timely manner, while making downtown a better place for people to interact and conduct business.

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This chapter outlines strategies for achieving our collective vision for downtown. This plan includes XX projects, nearly all of which are currently unfunded. Many of the projects identified in the process require study and/or design prior to construction.

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Executive Summary

Denver Moves: Downtown is the guiding long-term framework for the future of the downtown mobility network. It establishes a twenty-year strategic framework that includes near-term improvements, major infrastructure projects, and supporting policy recommendations.
**Problem Statement**

Downtown Denver is at a critical juncture. Prior to the COVID 19 pandemic, demands on the downtown street network were placing strain on the transportation’s system to meet current and future needs. More people downtown, a technology advancements, and increased freight and delivery to places new demands on the constrained streets to provide safe, convenient mobility. When the pandemic is over, we expect most of these trends will resume. Denver Moves: Downtown was developed to identify projects and strategies to address these challenges both presently and into the next twenty-years.

Several recent plans have been completed with independent recommendations for specific policy priorities, projects, modes or sub areas of downtown. Denver Moves: Downtown reviewed these recommendations and aligns them together cohesively in this plan.

**Changing Population and Employment**

Downtown Denver and the surrounding neighborhoods - RiNo, the Central Platte Valley, the River Mile (where Elitch Gardens exists today), and parts of the Golden Triangle - are expecting significant growth in households and jobs. In total, the area will add between 20,000 and 29,000 new households by 2040 – on top of the 18,000 that exist today¹. The same area is expected to add between 38,000 and 88,000 new jobs by 2040 – on top of the 126,000 that exist today.

**Increasing Travel Options**

New technologies are rapidly evolving and playing a core role in the transportation network. Transportation Network Companies have created a rise in the need for safe loading and unloading. Dockless e-bikes and e-scooters are increasingly popular modes for short trips within downtown, but often users do not understand or follow the rules about where these new “vehicles” are supposed to operate. The potential for autonomous vehicles is also expected to improve safety but also to increase vehicle miles traveled. As these new mobility options grow in popularity, our street design needs to evolve to provide each mode with safe spaces to operate.

**Increasing Demand for Deliveries**

As e-commerce continues to expand, delivery and freight movements are undergoing a substantial shift. In the past, many deliveries happened on a daily basis – and with a growing economy and a broader mix of uses downtown (commercial, residential, retail, entertainment), those type of deliveries are increasing. With a surge in grocery and meal delivery and steadily increasing online shopping, consumers are also demanding more real-time delivery. Those demands will require better loading zone access for those door-to door deliveries. Looking further ahead, drone deliveries may require planning efforts to focus not just on roadways and land-based infrastructure, but on airborne travel as well.

Downtown Denver is built out and the 80 feet of right-of-way between most buildings is all there is to work with. Denver Moves: Downtown has developed recommendations for how to more efficiently use that space to improve everyone’s mobility, safety and comfort in Downtown.

¹ Source: DRCOG; Denver Office of Economic Development; Economic & Planning Systems
Key Challenges

As a result of changing trends in transportation, technological advances, and increased travel demand on the city’s streets, now is the time to take a fresh look to ensure the downtown transportation system can better serve the needs of people in both the present and the future.

Capacity of the Downtown System (per hour)
The National Association of City Transportation Officials estimates person throughput for a single travel lane for different modes of travel as shown below. This represents the capacity of a single 10-foot lane (or equivalent width) by mode at peak conditions with normal operations.

<table>
<thead>
<tr>
<th>Mode</th>
<th>Capacity (per hour)</th>
</tr>
</thead>
<tbody>
<tr>
<td>600-1,600 PRIVATE MOTOR VEHICLES</td>
<td></td>
</tr>
<tr>
<td>1,000-2,800 MIXED TRAFFIC WITH BUSES</td>
<td></td>
</tr>
<tr>
<td>7,500 TWO-WAY PROTECTED BIKEWAY</td>
<td></td>
</tr>
<tr>
<td>4,000-8,000 TRANSITWAY, BUS OR RAIL</td>
<td></td>
</tr>
<tr>
<td>9,000 SIDEWALK</td>
<td></td>
</tr>
<tr>
<td>10,000-25,000 DEDICATED TRANSIT LANES</td>
<td></td>
</tr>
</tbody>
</table>

Move More People
There were an estimated 700,000 people living within the city limits of Denver in 2017. By 2040, that number is projected to grow 30% to nearly 900,000. With the population growth, comes increasing demand on a roadway network that cannot simply expand to accommodate the additional traffic. Denver will need to develop its downtown roadway network differently than how it's been done in the past. This means transportation must shift from private vehicles to prioritize more efficient modes. Modes like transit, biking and walking can move more people more efficiently in less space.

Adapting to Transportation Innovations
Shifts in technology and societal preferences are forcing the City and County of Denver to rethink its mobility networks. Downtown’s mobility network must focus on the safe, comfortable, and efficient movement of people. One person’s daily travel might include transit, scooters, autonomous shuttles, or ride-sharing.

Safety and Person Comfort
The City and County of Denver’s commitment to Vision Zero (meaning no more traffic deaths and serious injuries) requires particular focus on the high-risk areas throughout the city, many of which are concentrated in downtown. Denver Moves: Downtown addresses these issues through near-term safety improvements on roadway segments (such as along 15th Street), intersection reconfigurations, traffic calming, and careful retiming of traffic signals to reduce conflicts. Of particular importance are people who are not in vehicles, either walking or on wheels.

This plan identifies several major corridors and 15 specific intersections for improvements that are designed to directly address their safety.
Vision & Community Process

The vision for Denver Moves: Downtown is to support the continued growth of Denver’s vibrant city center. Downtown’s transportation systems will safely accommodate more people by encouraging healthy mobility options, prioritizing the pedestrian experience, and efficiently moving goods.

Denver Moves: Downtown is built on a broad strategic framework. Its vision and goals were developed from stakeholder and community input, recommendations from other relevant planning efforts, and a detailed analysis of the current state of the downtown mobility network. The vision and goals respond to three major drivers of change: growing population, economic vitality, and overall quality of life.

Community Engagement by the Numbers

60 Community Task Force organizations
800+ project email subscribers
155 stakeholder organizations
950+ survey responses
300+ stakeholders
Recommendations and Actions

Plan Goals:

**Accessibility**
Make downtown accessible and easy to navigate for all users.

**Inviting Green Space**
Design streets as inviting spaces for people with opportunities to enhance the natural environment.

**Mode Shift**
Create additional capacity through mode-shift by providing a variety of attractive travel choices.

**Safe Streets**
Make downtown streets safe.

**Economic Vitality**
Provide a transportation system that supports a thriving downtown economy.

**Flexible & Adaptable**
Create a flexible and adaptable street network.

In order to address these goals, the plan identifies a set of recommendations that include:

**Signature Projects**
This plan includes a network of Signature Projects that are considered key improvements toward meeting the mobility goals outlined above. These address network gaps and resolve high-priority safety and mobility concerns.

**Complete Modal Networks**
People walking (including those using mobility devices) are the top priority in the design of all streets and are the heart of the transportation system as everyone is a pedestrian at some point during their trip. Nearly 200 blocks - out of approximately 300 total blocks - are recommended for pedestrian improvements. Additionally, major improvements in the bicycle and transit networks could mean that 70 percent of streets will have a high-comfort bikeway, and the downtown area will have four miles of new bus-only lanes. Next, people doing business and moving goods contribute to our vibrant economy and are prioritized. Finally, mobility for people driving is still an important part of our transportation future.

**Policies and Partnerships**
The plan includes policy recommendations designed to facilitate a transition to a more balanced transportation system that addresses issues identified through the plan process. These include several policies aimed at creating safer streets and streets that meet the needs of people walking and on wheels.

**Early Actions**
The plan includes an approach to implementation of the vision through actions that are feasible in the short term and build toward the vision. These early actions will allow implementation on a faster time-line through low-cost, high-benefit improvements.

The ability to implement the vision for downtown Denver’s transportation networks involves adherence to the goals of this plan, focus on the long-term network development, implementation of projects that have the highest impact on mobility, and an ability to be flexible and tactical through implementation of the vision for specific corridors via a continuum of improvements at varying levels of improvement as opportunities arise that leverage federal and state funding as well as other resources.
Plan Process & Project Efforts

A two-year year planning process has examined Downtown’s mobility in detail. Using the data from a State of the System report that describes deficiencies in the transportation network, this plan presents a set of improvements that were identified, evaluated, and prioritized through close stakeholder and public interaction.
State of the System

A State of the System report was generated at the beginning of the process to identify key challenges and mobility trends. This is a summary of that report. For the full report, visit www.denvergov.org.

Downtown has approximately 18,000 households and could add between 20,000 and 29,000 households by 2040. This is due to major developments like the River Mile and the rapid growth of multifamily housing throughout downtown, which is forecasted to be concentrated in Lower Downtown and in the Golden Triangle. Downtown is also projected to grow as an employment center. Today there are 126,000 jobs in downtown, with the potential for 38,000 to 88,000 additional jobs by 2040. New employment opportunities will be distributed throughout downtown with pockets of growth in Lower Downtown, the Central Business District, and the Golden Triangle.

Between 54,000 and 62,000 people move into, out of, or through downtown Denver during peak hours. By 2040, this number is projected to increase by 40 percent to 76,000 to 87,000 people. The majority of people coming into and moving out of downtown today do so in their own car, but some streets dedicate an outsized portion of their right-of-way to automobile travel, when considering the number of people that use the streets through various modes. For example, the figure below shows that while over half of the right-of-way on 18th Street is dedicated to automobile travel, greater than 50 percent of people traveling on that street are on transit. With a growing population and a limited right-of-way, there is not enough space to accommodate single-occupancy vehicles. Based on the data and modeling, multimodal solutions are needed to address the transportation demands in downtown.

Downtown PM Peak Hour Mode Share and Right-of-Way Allocation

% of people moving in and out of Downtown

<table>
<thead>
<tr>
<th>Mode</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Driving</td>
<td>54%</td>
</tr>
<tr>
<td>Transit</td>
<td>21%</td>
</tr>
<tr>
<td>Carpool</td>
<td>11%</td>
</tr>
<tr>
<td>Walking</td>
<td>11%</td>
</tr>
<tr>
<td>Biking</td>
<td>2%</td>
</tr>
<tr>
<td>Freight</td>
<td>1%</td>
</tr>
</tbody>
</table>

Person counts were obtained by collecting the number of pedestrians, bicyclists, and vehicles at each signalized intersection that serves travelers going into or out of downtown during the peak hours. Transit ridership data shared by RTD was used to determine the number of people using buses and trains to either access or leave downtown. The percentages illustrate the share of total travelers that used each mode. The number of people carpooling was not observed, but was estimated based on the breakdown of single-occupancy and multi-occupant vehicles in the DRCOG 2015 Transportation Analysis Zone Origin-Destination data. Vehicular counts could include motorists both entering and exiting downtown during a single trip, thereby causing vehicle mode share to be artificially inflated.

Right-of-Way Allocation vs. Actual Modeshare on 18th Street

<table>
<thead>
<tr>
<th>Mode</th>
<th>Actual</th>
<th>Right-of-Way</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walk</td>
<td>2%</td>
<td>11%</td>
</tr>
<tr>
<td>Drive</td>
<td>29%</td>
<td>58%</td>
</tr>
<tr>
<td>Bike</td>
<td>15%</td>
<td>6%</td>
</tr>
<tr>
<td>Travel</td>
<td>36%</td>
<td>15%</td>
</tr>
</tbody>
</table>
During the second half of the 20th Century, many aspects of downtown’s transportation system placed an emphasis on vehicular travel. In fact, 30 percent of public right-of-way is allocated to parking private automobiles. Peak-hour congestion occurs along Speer Boulevard, Broadway, Colfax Avenue, Lincoln Street, 20th Street, and Park Avenue, among others, as well as at a several key intersections. These bottlenecks cause delays throughout the network for automobiles and for buses. The figure above highlights key areas of congestion during the peak hours.

This plan envisions being more efficient with the use of space for automobiles through several intersection reconfiguration projects to address these bottleneck issues and make movements for people on all modes more simple and safe.

The level of people bicycling to, from, and through downtown has increased significantly in recent years. Downtown already includes over 20 miles of on- and off-street bicycle facilities. Despite the growing network of high-comfort facilities, more than 60 percent of downtown blocks have recorded crashes between a bicyclist and vehicle in the past five years. Analysis of existing and proposed bicycle infrastructure in downtown helped highlight gaps in the bicycle network that Denver Moves: Downtown could address.
People Riding Transit

This plan envisions building on the existing successful transit system by investing in more dedicated bus lanes and expansion of circulator/shuttle services.

Downtown is well served by a network of local and regional buses, light rail, and commuter rail service. With the exception of the B Line, all light rail and commuter rail service operates at 15-minute frequencies during the peak hour. Buses that operate every 10 to 15 minutes provide service throughout downtown and serve neighborhoods to the south. Transit service to the north tends to be less frequent, with buses operating every 30 minutes during the peak hour. Transit ridership analysis found an almost even split between rail and bus trips during peak hours. Transit offers the greatest potential for increasing person-throughput downtown, currently carrying 22 percent of travelers and 43 percent of commuters during peak hours. The MallRide carries 66,000 people per day and is relied upon for multiple downtown connections, including Civic Center Station, Union Station, and destinations along 16th Street Mall.

People Walking

This plan envisions making downtown a safer, more comfortable, and easier place to walk, through substantial investment in the pedestrian experience.

Downtown Denver is one of the most walkable areas of the city. A variety of factors contribute to downtown’s walkability, notably its land use density and diversity, as well as its underlying infrastructure and complete network of sidewalks and crossings. Over 29,000 people walk on each block of the 16th Street Mall each day, and many other downtown streets carry more than 5,000 pedestrians per day. Unfortunately, approximately 70 percent of downtown blocks have recorded crashes between pedestrians and drivers over the past five years. These types of crashes are especially prevalent on the High Injury Network (Colfax Avenue, Broadway, Lincoln Avenue) which was developed as a part of the Denver Vision Zero Action Plan (2017). Other key findings of the State of the System report include the identification of blocks that lack landscaping and other elements that contribute to a comfortable walking environment.
**Summary of Prior Planning**

Several prior planning efforts provided foundational elements for Denver Moves: Downtown. They developed guiding principles and strategic ideas for achieving a higher share of multimodal travel into, around, and out of downtown. This section provides summaries of relevant plans and highlights the elements that are relevant to Denver Moves: Downtown.

**Downtown Multimodal Access Plan / 2005**
In 2005, the City and County of Denver, the Regional Transportation District, the Colorado Department of Transportation, the Downtown Denver Business Improvement District, and the Denver Regional Council of Governments partnered to develop a vision of a fully multimodal downtown. The study envisioned that private vehicles would not meet future travel demands in downtown and therefore established a plan for building out each mode for future travel without automobiles.

**Downtown Area Plan / 2007**
The Downtown Area Plan was the result of a 2007 partnership between the City and County of Denver, Denver Civic Ventures, Inc., and the Downtown Denver Partnership. The five vision elements of the plan include:
- A prosperous city– attracting jobs, growth and improvement
- A walkable city – putting pedestrians first
- A diverse city– being a socially and economically inclusive place
- A distinctive city– cultivating a mosaic of urban districts
- A green city– building a greener Denver

**Blueprint Denver / 2019**
Blueprint Denver is a citywide land use and transportation plan adopted in 2019. The plan calls for a mobility network that ties together neighborhoods and for a right-of-way that accommodates all users and prioritizes pedestrians on streets. The plan states that the street network is built out, and increasing travel demand needs to be met through increasing non-driving modes. A number of the Blueprint Denver recommendations support Denver Moves: Downtown goals, including increasing mode share for non-driving modes, leveraging new technologies for improving mobility, improving travel safety, diversifying curb uses, and implementing transit priority facilities.

**Denver Moves: Bicycles / 2011**
Denver Moves: Bicycles was developed with the goals of bringing high ease-of-use bicycle facilities within a quarter-mile of every Denver household and achieving 15 percent bicycling and walking commute mode share by 2020, a goal not yet met.

**Denver Moves: Transit / 2019**
Denver Moves: Transit, finalized in 2019, seeks to meet the travel needs of a growing population through improvements to the transit system. Plan goals were to enhance service, make transit more user-friendly, connect neighborhoods and regional destinations, make transit more equitable, and establish sustainable funding sources to support the future transit system.

**Denver Moves: Pedestrians & Trails / 2019**
Denver Moves: Pedestrians & Trails seeks to establish a fully integrated pedestrian network that connects to transit and bicycle facilities throughout the city. To accomplish this, the plan identified both a prioritized set of sidewalk projects and a general set of infrastructure improvements that would enhance the comfort and safety of pedestrian facilities.

**Comprehensive Plan 2040 / 2019**
In 2019, The City and County of Denver adopted the Comprehensive Plan 2040 as the 20-year vision for Denver and its people, which reflects the voice of thousands who have shared their hopes, concerns and dreams for the future. One of the six vision elements is “well connected, safe and accessible places that are easy to get to, no matter how we want to travel.”
Downtown Multimodal Improvements

Legend
- Transit Hub
- Light Rail
- Transit
- Pedestrian Improved Streets
- Bicycle Facilities
- I-25 Express Lane
Public & Stakeholder Involvement

Project Kickoff
Denver Moves: Downtown launched in the fall of 2018 with a highly targeted engagement strategy. The primary focus was to establish a strong supportive base with a diverse group of project-area community leaders to achieve the following strategic communications goals:

- Reach diverse audiences
- Create awareness of our collective aspirations for downtown
- Provide resources for all people to engage
- Identify, develop, and inform community leaders
- Integrate communication efforts

Surveys & Key Themes
A survey was deployed to understand how people travel to, from, and around downtown, as well as how they would prioritize improvements to make their experience traveling downtown better. Results from the survey helped identify several key themes:

- A desire to travel by rail, bicycle or transit
- A lack of convenience, safety and access are main barriers to using preferred modes of transportation
- More protected bicycle lanes and a greater buffer between traffic and people walking would make downtown streets feel safer
- Faster and more reliable transit along with a more connected bicycle lane network would improve experience traveling around downtown

Establish CTF & Key Stakeholder Groups
At key decision-making points, Community Task Force (CTF) and Key Stakeholder group meetings were held to vet essential project information in advance of a wide variety of community meetings. The CTF and Key Stakeholder groups were comprised of influential community members within or directly adjacent to the study area.

Transit Visioning Workshop
Drawing on the expertise of local stakeholders and national transit practitioners, a two-day Transit Visioning Workshop sought to generate guidance on the future of downtown transit and to form the initial outlines of plan scenarios that would feature different approaches to developing the future downtown transit network.

Ideas from the workshop were synthesized into the following three themes:

- Optimize the Existing System. Carry out major improvements to the existing system
- Hubs & Shuttles. Create more major stations on downtown periphery, connected by circulators in the core
- Build on Denver Moves: Transit. Implement and capitalize on the Denver Moves: Transit recommendations
Community Partner Events & Downtown Focus Groups

The project team provided regular updates for City Council, community leaders, and other major organizations in the downtown focus area, such as the Mayor’s Bicycle Advisory Committee, Inter-Neighborhood Cooperation Transportation Committee, and the Mobility Council of the Downtown Denver Partnership throughout the course of the project. Team members attended neighborhood meetings and events, such as Denver Streets Congress and Bike to Work Day, to inform over 300 community members about the process.

As Denver Moves: Downtown moved into its final phase, the project team worked with downtown stakeholders and advocacy organizations that represented community members with special considerations to solicit feedback that informed recommendations leading up to the final round of broader public engagement.

Final Public Meeting

A virtual meeting was hosted during June of 2020 due to the social distancing requirements of the COVID-19 pandemic. The City and County of Denver provided an overview of the planning effort to the public and provided details on the 12 Signature Projects. Additional project details and video vignettes of the Signature Projects were made available online. There were 75 people that attended the live event, with another and the recording of the event received an additional 100 views.

Meeting participants were invited to provide feedback on the considerations that should be made during the implementation of each project. Each project survey received around 200 individual responses, which was used to inform next steps.

Engagement by the Numbers

- **Community Task Force organizations**: 60
- **Stakeholder organizations**: 155
- **Stakeholders**: 300+
- **Project email subscribers**: 800+
- **Survey responses**: 950+
Equity in Engagement

The Denver Moves: Downtown project team committed to stakeholders at the kick-off in 2018 to provide an inclusive public process that was designed to start highly targeted and then gradually extend out to the broader public. At the initial Stakeholder Working Group meeting dozens of community leaders, representing a diverse range of interests in the city center, provided feedback and insight into the draft vision and goals. That conversation served as a common project understanding and framework for months to come.

A universal thread among the six goals was the desire for equitable and accessible multimodal infrastructure and a well-connected transportation system to remove existing barriers.

1. Create additional capacity through mode-shift by providing a variety of attractive travel choices
2. Make downtown streets safe
3. Create a flexible and adaptable street network
4. Make downtown accessible and easy to navigate for all users
5. Provide a transportation system that supports a thriving downtown economy

The public involvement process for Denver Moves: Downtown was closely aligned with the technical milestones so that the very people who walk, bicycle, take transit, drive, etc., in Downtown Denver had an opportunity to inform the future of Denver’s transportation network.
Over 18 months, the project team periodically reviewed who had been most engaged to-date in order to refine the public involvement plan to make further assurances of an accessible and equitable process.

The ongoing analysis found diverse levels of engagement, ranging from groups and individuals attending multiple meetings to others who did not attend meetings or interact with the project team at other engagement touch points.

Based on this information, the project team developed a strategic focus group plan to reach underserved stakeholders such as hourly shift workers, labor unions, people with disabilities, people experiencing homelessness, etc.

The main themes from those conversations helped shape the final list of recommended Signature Projects.

- Organized and predictable curb organization for improved line of sight (see project Curb Space Organization, page 70)
- Cognitive considerations for signalized intersections
- Communicating changes to transit (multilingual)
- Improved bus shelters (lighting, seating, etc.)
- Incentives for less parking
- Use of colors, sounds, etc. for hearing/vision impaired individuals
- Transit-only lanes for transit on-demand and emergency vehicles (see projects on Broadway and Larimer, 15th, and 17th Streets)
- Buffer consistency and type
- Dynamic parking for hourly employees and/or in-and-out workers
- Free ride network for low-income, homeless, young and elderly (see project MetroRide Extension, page 60)

See Chapter 4 - Signature Projects for how this feedback was incorporated.
Peer Cities Review

During the winter of 2019, the project team conducted a review of peer cities to determine how their infrastructure improvements may have influenced mode choices. This review was used as one of the criteria for assessing potential outcomes of Denver Moves: Downtown proposed projects. Denver was compared to a range of ten peers in both the United States and internationally:

- Atlanta
- Boston
- Dallas
- Los Angeles
- Minneapolis
- Portland, OR
- Seattle
- Sydney (Australia)
- Vancouver (Canada)
- Washington, D.C.

Census Journey to Work and demographic data were tracked for each city to create comparison profiles with Denver. The peer cities’ transportation improvements over time were compared to travel behavior over the same time periods. It was found that cities implementing best practices had downward trends in the share of people driving alone, while Denver has had the opposite trend (chart to the right), indicating that Denver needs to be even more aggressive in its efforts.

The ten cities were grouped into three categories: context cities, cautionary tales, and success stories. Context cities were municipalities like Atlanta, Boston, and Portland with similar population sizes and commute times.

Cautionary tales and success stories were the two categories that most informed the project screening process for Denver Moves: Downtown.

Cautionary tales were cities like Dallas and Los Angeles that have made significant improvements in rail transit but continue to lose riders on their transit systems, and the share of people driving alone rises. After evaluating infrastructure improvements in these two cities, the project team concluded that building out rail transit without making corresponding improvements in a bus network results in a transit system that may attract some choice riders but does not serve the full community adequately.

Examples of success stories emerged from Minneapolis, Seattle, and Washington, D.C. Some were related to best practices for developing bicycle, pedestrian, and transit infrastructure that encourages people to use those modes; others had effective approaches to curbside management and implementation of aggressive Transportation Demand Management strategies.

Denver’s Mobility Action Plan set a goal of reducing drive-alone commuters to 50 percent by 2030. This is an ambitious target, even by the standard of cities well regarded for their focus on multimodal options.
Minneapolis
In addition to building out a light rail system and locating stations in areas with sufficient residential density and jobs to be transit supportive, Minneapolis is adding bus service and creating bus-only lanes both in downtown and on freeways. Transit ridership gains have been steady since these improvements were implemented.

Washington, D.C.
The city invested in protected bicycle infrastructure and bike-share earlier than other peer communities, which has yielded a high mode share for bicycles. In addition, Washington, D.C., uses a commercial loading zone permit program that allows permit holders to use metered parking spaces to make deliveries during certain hours.

Seattle
Seattle has invested heavily in increasing bus frequencies and adding new routes. 25 percent of households were within a 10-minute walk of bus service in 2015. That share has risen to 67 percent today. In addition, Seattle has piloted new approaches to managing freight through programs that consolidate shipments and deliveries in certain neighborhoods, reducing truck traffic.

Best Practices
While single improvements cannot be tied to mode shift, certain approaches to implementing and managing mobility systems were more likely to change travel behavior. Significant lessons learned from the peer cities review include:

- **Frequent bus service with dedicated lanes is a strong alternative to driving**
- **Transit improvements yield the highest benefit when paired with complementary land uses**
- **Bicycle improvements take time to mature. People are more likely to ride once a network of comfortable facilities is available**
- **Creative curb management programs can help improve freight operations**
- **Transportation Demand Management policies and programs can reduce peak hour demand on our transportation system**

The full review of peer cities is available in the Appendix.
Downtown Mobility Vision

The vision for Denver: Moves Downtown is to support the continued growth of Denver’s vibrant city center. Downtown’s transportation systems will safely accommodate more people by encouraging healthy mobility options, prioritizing the pedestrian experience, and efficiently moving goods.
Plan Vision & Goals

Denver Moves: Downtown is built on a broad, strategic, long-term framework. Its vision and goals were developed from stakeholder and community input, recommendations from other relevant planning efforts, and a detailed analysis of the current state of the downtown mobility network.

The vision and goals respond to three major drivers of change: growing population, economic vitality, and overall quality of life. Downtown Denver has added 14,000 households since 2000 and is expected to have an additional 24,000 by 2040. More than 200,000 people will work downtown in 46 million square feet of office space (up from 36 million square feet) by 2040.

The vision provides the underlying basis for responding to these forces. The six goals introduced in the following pages define specific aspects of that vision. The goals were ultimately connected to specific and measurable success criteria, which led to the network and project recommendations of the plan.
Project Goals & How The Report Addresses Them

**Mode Shift**
Create additional capacity through mode-shift by providing a variety of attractive travel choices.

**Safe Streets**
Improve the safety of downtown streets for all.

**Inviting Green Space**
Design streets as inviting spaces for people with opportunities to enhance the natural environment.

**Flexible & Adaptable**
Create a flexible and adaptable street network.

**Accessibility**
Make downtown accessible and easy to navigate for all users.

**Economic Vitality**
Provide a transportation system that supports a thriving downtown economy.

The following metrics represent the outcomes if all recommendations in this report were fully implemented.
**Mode Shift**
Create additional capacity through mode-shift by providing a variety of attractive travel choices

- **30 Miles** of future bike lanes
- **4 Miles** of future transit lanes
- **5 Miles** of future FreeRide network

**196** Blocks of future improved pedestrian space

**12** Future new or improved connections to the regional bicycle network

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**Safe Streets**
Improve the safety of downtown streets for all

- **15** Intersections identified for safety improvements
- **10** Policies identified that prioritize safety
- **0** Injuries and fatalities in support of Denver’s goal Vision Zero
Inviting Green Space
Design streets as inviting spaces for people with opportunities to enhance the natural environment

12
Best practices identified for design of the public realm

54
Blocks identified for green street infrastructure

23
Blocks identified for new tree planting

Flexible & Adaptable
Create a flexible and adaptable street network

100%
Inclusion of adaptable designs in projects

4.5
Miles of 2-way conversions

9
Policies identified for greater flexibility

The following metrics represent the outcomes if all recommendations in this report were fully implemented.
**Accessibility**
Make downtown accessible and easy to navigate for all users

50+ Signals identified for retiming for pedestrian ease of use

70% Of streets with high-comfort bikeways for users of all ages

**Economic Vitality**
Provide a transportation system that supports a thriving downtown economy

700 New loading zones

4 Miles of new bus-only lanes

5 Miles of free transit service

15% Increase in person-moving capacity of downtown streets
**Pedestrian Improvements**

Space and amenities provided for pedestrian access, safety, and comfort are fundamental to the livability of downtown Denver.

The Downtown Area Plan, Blueprint Denver, and Denver Moves: Pedestrian & Trails identify downtown as a “Pedestrian Priority Area,” or an area where there are sidewalks sized to serve demand, patio seating areas, enhanced crossings for a safer environment, and signal timings that maximize pedestrian convenience. As trip-making demand increases downtown, and as the population of downtown and downtown-adjacent neighborhoods surges, pedestrians will become an ever-greater share of people using our streets.

The improvements in pedestrian facilities highlighted here are capital improvements that will help the City and County of Denver achieve all of the Denver Moves: Downtown goals.

Beyond the capital improvements, the City and County of Denver will prioritize pedestrians through the policies and regulations outlined in the Implementation chapter.

**Safer Streets**

Helps achieve Denver’s Vision Zero goal of zero traffic-related deaths and serious injuries by 2030

**Shared Streets**

Streets designed for low traffic speeds and volumes that prioritize pedestrians and encourage gathering and socializing

**Streetscape**

Active, attractive places created through trees, seating, expanded sidewalk treatments, pavers, stormwater treatments, and community identifiers

**New Trees**

Part of a healthy urban forest with health and wellbeing and increased property value benefits
Proposed Pedestrian Improvements

Signature Projects

- Larimer Street Transitway & Two-Way Conversion
- Bannock Street Bikeway
- 15th Street Bicycle Connection
- Broadway North Grand Boulevard
- Broadway Central Grand Boulevard
- Wewatta & 16th Streets Multimodal Improvements
- Central 15th & 17th Streets Multimodal Improvements
- Curb Space Organization (Not Shown)
- Pedestrian Signal Phasing (Not Shown)

Legend
- Signature Pedestrian Project
- Shared Street
- Streetscape Safety & Comfort Improvement
- Funded Project
- New/Improved Cherry Creek Trail Access
- Intersection Safety Improvements
- New Trees (Urban Forest Initiative Round 1)
- Streets with High Water Quality Opportunities
Transit Improvements

Downtown is the most transit accessible area within the Denver Region, where RTD’s commuter rail, light rail, and most bus routes converge.

Denver Moves: Transit envisions a grid system of transit routes serving the city with increased speed, reliability, and frequency. Such improvements will further enhance the accessibility to downtown or the Golden Triangle by transit. Some improvements identified in the Denver Moves: Downtown planning process have already been implemented through the simple use of paint and signs, such as new bus-only lanes on 15th Street and 17th Street. Speed and reliability improvements have been proposed on several corridors and at several intersections in downtown. Expansion of the Downtown Circulator Network would transform the way people move in and around downtown. Improvements to stops and stations would improve the safety, comfort, and convenience of the transit system.

Transit Lanes

Dedicated space for transit within the roadway aimed at boosting reliability, travel speed, capacity, and overall performance

Speed & Reliability Treatments

Additional Transit Signal Priority and Queue Jump Lanes improve speed and reliability

Enhanced Transit Stops/Stations

High quality shelters, real-time arrival information, and off-board fare collection improve transit attractiveness, accessibility and operations

Downtown Circulator Network

RTD’s network of existing (solid lines) and proposed (dashed lines) free transit service downtown.
Proposed Transit Improvements

*This map has been updated to reflect the shift of the transit recommendations from Larimer Street to Blake and Market Streets as a result of the permanent closure of Larimer Square and redesign of Larimer Street from Speer Boulevard to 14th Street.

Signature Projects

- Larimer Street Transitway & Two-Way Conversion
- Broadway Central Grand Boulevard
- MetroRide Extension
- Central 15th & 17th Streets Multimodal Improvements
- Central Platte Valley Gondola

Legend

- Signature Transit Project
- Proposed Transit Improvement
- Funded Transit Lane
- Existing Transit Lane/Transitway
Bicycle Improvements

The proposed downtown bicycling network will connect people on facilities that allow bicyclists of all ages and abilities freedom to move on two wheels. The long-term vision for the bicycling network is to provide high-comfort facilities on 70 percent of downtown streets. Additional connections to the regional network will improve access to downtown for all, and for emerging modes of transport.

High-Comfort Bikeways

High-comfort bikeways in downtown generally take the form of protected bike lanes, buffered bike lanes, or shared-use paths. High-comfort bikeways can sometimes be implemented at low cost with posts and paint like those on 15th Street today. Build-out of the proposed bicycling network is possible through this method.

Long-Term Improvements

As funding becomes available and the bicycle network matures, upgrades to these facilities can be made to provide semi-permanent hard infrastructure that better protects cyclists from autos. Intersections can be improved to provide room for all users to interact safely. Maintaining flexibility to expand or modify the bicycle facilities is important if more people choose modes with two wheels for mobility.

Micromobility

The bicycle network will serve as the primary network for bicycles, as well as e-bikes (electric motor assisted bikes), scooters and e-scooters, and other mobility devices that need separation from people walking, driving, or riding transit. If these modes continue to increase their mode share, a flexible bicycle network will be needed to allocate more space for these users.
Proposed Bicycle Improvements

Signature Projects
- Bannock Street Bikeway
- 15th Street Bicycle Connection
- Broadway North Grand Boulevard
- Broadway Central Grand Boulevard
- Wewatta & 16th Streets Multimodal Improvements
- Central 15th & 17th Streets Multimodal Improvements
- Lower Downtown Bikeways

Legend
- Signature High-Comfort Bikeway Project
- Proposed High-Comfort Bikeway Improvement
- Funded High-Comfort Bikeway
- Existing High-Comfort Bikeway
- Other Existing Bikeway
- New/Improved Cherry Creek trail Access
Auto & Freight Improvements

Downtown vehicular improvements are focused on system optimization and safety, acknowledging that widening downtown streets is not feasible.

Physical expansion of automobile capacity downtown is not feasible. The downtown network is built out, and no additional right-of-way is available to provide space for more cars and trucks. Congestion in the downtown grid is severe in some locations during peak hours of travel, and improvements to bottlenecks can positively impact user experience for a variety of modes, notably transit. Additionally, in most locations, alleys need to continue to handle service needs to reduce the demand on the streets.

Denver Moves: Downtown focuses on addressing peak hour bottlenecks through system optimization strategies and minor geometric changes that can help ease congestion during these few hours of the day. It must be acknowledged that in order for downtown mobility to improve, space must be allocated to other, more efficient modes. The proposed projects for automobile and freight mobility improvement include several intersection reconfigurations, curb space management, safety improvements, and two-way street conversions.

Reconfigured Intersections

Reconfiguration of the most complex intersections repurposes underutilized roadway space, improves conditions for all users, and contributes to a reduction in traffic congestion and crashes.

Two-Way Streets

Conversion of one-way streets to two-way streets simplifies navigation and improves safety by reducing travel speeds and collisions while bolstering economic vitality.

Curb Space Management

Replacement of unproductive uses with productive uses, such as expanded transit stops, loading/delivery zones and public space, eases congestion.
Proposed Auto & Freight Improvements

Signature Projects

- Larimer Street Transitway & Two-Way Conversion
- Broadway North Grand Boulevard
- Central 15th & 17th Streets Multimodal Improvements
- Curb Space Organization (Not Shown)

Legend

- Signature Median Project
- Signature Two-Way Street Conversion Project
- Proposed Two-Way Street Conversion
- Funded Two-Way Street Conversion
- Existing Two-Way Street
- Reconfigured Intersection
Prioritizing Street Improvements

The downtown street network is constantly evolving. New projects mean new interests, and new developments mean new stakeholders. Having a vision of how to prioritize the movement of people in this environment is important for Denver moving forward.

Downtown is first and foremost a pedestrian priority area. This means that space for pedestrians should be the first consideration when designing a downtown street. The diagram below shows which priority comes second for downtown streets. This helps developers, city planners, and engineers work with street design teams to strike the right balance in allocating right-of-way for projects. This guidance should be cross-referenced with the Complete Streets Design Guidelines.

**Pedestrian Priority:** Complete multimodal networks prioritize the most efficient modes first. People walking and rolling are the heart of the transportation system as everyone is a pedestrian at some point during their trip.

- Blueprint Denver

**Pedestrian-Enhanced Streets**

Streets with a focus on creating vibrant, walkable places with wider, enhanced sidewalks

**Transit Priority Streets**

Streets that allow transit to be rapid and reliable with special attention to accessible, safe, and enhanced transit stops and stations

**Bicycle Priority Streets**

Streets that prioritize comfort and convenience for bicyclists
Proposed Street Priorities

Legend
- Red: Transit Priority
- Green: Bicycle Priority
- Yellow: Pedestrian Priority
**Reinforcing Existing Efforts**

The city is constantly changing. That means that projects currently in the planning or design stages will be implemented in coordination with this plan. Several are highlighted here.

The projects on these pages are at various stages of development, from planning to design. Some will be ready for construction in 2020, while others are still years from breaking ground. Either way, the teams planning and designing these projects have been integral to the development of Denver Moves: Downtown. These initiatives will kick-start the concepts in this plan and are consistent with its vision and goals. Some of these projects are considered early actions of this plan, particularly if they are currently funded, such as the Broadway Bikeway between Speer Boulevard and 19th Street, which is incorporated into the Broadway Grand Boulevard – Central Signature Project.

**Colfax Bus Rapid Transit**

Design and implementation of center-running bus rapid transit with a dedicated transit lane in each direction from Broadway to Yosemite.

**Vision Zero: Intersection Reconfigurations**

The City and County of Denver is committed to reducing serious injuries and fatalities from transportation to zero; several downtown projects will help achieve this vision.

**16th Street Mall Reconstruction**

Rebuilding and modernizing of the 16th Street Mall to create a safe, vibrant and welcoming space for everyone.

**18th/19th Transit & Bike Lanes**

Improvements will add transit and bike lanes, improving safety and operations for the Free MetroRide and bicyclists.
Bannock Closure: Connecting the Denver City and County Building to Civic Center Park through the closure of Bannock Street between Colfax and 14th Avenue will create additional important public space and remove conflicts between automotive traffic and people.

Status: Design; Constructed: 2020

Community Network Bike Facilities: The City and County of Denver is building out the Community Bike Network, including along 17th Street downtown, which is proposed to have a left-side eastbound protected bike lane between Union Station and Broadway.

Status: Design
Anticipated Construction: 2021 - 2023

The 5280 Trail: The Downtown Denver Partnership is leading efforts to create The 5280 Trail, a bold, visionary project that will transform how the public right-of-way is used in Downtown Denver.

Status: Design of 21st Street
Construction: TBD Depending on Funding

Broadway Bikeway: Between Speer and 16th, the City and County of Denver plans to construct a two-way protected bikeway on Broadway to better connect the Cherry Creek Trail with Capitol Hill, the Golden Triangle, and Upper Downtown.

Status: Conceptual Design
Construction: TBD Depending on Funding
Signature Projects

Through the evaluation process, several projects were identified as having significant benefits to mobility in downtown that warranted further development. These projects, called Signature Projects, achieve Denver’s vision for downtown in a smart, equitable, and timely manner, while making downtown a better place for people to interact, conduct business, and enjoy amenities.
Signature Projects

- Larimer Street Transitway & Two-Way Conversion
- Bannock Street Bikeway
- 15th Street Bicycle Connection
- Broadway North Grand Boulevard
- Broadway Central Grand Boulevard
- MetroRide Extension
- Wewatta & 16th Streets Multimodal Improvements
- Central 15th & 17th Multimodal Improvements
- Central Platte Valley Gondola
- Lower Downtown Mobility Lanes
- Curb Space Organization (Full Study Area)
- Pedestrian Signal Phasing (Full Study Area)
# Signature Projects

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<tr>
<th>Project</th>
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<td>Between Speer Boulevard and 26th Street</td>
<td>Two-Way Travel, New Transit Service, A Better Larimer Square</td>
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<td><strong>B</strong> Bannock Street Bikeway</td>
<td>Between Speer Boulevard and Colfax Avenue</td>
<td>Partial Closure, High-Comfort Bikeway</td>
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<td><strong>C</strong> 15th Street Bicycle Connection</td>
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<td><strong>E</strong> Broadway Central Grand Boulevard</td>
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<tr>
<td><strong>F</strong> MetroRide Extension</td>
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<td>Project</td>
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<td><strong>Wewatta &amp; 16th Streets Multimodal Improvements</strong></td>
<td>Wewatta Street from Speer to Park Avenue and 16th Street from Wynkoop to Chestnut</td>
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<td><strong>Central 15th &amp; 17th Multimodal Improvements</strong></td>
<td>15th Street from Cleveland to Larimer and 17th Street from Broadway to Wynkoop</td>
<td>🚌 Exclusive Bus Lanes</td>
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<td>🎈 Enhanced Streetscaping</td>
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<td><strong>Central Platte Valley Gondola</strong></td>
<td>Between Union Station and Highland Neighborhood</td>
<td>⚒️ Connected Neighborhoods with Aerial Tram/Gondola</td>
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<td><strong>Lower Downtown Mobility Lanes</strong></td>
<td>Between Speer Boulevard and Broadway</td>
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<td><strong>Curb Space Organization</strong></td>
<td>Throughout Downtown</td>
<td>🚌 Apply Modern Curb Space Management to Improve Utility of Streets</td>
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<td><strong>Pedestrian Signal Phasing</strong></td>
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<td>⚒️ Pedestrian Safety &amp; Mobility Through Signal Operation</td>
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</tbody>
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Larimer Street
Transitway* & Two-Way Conversion

Between Speer Boulevard and 26th Street
• Two-Way Travel
• New Transit Service
• A Better Larimer Square

This project envisions Larimer Street as an extension of RTD’s FreeRide Network, with fast, frequent, reliable bus service in exclusive lanes. Eventually, Larimer Square could be closed to automobiles and with limited commercial loading times, which would enhance the public space and expand transit opportunities.

Larimer Street is bookended by two vibrant retail districts—Larimer Square on the south and an emerging restaurant and entertainment district in RiNo on the north. Further, it is the most direct connection between the Auraria Campus and downtown.

Transit & Bicycle Connections

Install Protected Bike Lanes
Creates a shared street north of Broadway to the RiNo neighborhood

Replace Two Lanes with Transit Circulator
Provides frequent service to retail districts

Connects downtown with 38,000 students

Boosts placemaking and pedestrian/bicyclist focus

Start Transit Service to Auraria
Connects downtown with 38,000 students

FUTURE BIKEWAY CONNECTION
FUTURE TRANSIT CONNECTION
EARLY ACTION IMPLEMENTATION
2022 Amendment:
*In 2020 during the COVID-19 Pandemic, Larimer Square closed to vehicles including transit. Larimer Square is expected to remain permanently closed to vehicles. In addition, Larimer Street between the Auraria Campus and 14th Street was redesigned through a stakeholder process. The outcome of the redesigned cross-section for Larimer and the ongoing closure required the transit recommendation to shift to Blake and Market Streets which has been updated in the “Lower Downtown Bikeways” signature project on page 69.
Bannock Street Bikeway

Between Speer Boulevard and Colfax Avenue
- Partial Closure
- High-Comfort Bikeway

Bannock Street is envisioned as both a place to hold festivals and as a bicycle gateway to downtown and the Civic Center from the Cherry Creek Trail. The street is already closed to vehicular traffic north of 14th Avenue, and high-comfort bikeways are added the length of the corridor.

This project will help to connect downtown and the Golden Triangle and will expand multimodal access to important cultural and civic destinations.

The Golden Triangle is undergoing a renaissance as a cultural and residential urban centerpiece. This project will make this neighborhood more walkable and bicycle-friendly while providing a

Transit & Bicycle Connections

Close Street at Civic Center
To improve safety, placemaking, and park space

Add Buffered or Protected Bike Lanes
Improves comfort level for bicyclists

Pilot Protected Bike Lanes with paint and bollards

Connect to 5280 Trail
Improves connection to the La Alma/lincoln Park neighborhood

Add Connections to the South
to Cherry Creek, Hospital District, and Lincoln Park Neighborhood

FUTuRE BIKEWAY CONNECTION FUTuRE TRANSIT CONNECTION EArLY AcTION IMPLEMENTATION
**Typical Block Layout**

- **A**: Sidewalks Buffered by Protected Bike Lanes and Medians
- **B**: High-comfort Protected Bike Lane
- **C**: High-comfort Bicycle Crossing
- **D**: Crosswalk
- **E**: Curb Extension for Pedestrian Safety
- **F**: Green Stormwater Infrastructure
- **G**: Continuous Tree Canopy

**Cherry Creek Connections**

- 5280 Trail Connection
- New Bridge
- Hospital District Connection

**Closure at Civic Center**

Recently painted mural between 14th Street and Colfax Avenue as part of the Bannock Street closure project.
**15th Street**

**Bicycle Connection**

Between Larimer Street and Central Street
- Travel Lane Reduction
- Streetscaping
- High-Comfort Bikeway

This project completes the 15th Street vision as the key bicycle corridor through, into, and out of downtown. It creates a greener public realm along an important pedestrian corridor, while remaining a key automobile and transit corridor.

Considerations for implementation include:
- Implementation in conjunction with transit improvements and potential rerouting of bus routes onto Speer Boulevard to the west.
- Implementation of the Central Platte Valley Gondola (the proposed gondola between Union Station and Lower Highlands).
- Examination of ways to improve speed and reliability for buses on the corridor.

### Transit & Bicycle Connections

**Add Protected Bike Lanes**
Between Larimer and Central Street
- Pilot using low-cost infrastructure. Consider two-way cycle track on one side

**Remove one Traffic Lane per Direction**
To expand multimodal facilities, consider incorporating bus/bike lanes
- Pilot using low-cost infrastructure.

**Transition the Bike Lane to North Side**
Through two-stage crossing

**Reconfigure 15th & Blake Intersection**
Improves pedestrian and bicyclist safety

**Extend Transit Lane**
Improves connection for local bus routes that use Blake Street and Market Street
At 15th & Blake, the newly extended bike lane requires the removal of a left turn lane on 15th Street. The intersection is redesigned as a protected bike intersection.
Broadway North

Grand Boulevard

Between 19th Street and Market Street
• Streetscaping
• High-Comfort Bikeway
• Automobile/Freight Safety & Operations

The Broadway Grand Boulevard project transforms the way people move between Five Points, Curtis Park, and Uptown into the downtown core. Thoughtful optimization of intersection operations and general circulation keeps cars moving while allowing significant streetscape and multimodal improvements.

This holistic approach to north Broadway answers community-based planning efforts dating back at least a decade that have identified the importance of creating a more welcoming environment at downtown’s eastern edge.

**Illustrative Plan**

**Consistent Landscaping**
Greatly increase pedestrian comfort

**5280 Trail Crossing Enhanced**
Provide easier and safer crossing

**Left Turns Eliminated**
Simplifies the complexity of some intersections
Typical Block Layout

- **Sidewalks Buffered by Protected Bike Lanes and Medians**
- **High-comfort Protected Bike Lane**
- **High-comfort Bicycle Crossing**
- **Crosswalk**
- **Curb Extension for Pedestrian Safety**
- **New Public Plaza**
- **Continuous Tree Canopy**

**Protected Bike Lanes**
Allow bicyclists to use Broadway

**New Public Space**
Created by restricting traffic at 24th Street intersection

**10-Foot Planted Median**
Improves pedestrian comfort when crossing
The Broadway & 22nd Avenue and Broadway & Park Avenue intersections both operate poorly and present safety concerns. At Park Avenue, heavy pedestrian traffic conflicts directly with the heavy northbound, left-turn movement.

**Short-Term | BROADWAY/PARK AVE**
Reroute left turns from Broadway to both Park Avenue and 22nd Street to use Curtis Street and Arapahoe Street, respectively. This will improve both operations and safety. Additionally, restripe and change signs approaching Broadway on 22nd Avenue to better balance traffic volumes to lanes.

The 20th/Lincoln/Broadway intersection presents a unique and complex challenge along the Broadway corridor. This operations and safety project could be implemented in the short-term to relieve a bottleneck and improve safety.

**Phasing & Potential Early Action Implementations**

The 20th/Lincoln/Broadway/20th/California Street: Allow westbound bound right turns onto 20th Street to overlap with South-bound thru lanes and restripe 20th Street with two rights, two through lanes, and one left turn.

**Short-Term | BROADWAY/20TH**
Using paint and posts, reconfigure the Broadway/20th Avenue and 20th Avenue/Glenarm and Lincoln intersections to improve safety and operations for all modes. Modify signal operations at Broadway/California Street: Allow westbound bound right turns onto 20th Street to overlap with South-bound thru lanes and restripe 20th Street with two rights, two through lanes, and one left turn.
The Arapahoe Square neighborhood is currently one of the hottest spots for redevelopment in downtown. This neighborhood is experiencing rapid growth in both residential and commercial space. At the same time, public space is scarce in this area of downtown. Meanwhile, Broadway cuts through the grid at a 45-degree angle, creating safety and traffic operations issues. The opportunity exists to de-emphasize the role of automobile travel on Broadway, and create a public place in a neighborhood increasingly desperate for it-by closing Broadway between 19th and 20th Streets.

Similar closures of Broadway in New York have been successful at creating new public space, like Putnam Triangle Plaza in Brooklyn, NY.
Broadway Central
Grand Boulevard

Between 9th Avenue and 19th Street
• Streetscaping
• High-Comfort Bikeway
• Automobile/Freight Safety & Operations

The project completes the vision of Broadway as the heart of north-south travel in downtown. The long-term vision is for exclusive bus lanes and a two-way high-comfort bicycle facility that will transform the corridor into a true multimodal corridor. Complementary improvements to Lincoln Street enhance transit efficiency and intersection safety.

Broadway and Lincoln Street carry several high-frequency bus routes and several thousand automobiles at peak hour. This high volume of traffic means that these streets have become challenging places for people on foot or bicycling to move safely. The project prioritizes the safe movement of people in this important corridor.

Transit & Bicycle Connections
**Typical Block Layout**

- **A** Sidewalks Buffered by Protected Bike Lanes and Medians
- **B** High-comfort Protected Bike Lane
- **C** High-comfort Bicycle Crossing
- **D** Crosswalk
- **E** High-capacity Transit Lane
- **F** Transit Stop/Station
- **G** Continuous Tree Canopy
- **H** Two-Way Conversion

**Improved Intersection Safety**

Example of quick implementation using inexpensive materials on 15th Street.

Permanent implementation long-term.
**Intersection Improvements**

- Provide southbound bus-only lane into Civic Center Station
- Improve/extend crosswalk markings and domes
- Move signal pole to south side
- Add stained concrete at crossing
- Relocate Broadway crosswalks
- Provide southbound left turn phase
- Consider adding pedestrian signals

**Intersection Improvements**

- Make southbound Cleveland one-way to mid-block between 15th and 16th Streets
- Realign Cleveland Place to square up intersection
- Remove signal and crosswalk at Cleveland Place
- Provide southbound bus-only phase/queue jump
- Explore feasibility of mid-block crossing between 16th and 17th Streets
- Add bicycle wayfinding through plaza

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**Colfax Bus Rapid Transit**

Dedicated bus lanes

**Bus Lane Extension**

From 13th Avenue to 18th Avenue

**Intersection Improvements**

- Add bulb-outs on west side
- Add bicycle crossing markings
**Intersection Improvements**
- Reduce Court through lanes from 3 to 2 to improve pedestrian and bicycle facilities
- Widen 17th Avenue sidewalk(s)

**Bus Lane Extension**
From 19th Avenue to 17th Avenue

**Intersection Improvements**
- Adjust turn lanes approaching Broadway on 18th Avenue
- Create single-lane entry to Tremont Street for a more comfortable and safe pedestrian environment

**Bus Lane**
With queue jump at Lincoln Street

**Bus Lane Extension**
From 13th Avenue to 18th Avenue

**Intersection Improvements**
- Add bulb-outs
- Lincoln Street to 18th Avenue bus turn phase from right-side bus lane
- Short-term: Bus lane on 18th Avenue between Broadway and Lincoln Street; potential to convert to sidewalk in the long term
MetroRide Extension

Between Civic Center Station and Golden Triangle
• Connect More People Through Free Transit

Extending the MetroRide into the Golden Triangle, as originally planned, transforms how people move into and out of that neighborhood and the civic areas. The extension connects popular civic and cultural attractions to hotel and transit uses in the downtown core.

The connection between the rapidly expanding Golden Triangle neighborhood, its cultural attractions, Capitol Hill, and the rest of downtown has become increasingly important since the MetroRide first began service. Completing the vision for that service allows the City and County of Denver to increase mobility for residents of these neighborhoods.

Transit & Bicycle Connections

Key Destinations

1 Denver Union Station is the starting and ending point for the existing MetroRide route

2 Civic Center Station is a major stop for the MetroRide and many other transit services downtown

3 The Denver Art Museum is at the heart of the Golden Triangle neighborhood, surrounded by growing high-density residential developments, and a proposed site for a new transit stop/station
Network Context and Connections

Direct connection to:
- Free Downtown Transit Network
- Broadway Central Grand Boulevard
- 15th & 17th Streets Multimodal Improvements

Building on existing MetroRide service accommodates significantly more trips (both volume and type) through any combination of the following:
- Extension to Golden Triangle
- Increased frequency
- Expanded service hours

Extended Route
South along Broadway and Lincoln to 12th/Acoma
Wewatta & 16th Streets
Multimodal Improvements

Wewatta Street from Speer to Park Avenue and 16th Street from Wynkoop to Chestnut
- High-Comfort Bikeways
- Pedestrian Enhancements & Placemaking

The Union Station neighborhood should be the most walkable and bikeable area in the city. However, some streets were designed to prioritize automobile travel above other modes. This project transforms 16th and Wewatta Streets into pedestrian-transit-and bicycle-oriented streets that better capitalize on the major transit investments in the area. 16th Street is redesigned as an extension of the 16th Street Mall with access for commercial loading and unloading and parking. Wewatta Street is reduced to one lane in each direction with new protected bike lanes on each side.

Transit & Bicycle Connections

Add Buffered Bike Lanes
Protect bicyclists from automobile traffic

Pilot using low-cost infrastructure

Remove One Traffic Lane per Direction
Accommodates additional bicycle facilities

Relocated Bus Stop

Reconfigure 17th & Wewatta Intersection
Improves pedestrian safety and transit facilities

Pilot using low-cost infrastructure
**Typical Block Layout**

- **A**: Sidewalks Buffered by Protected Bike Lanes and Medians
- **B**: High-comfort Protected Bike Lane
- **C**: High-comfort Bicycle Crossing
- **D**: Crosswalk
- **E**: Curb Extension for Pedestrian Safety
- **F**: Transit Stop/Station
- **G**: Continuous Tree Canopy
- **H**: Green Infrastructure

**17th & Wewatta Intersection**

- **Create Transit Layover/Pasenger Loading Zones**
- **Remove Median and Extend Paving Across Intersection**
- **Relocate Bus Stop**

The 17th & Wewatta intersection is redesigned to be a pedestrian priority space. A raised intersection and adjusted stop bars with additional pedestrian signals enhance this pedestrian corridor.
Central 15th & 17th Streets
Multimodal Improvements

15th Street from Cleveland to Larimer and 17th Street from Broadway to Wynkoop
- Exclusive Bus Lanes
- High-Comfort Bikeways
- Enhanced Streetscaping

Near-term, planned improvements are establishing two bus lanes, two automobile and freight lanes, and a protected bike lane on both streets. Future improvements focus on transit boarding and alighting improvements to increase efficiency; streetscaping and placemaking; delivery and passenger pickup/drop-off zones; and enhanced bicycle facilities. To maximize capacity, 15th and 17th Streets largely remain one-way streets, and signal timing is optimized for transit movements.

Transit & Bicycle Connections

15th and 17th Streets are among the most challenging corridors in downtown for bicyclists and pedestrians. The vision for the future builds on the existing mobility function of 15th and 17th Streets by diversifying modal choices and ultimately positioning this couplet as the primary people-moving streets in the downtown core.
The long-term vision for 15th & 17th Streets replaces one of the transit lanes each way with increased pedestrian space or a flex lane with curb extensions at transit stops. These long-term goals help make these streets comfortable pedestrian environments.

Exclusive bus lanes on these streets was identified as an early action project during this plan and has already been implemented. Travel time savings for buses has been significant.
Central Platte Valley Gondola

Between Union Station and Highland Neighborhood
- Neighborhood connections via Aerial Tram/ Gondola

The Central Platte Valley Gondola would transform the way people move between the downtown core and the central city neighborhoods. Envisioned as a fast, frequent ride across I-25, the South Platte River, and the railroad tracks, it would reduce the time to walk between Lower Highland and Union Station to approximately three minutes and open up walkable access to the Sunnyside and Highland neighborhoods. The Central Platte Valley Gondola will be studied as part of the FreeRide network.

Transit & Bicycle Connections

15th Street is envisioned to transition to more of a multimodal street with bike lanes. Speer Boulevard is envisioned as a transit corridor. 20th Street is a major automobile and bus corridor. The series of three pedestrian bridges along the 16th Street alignment provide great pedestrian connectivity between Union Station and the Lower Highland neighborhood, although the distance and walk time can be a barrier to some.

The Sunnyside, Highland, and Lower Highland neighborhoods are important central city neighborhoods that are quite close to downtown but feel like they are much farther away because of physical barriers like I-25, the South Platte River, and the railroad corridors.

The three roadways that cross these barriers between 38th Avenue and 23rd Avenue—Speer Boulevard, 15th Street, and 20th Street—are operating near capacity today during peak periods. Additional roadway crossings may not be feasible in the near-to-medium term and may not be desired.

Potential Early Actions

Feasibility Study

The path to implementation of the Central Platte Valley Gondola starts with a feasibility study to explore operations, funding, and finance options.
**Concept Diagram**

![Image of a map illustrating urban gondolas with key locations such as Union Station, South Platte River, Commons Park, I-25, Chestnut Street, and Highlands Neighborhood.]

**Urban Gondolas**

- **La Paz, Bolivia**
- **Portland, Oregon**
Lower Downtown Mobility Lanes
Between Speer Boulevard and Broadway
• High-Comfort Bikeways

Blake Street and Market Street are the heart of Lower Downtown and are transformed into multimodal corridors with high-comfort bikeways. Bicycle operations are improved through infrastructure improvements and signal timing optimization.

This project closes a significant gap in the downtown bikeway network, greatly increasing the opportunity for vehicle-free trips into and within the heart of downtown. Bikeways enhance the function and placemaking ability of these important streets, capitalizing on the incredible public and private investments in Lower Downtown over the last 30 years.

Transit & Bicycle Connections

North and South Connections
LoDo Bikeways connect to 15th Street, 14th Street, and Cherry Creek Trail bicycle facilities to the south.

Market and 20th Street Intersection
A detailed, context-sensitive approach to carrying Protected Bike Lanes through this intersection is a proven method for reducing conflicts. According to the National Association of City Transportation Officials, 43 percent of urban bicyclist fatalities occur at intersections.
Blake & Market Corridor

BLAKE ST

MARKET ST

Add Buffered Bike Lanes
For improved safety for bicyclists

Remove Parking on One Side
For bike lane

Remove Parking on One Side and Travel Lane
For new bike lane and transit lane

*These concepts have been updated to include the shift of the transit recommendations from Larimer Street to Blake and Market Streets as a result of the permanent closure of Larimer Square and redesign of Larimer Street from Speer Boulevard to 14th Street. Design outreach on Blake and Market Street will be coordinated through implementation.
Curb Space Organization

Throughout Downtown
• Apply Modern Curb Space Management to Improve Utility of Streets

This project replaces unproductive uses of downtown curb space like parking with productive uses like expanded transit stops and stations, loading, and freight delivery zones, taxi and ridehailing passenger loading, public space, or green infrastructure. Repurposing curb space to accommodate current needs and new technologies makes downtown more vibrant, flexible, and better for businesses. This project requires updated policies and design guidelines to make downtown streets more efficient, navigable, and understandable.

This project supports the City and County of Denver’s goals of this Denver Moves: Downtown by providing better multimodal facilities (bus stops, bicycle parking), better public space (parklets and landscaping), more flexible use of street space (flex zones), and better economic vitality (doubling the number of loading zone spaces to 700).

Area-Wide Allocation of Curb Space
Example Implementations

Example 1
Existing Curb Lane & Land Use

Example 2
Existing Curb Lane & Land Use

Phasing & Potential
Early-Action Implementations

- Develop partnerships with Transportation Network Companies to identify and geofence passenger loading zones
- Establish a Freight Working Group to develop policy
- Develop flexible parking information signage
Pedestrian Signal Phasing

Throughout Downtown

• Improve Pedestrian Safety & Mobility Through Signal Operations

This project eliminates the all-pedestrian signal phase and changes the signal phasing so that pedestrian movements can happen at the same time as vehicular movements. A leading pedestrian or bicycle interval phase partially offsets safety concerns related to removing the all-pedestrian phase.

Traffic signals in central and eastern downtown have a separate phase for automobiles, buses, and bicycles that generally does not include pedestrians. An all-pedestrian phase is often the only phase during which to cross a street. Conflicts often arise because pedestrians ignore the “Don’t Walk” indication and cross during the green phase for traffic.

Phasing & Potential Early-Action Implementations

- Conduct a detailed study of the effects on pedestrian safety prior to implementation
- Reconsider green traffic signal/pedestrian phase conflict

Who Has The Right-of-Way? Example: 18th and Champa

Conflicting messages outlined in image. Mixed messages of the pedestrian “Don’t Walk” signal, vehicular green signal, and “Turning Vehicles Yield to Pedestrians” signs make driving and walking across intersections prone to conflict for all users, but particularly for pedestrians.
Project Significance

This project would benefit pedestrians in the following ways:
1. Simplify operations - make it clear when pedestrians have the right-of-way
2. Reduce the maximum wait time for pedestrians at intersections
3. More total walk time, less delay
4. Leading Pedestrian Interval has demonstrated safety benefits
5. Allow greater flexibility to provide additional phases, including bicycle phases and turn movement phases, increasing safety

Effects on Mobility & Safety

1. Pedestrian wait times at intersections reduced by as much as 24 seconds for some movements
2. Time for other movements will be gained in direct proportion to the time saved by removal of the pedestrian phase (minus the time dedicated to Leading Pedestrian Interval).
3. Bicycle phases can be added where needed much easier
4. Transit phases (transit signal priority) can be added where needed much easier
This chapter includes a collection of best practices and design options for implementing public realm improvements within existing rights-of-way in downtown Denver.
Public Realm Toolkit

The City and County of Denver is implementing new strategies for improving transportation infrastructure focused on an ability to adapt and be flexible, implement mobility and safety improvements quickly that impact people’s lives, and allow corridors to change over time. Transportation corridors will change over time and the City and County of Denver will monitor and address:

- The priority of each corridor: pedestrian, bicycle, transit, operations, etc.
- What the short-mid-and long-term targets are for the priorities of the corridor
- Land use and development
- Transportation network
- Funding for improvements
- Impacts of new technologies

To address how a corridor may evolve over time, this chapter provides a public realm toolkit that includes a variety of options from quick and lower-cost improvements to long-term and more permanent improvements. Treatments include a range of options for high-comfort bikeways, transit streets, the pedestrian realm, and safe intersections for people on bicycles. The ideas within the toolkit are intended to be a “menu of options” at varying levels of investment. Lastly, street design options are shown for Downtown Denver streets. Refer Complete Streets Design Guidelines for more information.

Analyzing corridors for implementation means evaluating how these factors can be addressed in short-term, medium-term, and long-term horizons, acknowledging that these different time horizons will allow different levels of improvement. In short, the process involves:

- Determining the existing characteristics of the corridor
- Understanding the priority mode of the corridor and future vision, including whether it is one-way or two-way
- Determining which factors need to be improved, to what degree per factor, and short-mid-and long term strategies to do so. This will help determine the basis for actions and investments.
# Toolkit: High-Comfort Bikeways

## Lowest Cost Treatments

Rapid high-comfort bikeway implementation using lower-cost, quick-build interim treatments such as paint, posts and rubber curbs.

<table>
<thead>
<tr>
<th>Cost Treatments</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lowest</td>
<td>Protected Bike Lane Separated by Paint, Posts, and Parked Vehicles</td>
</tr>
<tr>
<td></td>
<td>Protected Bike Lane Separated by Paint, Posts, and Rubber Curbs</td>
</tr>
</tbody>
</table>

## Medium Level of Investment

Involves the use of more costly permanent treatments, such as planters and concrete curbs.

<table>
<thead>
<tr>
<th>Level of Investment</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medium</td>
<td>Protected Bike Lane Separated by Paint, Concrete Caps, and Parked Vehicles</td>
</tr>
<tr>
<td></td>
<td>Protected Bike Lane Separated by Posts, Rubber Curbs, and Planters</td>
</tr>
</tbody>
</table>

## Highest Level of Investment

Typically involves larger capital street reconstruction with raised bike lanes, landscaping and stormwater capturing infrastructure.

<table>
<thead>
<tr>
<th>Level of Investment</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highest</td>
<td>Sidewalk-Level Protected Bike Lane Separated by Landscaping, Stormwater Capturing Infrastructure, and Parked Cars</td>
</tr>
<tr>
<td></td>
<td>Protected Bike Lanes Separated by Paint, Concrete Caps, Concrete Curb, Landscaping and Parked Vehicles</td>
</tr>
</tbody>
</table>
Protected Bike Lane Separated by Paint, Posts, and Rubber Curbs

Protected Intersection Separated by a Corner Wedge Using Paint, Posts and Rubber Curbs

Protected Bike Lane at a Transit Stop with a Modular Side Boarding Island

Protected Intersection Separated by Concrete Corner Islands Providing a Wide Setback Between Vehicles and the Bikeway

Sidewalk-Level Protected Bike Lane at a Transit Stop with a Concrete Side Boarding Island and Pedestrian Railings
**Toolkit: Transit Streets**

**Lowest Cost Treatments**
Quick-build and lower cost treatments for dedicated transit lanes

- One-Way Transit Street with Dual Curbside Bus Lanes Using Red Paint and Pavement Markings
- Two-Way Transit Street with Curbside Lanes Using Pavement Markings

**Medium Level of Investment**
Moderate cost and relatively quick build treatments, such as paint for transit lanes, signage, shelters and amenities

- One-Way Transit Street with Curbside Bus Lanes Using Red Paint and Pavement Markings
- Transitway With Center-Running Lanes Using Red Paint, Pavement Markings and Vehicular Access Restrictions (Trucks and Deliveries Permitted)

**Highest Level of Investment**
Typically involves higher level of design and investment for construction of curbs, platforms, and center-running transit

- Center-Running Transit Street with Median Stop and Left-Side Boarding
- Transitway With Center-Running Lanes Separated by Concrete and with Limited Vehicular Access Restrictions (Trucks and Deliveries Permitted)
Two-Way Transit Street with Curbside Bus Lanes Using Pavement Markings

Transitway With Center-Running Lanes Using Red Paint, Pavement Markings and Vehicular Access Restrictions (Trucks and Deliveries Permitted)

Transitway With Center-Running Lanes Separated by Concrete and with Limited Vehicular Access Restrictions (Trucks and Deliveries Permitted)

In-Lane Transit Stop with High-quality Shelter, Pre-Paid Boarding, and Next Bus Arrival Information

Concrete Side Boarding Island Stop with Near-Level Boarding, Extended Platform, Overhead Canopy, and Next Arrival Information
**Toolkit: Pedestrian Realm**

**Lowest**
Cost Treatments
Includes basic streetscape elements, such as adequate pedestrian zone, trees, and possibly some basic amenities like trash receptacles or benches

Trees Along Streets  
Basic Amenities, Such As Benches and Trash Receptacles

**Medium**
Level of Investment
Includes a greater level of pedestrian amenities, landscape and planting. May include signage or pedestrian lighting

Landscape and Planting Between Pedestrian Path and Street  
Larger Areas for Trees Along Streets

**Highest**
Level of Investment
Typically involves larger reconstruction providing enhanced pedestrian zones, plantings, signage, lighting, stormwater infrastructure and other amenities

Enhanced Pedestrian Zone with Street Trees, Pavers, and Extensive Lighting  
Stormwater Infrastructure as Part of Streetscape Amenities
Basic Amenities, Such As Benches and Trash Receptacles

Larger Areas for Trees Along Streetscape

Stormwater Infrastructure as Part of Streetscape Amenities

Landscape And Planting as Part of the Streetscape Amenities

Urban Design Features that Create Aesthetically Pleasing Pedestrian Resting Zones

Parklets That Enhance the Pedestrian Realm

Bicycle/Micromobility Corrals and Intersection Daylighting

Signage Along Streets to for Wayfinding

Curb Extensions for Safer Crossings for People Walking, Rolling, and Biking
Intersection design treatments, such as protected intersections, reduce vehicle-bicycle and vehicle-pedestrian conflicts. Protected intersections can be achieved through a variety of design tools from lower-cost, quick-build interim treatments, such as paint, posts, and rubber curbs, to more costly permanent treatments like concrete curbs.

The following diagrams illustrate four typical intersection conditions in downtown and how they could be retrofitted. They can be done with minimal modifications to existing curb lines, to provide safe and comfortable crossings that connect existing and planned high-comfort bikeways at key locations. The graphics are for illustrative purposes only and can be used as a guide to designing protected bicycle intersections. For additional guidance, see Denver’s Bikeway Design Manual.
One-Way / One-Way with Transit Lane
One-Way / Two-Way with Transit Lane

Design Requires Protected Right Turn Phasing to Eliminate Bike-Turning Vehicle Conflict

- Pedestrian Island
- Conflict Markings
- Bike Queue Area
- Corner Island
- Side Boarding Island with Raised Pedestrian Crossing
One-Way / Two-Way
with Transit Lane & Parking On Both Sides

Design Requires Protected Right Turn Phasing to Eliminate Bike-Turning Vehicle Conflict

Pedestrian Island

Conflict Markings

Bike Queue Area

Corner Island

Side Boarding Island with Raised Pedestrian Crossing
Streetscape Typology

This section includes a number of streetscape design options for downtown streets.

Planners can use these design options, shown in typical sections, when advancing downtown street projects. Each streetscape category includes a list of applicable downtown streets.

While Denver Moves: Downtown includes specific guidance and recommendations for downtown streets (see Chapters 3 and 4), Denver’s Complete Streets Design Guidelines have parameters for street design in Denver. The table to the right shows how downtown streetscape designs, profiled on the following pages, relate to Denver street types in the Complete Streets Design Guidelines.

Reference appropriate toolkit (ped, bike, transit) for improvements

<table>
<thead>
<tr>
<th>Streetscape Design</th>
<th>Denver Street Type*</th>
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<td>Grand Boulevard Streets</td>
<td>Downtown Arterial with Pedestrian Priority Overlay</td>
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<tr>
<td>Downtown Mixed-Use Streets</td>
<td>Downtown Arterial with Pedestrian Priority Overlay</td>
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<tr>
<td>Downtown Neighborhood Streets</td>
<td>Residential Collector with Pedestrian Priority Overlay</td>
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<tr>
<td>Green Streets</td>
<td>Downtown Two-Way Arterial or Residential Collector with Pedestrian Priority, Bicyclist Priority, and Ultra-Urban Green Infrastructure Overlays</td>
</tr>
</tbody>
</table>

*Refer to the Complete Streets Design Guidelines for a description of each street type, including design parameters.
Grand Boulevard Streets

This street type is generally the widest of downtown Denver streets. These are major arterials carrying regional traffic but have a role to provide high-quality public realm and amenities commensurate with their scale as they pass through center city.

**Important Features**

**Tree Canopy**
Significant and continuous both in medians and amenity zones

**Sidewalks**
Generous with active frontages

**Crosswalks**
Curb extensions that shorten crossing distance and high visibility markings that increase driver awareness of people crossing the street

**Bicycle Facilities**
Where appropriate, high-comfort, protected bike lanes with permanent buffers

**Amenities**
Pedestrian-oriented lighting in addition to street lighting, benches where appropriate to support activity, trash/recycling, downtown wayfinding signage

**Transit Facilities**
High-quality transit shelters tied to high-frequency service, exclusive transit lanes

**Green Infrastructure**
Where appropriate, bioretention treatments, permeable surfaces, and other such infrastructure
Typical Sections

20’ Pedestrian Realm with Protected Bike Lane & Amenity Zone

- 0’ - 6’ FRONTAGE ZONE
- 8’ - 12’ SIDEWALK ZONE
- 4’ - 6’ AMENITY ZONE (PLANTER SHOWN)
- PROTECTED BIKE LANE - SIDEWALK LEVEL
- 6’ - 8’ LANDSCAPE BUFFER
- TRAVEL LANE

NO STEP OUT ZONE

20’ Pedestrian Realm with Protected Bike Lane & Barrier

- 0’ - 6’ FRONTAGE ZONE
- 8’ - 12’ SIDEWALK ZONE
- 6’ - 8’ AMENITY ZONE - LANDSCAPE
- PROTECTED BIKE LANE - ROAD LEVEL
- 3’ STRIPES, POSTS, OR ISLAND BUFFER
- TRAVEL LANE

NO STEP OUT ZONE

20’ Pedestrian Realm with Protected Bike Lane & Hardscape Trees

- 0’ - 6’ FRONTAGE ZONE
- 8’ - 12’ SIDEWALK ZONE
- 5’ - 6’ AMENITY ZONE - HARDSCAPE TREE WELLS
- PROTECTED BIKE LANE - SIDEWALK LEVEL
- 6’ - 8’ LANDSCAPE BUFFER
- TRAVEL LANE

NO STEP OUT ZONE

20’ Pedestrian Realm with Transit Lane

- FRONTAGE ZONE N/ A AT STOP
- 8’ - 12’ SIDEWALK ZONE
- 8’ - 10’ TRANSIT ZONE
- TRANSIT LANE
- TRAVEL LANE
Downtown Mixed-Use Streets

The street type encompasses most of downtown Denver core area streets. These carry a mix of modes with varying emphasis depending on the corridor. Pedestrian volumes and adjacent activity levels are usually moderate to high. This street type should accommodate a minimum 13-foot pedestrian realm with minor exceptions for a few specialized streets. Most of this category exists in 80-foot rights-of-way. Existing pedestrian realms less than 13 feet should be phased out and improved to 16 feet minimum with new multimodal improvements.

Important Features

Tree Canopy
Generally continuous with enhanced hardscape tree wells where new improvements occur

Sidewalks
Generous with active frontages and lively frontage zones

Crosswalks
Curb extensions that shorten crossing distances and high-visibility markings that increase driver awareness of people crossing the street

Bicycle Facilities
High or moderate-comfort, protected lanes, depending on cross section design and latest bikeway facilities planning documents

Amenities
Pedestrian-oriented lighting in addition to street lighting, benches where appropriate to support activity, trash/recycling, downtown wayfinding signage, and parking pay stations

Transit Facilities
At high-capacity transit corridors, premium stops/stations, amenities and exclusive transit lanes

Green Infrastructure
Where appropriate, bioretention treatments, permeable surfaces, and other such infrastructure

Existing 10’ Pedestrian Realm
Retrofitted with Protected Bike Lane & Barrier

- 5.5’ SIDEWALK ZONE
- 4’ AMENITY ZONE - LANDSCAPE
- PROTECTED BIKE LANE - ROAD LEVEL
- 3’ MIN. POSTS OR ISLAND BUFFER
- TRAVEL LANE
- NO STEP OUT OR FRONTAGE ZONE
Typical Sections

16’ Pedestrian Realm with Protected Bike Lane & Amenity Zone

16’ Pedestrian Realm with Protected Bike Lane & Buffer

16’ Pedestrian Realm with Planted Transit Stop

16’ Pedestrian Realm with Transit Stop

- 0’ - 6’ FRONTAGE ZONE
- 8’ - 12’ SIDEWALK ZONE
- 4’ - 5’ AMENITY ZONE (BENCH SHOWN)
- PROTECTED BIKE LANE - SIDEWALK LEVEL
- 5’ - 8’ LANDSCAPE BUFFER
- TRAVEL LANE
- NO STEP OUT ZONE

- 0’ - 6’ FRONTAGE ZONE
- 8’ - 12’ SIDEWALK ZONE
- 5’ - 8’ AMENITY ZONE - LANDSCAPE
- PROTECTED BIKE LANE - ROAD LEVEL
- 3’ MIN. STRIPED OR ISLAND BUFFER
- TRAVEL LANE
- NO STEP OUT ZONE

- 0’ - 6’ FRONTAGE ZONE
- 8’ - 12’ SIDEWALK ZONE
- 5’ - 8’ AMENITY ZONE - LANDSCAPE
- 8’ - 10’ TRANSIT ZONE WITH CURB EXTENSION
- TRANSIT LANE

- 8’ - 12’ SIDEWALK ZONE
- 5’ - 8’ AMENITY ZONE - LANDSCAPE (BEYOND STOP)
- 7’ - 8’ TRANSIT ZONE WITH CURB EXTENSION
- TRANSIT LANE
- NO FRONTAGE ZONE AT STOP
**Downtown Neighborhood Streets**

This street type represents the residential streetscape environment of downtown’s residential areas like the Golden Triangle. These streets are generally suited for light to moderate traffic and often include two travel lanes and parking on each side. Residential public realm generally includes detached sidewalks, tree lawns, and front yard setbacks with additional landscaping at institutional and residential buildings.

**Important Features**

**Tree Canopy**
Significant and continuous because trees have greater soil volume and vertical space to spread

**Sidewalks**
Comfortable with street-side landscaping and front yard landscaping or with active frontages and lively merchant zones at retail land use

**Crosswalks**
Curb extensions that shorten crossing distances and high-visibility markings increase driver awareness of people crossing the street

**Bicycle Facilities**
Where they occur, dependent on speed and volume thresholds identified in the Bikeway Design Manual

**Amenities**
Pedestrian-oriented lighting in addition to street lighting, benches where appropriate to support activity, trash and recycling, downtown wayfinding signage, parking pay stations where appropriate

**Neighborhood Street Typical Section**

- TRANSITION ZONE
- 6’ - 8’ SIDEWALK ZONE
- 8’ MIN. AMENITY ZONE - LANDSCAPE
- FLEX ZONE: PARKING + GREEN INFRASTRUCTURE AT CURB EXTENSION
- TRAVEL LANE
- NO STEP OUT OR FRONTAGE ZONE
Green Streets

This street type is envisioned as a specialized, pedestrian/bicyclist-emphasis corridor that is usually a design modification to a Neighborhood or Commercial street type. Green Stormwater Infrastructure is a key component. Cross-section design emphasizes park-like green space, generous pedestrian and bicycle space, and vehicular space as a second priority where feasible.

Important Features

Tree Canopy
Significant because trees have greater soil volume and vertical space to spread, may be variable groupings

Sidewalks
Generous but may be variable width configurations depending on block context

Crosswalks
Curb extensions that shorten crossing distances and high-visibility markings that increase driver awareness of people crossing the street

Bicycle Facilities
Typically neighborhood bikeways, but dependent on Denver Bicycle Facilities Map and guidance identified in the Bikeway Design Manual

Amenities
Pedestrian-oriented lighting in addition to street lighting, parking pay stations where applicable

Green Infrastructure
Where desired, can be added using planted curb extensions as an addition to existing landscaping

Green Street
Typical Section
16th Street Mall is Denver’s premier public realm and a key component of the transit system. Its right-of-way design, finishes, and furnishings are unique within the galaxy of downtown Denver’s streets. It has its own set of design standards. In the future, other streets may take on the same designation of legacy or specialized street.
1. The minimum downtown pedestrian realm width should be 13 feet, taking care to maintain minimum 8’ pedestrian through zone and minimum 5’ amenity zone.

2. Best practice for urban street trees in downtown Denver is to provide soil volumes of minimum 225 cubic feet, but ideally 500 cubic feet, using various techniques, such as elongated tree wells, structural tree trenches in a paver grate system or suspended pavement systems using structural cribs.

3. Frontage zones are encouraged. Meet the minimum pedestrian through zone clearance required by City and County of Denver ordinance. Do not impede pedestrian circulation on busy sidewalks.
   • For 16-foot or greater pedestrian zone widths, provide curbed tree well planters with understory landscape in minimum 5-foot width x 15-foot length (or greater). Provide 4 to 5-foot breaks between planters for access to flex zone activity.

4. Where curbside zone activity (parking, ride share, loading, bicycle and micromobility parking, etc.) occurs adjacent to amenities, such as furnishings and planting, provide a minimum 2-foot step out zone at the curb. At moving travel lanes, a step out zone is not required. At bus and rail transit stops, a step out zone of 6-foot by 8-foot should be provided to accommodate bus ramps and people using mobility devices.

5. Where appropriate, tree well planters should be designed for storm water mitigation using water-tolerant/salt-tolerant tree and understory species as required by the City and County of Denver.

Overall Streetscape Design Best Practices

The following guidance has been taken from the Complete Streets Design Guidelines, completed in 2020.

• For pedestrian zones less than 16 feet with normal pedestrian volumes, provide hardscape tree wells as follows for extra walking space:
  • Structural tree trenches with paver grate system to achieve continuous soil volume shared by two to three trees minimum.
  • Suspended pavement tree wells (Silva Cell, CityGreen) allowing continuous soil volume shared by two to three tree minimum.
Implementation

This chapter outlines strategies for achieving the collective vision for downtown mobility. Many of the projects will require additional study and design before they can be implemented, while others can be built in phases.
How This Section Should be Used

This chapter provides a framework for implementing the mobility recommendations from this plan.

The first part of this chapter Implementation Strategies, provides a guide for implementation that takes into consideration the mechanisms for how mobility projects become funded and built in Denver.

The second section, Phasing describes how projects can be phased.

Next, the Project Recommendations table in the following section lists the individual projects and includes magnitude of cost, phasing actions, and impacts toward mobility goals. In addition, supporting policies and regulations needed to either build the projects or meet the future mobility vision for downtown are outlined under Policies & Regulations.

Finally, the remaining sections, Supporting On-Going Efforts, The Future of Mobility, and Laying The Groundwork For Future Study discuss additional considerations for downtown’s transportation network beyond this plan.

“Street” indicates the location of the recommended improvement.

“Limits” indicates the extents of the recommended improvement.

“Near”, “Mid”, and Long Term” actions that can be taken toward implementation or possible phases are listed for each project.

An estimated magnitude of cost for each project or action is represented by the “$” symbol. "$" means an action is estimated to cost less than 100K, while “$$” indicates 100K-1 million, “$$" indicates 1-5 million, and "$$$$" indicates greater than 5 million.

A project’s impact toward expanding mobility options downtown and improving safety is ranked in this column. Impact is shown as “high”, “mid-high”, “mid”, “mid-low”, and “low”. Projects estimated to have the highest impact toward these goals are labeled as “high”.

<table>
<thead>
<tr>
<th>STREET</th>
<th>LIMITS</th>
<th>NEAR TERM</th>
<th>COST</th>
<th>MID TERM</th>
<th>COST</th>
<th>LONG TERM</th>
<th>COST</th>
<th>MOBILITY SAFETY IMPACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>WeWatta St. Between Speer Blvd. and Park Ave.</td>
<td>Near</td>
<td>Paint and posts for expanded pedestrian zones and removal of</td>
<td>$$</td>
<td>Enhanced bicycle protection on WeWatta:</td>
<td>$$$</td>
<td>Reconstruct 16th</td>
<td>Mid</td>
<td></td>
</tr>
</tbody>
</table>
Implementation Strategies

The City and County of Denver uses the various tools described here to fund and deliver transportation improvements.

Capital Infrastructure Funding

Many of the projects recommended in Denver Moves: Downtown will require prioritization for capital funding for construction for dedicated transit lanes, streetscaping, or intersection safety improvements. For many corridors, this will require a longer-term, multi-year process involving corridor studies, and conceptual and final design, which will require additional financial resources.

Denver identifies, evaluates, and prioritizes capital needs in the city through the city’s Capital Improvement Program (CIP). The CIP involves facilitating the development of the Six-Year Capital Improvement Plan, managing the City’s annual capital budget process, and identifying other funding sources to meet capital needs. Some of the recommendations in this plan may be programmed within the city’s annual capital funding for mobility, while others may be placed on the city’s Six-Year Capital Improvement Plan, which helps prioritize and guide capital investment decisions.

Denver uses a variety of funding sources to support capital infrastructure projects. These may include annual Capital Improvement funds, grants (i.e., state and federal transportation grants), debt financing (i.e., General Obligation Bonds), and partnerships.

Next steps for capital improvements in this plan are summarized in the Project Recommendations Table. Some are called out as early actions for rapid implementation, while others require additional study prior to incorporation in the three, six, and twelve-year capital plan.

Partnerships

Realization of downtown’s vision will require commitment from and collaboration with city partners, stakeholders, and community members. As the City and County of Denver works to implement the recommendations in this plan, it will be important to further develop the relationships built during Denver Moves: Downtown planning process. Successful implementation will require partnerships during all stages of downtown mobility project delivery including funding, planning, design, regulation, policy-making, construction, and operation.

The working groups established as part of the planning process should be maintained as the individual projects are initiated and planned over the coming months and years. The City and County of Denver can look to its past work on several projects that cultivated relationships with cooperating entities.

In addition to these major partners, other funding will include various forms of federal, state, and local funding. The recommendations that follow will require additional study, analysis, and design as next steps. For many of the projects, a near, medium, and long-term approach has been identified to allow the City and County of Denver to phase in and build upon the improvements over time. Some improvements have been identified as early action projects that are low cost and be can completed in the near term with less financial resources.
Phasing

Denver Moves: Downtown was planned strategically with the ability to take near-term actions while also carefully considering a long-term mobility vision.

Although Denver Moves: Downtown has a 20-year horizon, many of the mobility needs identified exist today. For this reason, Denver Moves: Downtown includes an approach to implementation of capital transportation improvements that allows Denver to address some of these needs in the near term with tools that can be implemented at low cost, but that provide high benefit.

Building projects in phases is a strategy that is used to build out the most critical elements, until funding for longer-term capital improvements can be acquired. The Project Recommendations table describes how projects may potentially be phased over the near, short, and long-term.

The Public Realm and Best Practices in Chapter 5 comprise a strategy based on a continuum of implementation that is flexible and adaptable while making a real difference in how people move around downtown.

15th Street’s evolution over the past five years represents how these strategies can be put into action. The City and County of Denver pursued low-cost, high-benefit improvements in concert with partners such as RTD. These improvements have yielded immediate benefits for bicycle and transit mobility, while remaining flexible to implement future enhancements that can add comfort, green infrastructure, and pedestrian amenities.

A similar approach can be applied to most of the capital improvements recommended in this plan.

Evolution of 15th Street

- 2010: Five General Purpose Lanes
- 2015: Added Protected Bike Lane
- 2019: Added Bus-Only Lanes and Bike Protections
- Additional Bus, Bicycle, Pedestrian Improvements (for illustrative purposes only)
### Project Recommendations

#### Signature Projects

<table>
<thead>
<tr>
<th>STREET</th>
<th>LIMITS</th>
<th>NEAR TERM</th>
<th>COST</th>
<th>MID TERM</th>
<th>COST</th>
<th>LONG TERM</th>
<th>COST</th>
<th>MOBILITY / SAFETY IMPACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broadway Central Grand Boulevard</td>
<td>Broadway</td>
<td>Between 9th Ave. and 19th St.</td>
<td>Two-way bikeway; VisionZero rapid implementation intersection improvements; Bus lane extension on Broadway, Lincoln, 18th Ave.</td>
<td>$</td>
<td>Enhanced bicycle protection; Tremont/18th, Court/17th, and Cleveland/16th lane reductions and intersection improvements;</td>
<td>$$$</td>
<td>Enhanced streetscaping and landscaping</td>
<td>$$$</td>
</tr>
<tr>
<td>Broadway North Grand Boulevard</td>
<td>Broadway</td>
<td>Between 19th St. and Blake St.</td>
<td>Paint and post buffered bike lanes; safety and operations improvements at 20th and Park Avenue</td>
<td>$</td>
<td>Enhanced bicycle protection; displaced left turn improvements at Park Avenue</td>
<td>$$$</td>
<td>Enhanced streetscaping and landscaping</td>
<td>$$$</td>
</tr>
<tr>
<td>MetroRide Extension</td>
<td>Broadway, Lincoln</td>
<td>Between Colfax Ave. and 12th Ave./Acoma St.</td>
<td>Increase frequencies</td>
<td>$$$</td>
<td>Extend to Golden Triangle</td>
<td>$$$</td>
<td>Expand to all-day service</td>
<td>$$</td>
</tr>
<tr>
<td>Bannock Street Bikeway</td>
<td>Bannock</td>
<td>Between Colfax Ave. and 9th St.</td>
<td>Paint and post buffered bike lanes; 14th to Colfax auto closure</td>
<td>$</td>
<td>New Cherry Creek Crossing (5280 Trail coordination)</td>
<td>$$$</td>
<td>New Cherry Creek Trail access, bridge over creek, and connection to hospital district/bike lanes</td>
<td>$$</td>
</tr>
<tr>
<td>15th Street Bicycle Connection</td>
<td>15th</td>
<td>Between Larimer St. and LoHi</td>
<td>Pilot or demonstration project with paint and post buffered bike lanes</td>
<td>$</td>
<td>Enhanced bicycle protection and permanent installation</td>
<td>$$</td>
<td>Enhanced streetscaping and landscaping</td>
<td>$$$</td>
</tr>
<tr>
<td>Wewatta &amp; 16th Multimodal Improvements</td>
<td></td>
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<tr>
<td>STREET</td>
<td>LIMITS</td>
<td>NEAR TERM</td>
<td>COST</td>
<td>MID TERM</td>
<td>COST</td>
<td>LONG TERM</td>
<td>COST</td>
<td>MOBILITY / SAFETY IMPACT</td>
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</tr>
<tr>
<td>WeWatta St./16th St.</td>
<td>WeWatta St. Between Speer Blvd. and Park Ave. and 16th St. Between Wynkoop St. and Chestnut Pl.</td>
<td>Paint and posts for expanded pedestrian zones and removal of automotive traffic on 16th; paint and post buffered bike lanes on Wewatta</td>
<td>$$</td>
<td>Enhanced bicycle protection on Wewatta; Reconstruct 17th &amp; Wewatta intersection</td>
<td>$$$</td>
<td>Reconstruct 16th Street</td>
<td>$$$</td>
<td>Mid High</td>
</tr>
<tr>
<td>Pedestrian Signal Phasing</td>
<td>Full Study Area</td>
<td>Pedestrian signal phasing</td>
<td>$</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Mid High</td>
</tr>
<tr>
<td>Central 15th &amp; 17th Multimodal Improvements</td>
<td>15th/17th</td>
<td>15th St. Between Court Pl. and Market St. and 17th St. Between Wynkoop St. and Broadway</td>
<td>Paint and posts for buffered bike lane on 17th</td>
<td>$$</td>
<td>Enhanced low investment transit stops on both streets.</td>
<td>$$$</td>
<td>Enhanced streetscaping and pedestrian amenity space on both streets</td>
<td>$$$</td>
</tr>
<tr>
<td>Central Platte Valley Gondola</td>
<td>Between Union Station and LoHi</td>
<td>Feasibility Study</td>
<td>$</td>
<td>Identify partners</td>
<td>$</td>
<td>Implement</td>
<td>$$$</td>
<td>Mid High</td>
</tr>
<tr>
<td>Larimer Street Transitway &amp; Two-Way Conversion</td>
<td>Between Auraria Campus and RiNo</td>
<td>Pilot Larimer Square and RiNo auto closures</td>
<td>$</td>
<td>2-way conversion,</td>
<td>$</td>
<td>Bikeway improvements; Reconstruction of Larimer Square</td>
<td>$$$</td>
<td>Mid High</td>
</tr>
<tr>
<td>Curb Space Organization</td>
<td>Full Study Area</td>
<td>Pilot or demonstrations projects</td>
<td>$</td>
<td>Expansion to high priority locations</td>
<td>$</td>
<td>City-wide implementation</td>
<td>$$</td>
<td>Mid High</td>
</tr>
<tr>
<td>The 5280 Trail</td>
<td></td>
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</tbody>
</table>

**Pedestrian & Public Realm**

<table>
<thead>
<tr>
<th>STREET</th>
<th>LIMITS</th>
<th>NEAR TERM</th>
<th>COST</th>
<th>MID TERM</th>
<th>COST</th>
<th>LONG TERM</th>
<th>COST</th>
<th>MOBILITY / SAFETY IMPACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>WeWatta St., Wynkoop St., 20th St., Blake St., 21st St., 12th Ave., Acoma St., 9th Ave.</td>
<td>High Priority - TBD</td>
<td>TBD</td>
<td>Medium Priority - TBD</td>
<td>TBD</td>
<td>Low Priority - TBD</td>
<td>TBD</td>
<td>High</td>
</tr>
</tbody>
</table>

**Intersection Safety Improvements**

$ = <100K | $$ = 100K-1M | $$$ = 1M-5M | $$$$ = >5M
<table>
<thead>
<tr>
<th>STREET</th>
<th>LIMITS</th>
<th>NEAR TERM</th>
<th>COST</th>
<th>MID TERM</th>
<th>COST</th>
<th>LONG TERM</th>
<th>COST</th>
<th>MOBILITY / SAFETY IMPACT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Broadway @ 9th Ave., 10th Ave., 11th Ave., 12th Ave., 13th Ave., 14th Ave., Colfax Ave., Cheyenne Pl., 16th Ave., 17th Ave., 18th Ave., 19th Ave. / Lincoln St. @ Colfax Ave., / 20th St. @ Larimer St. and Blake St., / 14th St. @ Larimer St.</td>
<td>High Priority - TBD</td>
<td>$$</td>
<td>Medium Priority - TBD</td>
<td>$$$</td>
<td>Low Priority - TBD</td>
<td>$$</td>
<td>High</td>
</tr>
<tr>
<td>Cherry Creek Trail Access</td>
<td>Cherokee St., 11th Ave., 12th Ave., 14th Ave., Champa St., Lawrence St.</td>
<td>Additional and improved access points</td>
<td>-</td>
<td>-</td>
<td>New ramps</td>
<td>$$$</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Between Speer Blvd. and Auraria Campus</td>
<td>New underpass connection between Lawrence and Larimer</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>New underpass</td>
<td>$$$</td>
</tr>
<tr>
<td>Streetscape/ Safety and Comfort</td>
<td>Between Speer Blvd. and Sherman St.</td>
<td>Colfax Ave.</td>
<td>Intersection safety improvements with paint and posts</td>
<td>$$</td>
<td>New trees and landscaping</td>
<td>$$$</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Corridor</td>
<td>Speer Blvd.</td>
<td>Intersection safety improvements with paint and posts</td>
<td>$$</td>
<td>New multi-use path at street level</td>
<td>$$$</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Between Lincoln Ave. and Wynkoop St.</td>
<td>20th St.</td>
<td>Intersection safety improvements with paint and posts</td>
<td>$$</td>
<td>New trees and landscaping</td>
<td>$$$</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>STREET</td>
<td>LIMITS</td>
<td>NEAR TERM</td>
<td>COST</td>
<td>MID TERM</td>
<td>COST</td>
<td>LONG TERM</td>
<td>COST</td>
<td>MOBILITY / SAFETY IMPACT</td>
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</tr>
<tr>
<td>Curtis St.</td>
<td>Between 14th St. and Broadway</td>
<td>Intersection safety improvements with paint and posts</td>
<td>$$</td>
<td>New trees and landscaping</td>
<td>$$$</td>
<td>-</td>
<td>-</td>
<td>Mid High</td>
</tr>
<tr>
<td>Park Ave.</td>
<td>Between WeWatta St. and Glenarm Pl.</td>
<td>Intersection safety improvements with paint and posts</td>
<td>$$</td>
<td>New trees and landscaping</td>
<td>$$$</td>
<td>-</td>
<td>-</td>
<td>Mid High</td>
</tr>
<tr>
<td>Welton St.</td>
<td>Between Colfax Ave. and Park Ave.</td>
<td>Intersection safety improvements with paint and posts</td>
<td>$$</td>
<td>New trees and landscaping</td>
<td>$$$</td>
<td>-</td>
<td>-</td>
<td>Mid High</td>
</tr>
<tr>
<td>Tremont St.</td>
<td>Between Broadway and 17th St.</td>
<td>Lane reduction and shared space demonstrations</td>
<td>$$</td>
<td>New trees and landscaping</td>
<td>$$$</td>
<td>-</td>
<td>-</td>
<td>Mid</td>
</tr>
<tr>
<td>Arapahoe St.</td>
<td>Between Speer Blvd. and Park Ave.</td>
<td>Skyline Park improvements</td>
<td>$$</td>
<td>New trees and landscaping</td>
<td>$$$</td>
<td>-</td>
<td>-</td>
<td>Mid</td>
</tr>
<tr>
<td>14th St.</td>
<td>Between Arapahoe St. and Champa St.</td>
<td>DPAC safety and mobility improvements</td>
<td>$$$</td>
<td>-</td>
<td>None</td>
<td>-</td>
<td>-</td>
<td>Mid</td>
</tr>
</tbody>
</table>

**Shared Street**

<table>
<thead>
<tr>
<th>STREET</th>
<th>LIMITS</th>
<th>NEAR TERM</th>
<th>COST</th>
<th>MID TERM</th>
<th>COST</th>
<th>LONG TERM</th>
<th>COST</th>
<th>MOBILITY / SAFETY IMPACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glenarm Pl.</td>
<td>Between 14th St. and Broadway</td>
<td>Demonstration project of shared space</td>
<td>$$</td>
<td>Evaluation</td>
<td>$</td>
<td>Permanent installation</td>
<td>$$$</td>
<td>Mid High</td>
</tr>
<tr>
<td>Platte St.</td>
<td>Between 15th St. and 20th St.</td>
<td>Demonstration project of shared space</td>
<td>$$</td>
<td>Evaluation</td>
<td>$</td>
<td>Permanent installation</td>
<td>$$$</td>
<td>Mid High</td>
</tr>
</tbody>
</table>

**New Trees**

<table>
<thead>
<tr>
<th>STREET</th>
<th>LIMITS</th>
<th>NEAR TERM</th>
<th>COST</th>
<th>MID TERM</th>
<th>COST</th>
<th>LONG TERM</th>
<th>COST</th>
<th>MOBILITY / SAFETY IMPACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>New trees (DDP Urban Forest Initiative Round 1)</td>
<td>-</td>
<td>Round 1</td>
<td>None</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Mid Low</td>
</tr>
</tbody>
</table>

**High Water Quality Opportunities**

<table>
<thead>
<tr>
<th>STREET</th>
<th>LIMITS</th>
<th>NEAR TERM</th>
<th>COST</th>
<th>MID TERM</th>
<th>COST</th>
<th>LOW TERM</th>
<th>COST</th>
<th>MOBILITY / SAFETY IMPACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Several Green Street</td>
<td>-</td>
<td>High Priority - TBD</td>
<td>$$$</td>
<td>Medium Priority - TBD</td>
<td>$$</td>
<td>Low Priority - TBD</td>
<td>$$</td>
<td>Mid Low</td>
</tr>
</tbody>
</table>

**16th Street Mall Reconstruction**

<table>
<thead>
<tr>
<th>STREET</th>
<th>LIMITS</th>
<th>NEAR TERM</th>
<th>COST</th>
<th>MID TERM</th>
<th>COST</th>
<th>LONG TERM</th>
<th>COST</th>
<th>MOBILITY / SAFETY IMPACT</th>
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</thead>
<tbody>
<tr>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Funded</td>
<td></td>
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</table>
### Bike Improvements

<table>
<thead>
<tr>
<th>STREET LIMITS</th>
<th>NEAR TERM</th>
<th>MID TERM</th>
<th>LONG TERM</th>
<th>MOBILITY / SAFETY IMPACT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>The 5280 Trail</strong></td>
<td></td>
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<tr>
<td>TBD</td>
<td>TBD</td>
<td>TBD</td>
<td>TBD</td>
<td>Mid</td>
</tr>
<tr>
<td><strong>Cherry Creek Trail Access</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cherokee St., 11th Ave., 12th Ave., 14th Ave., Champa St., Lawrence St.</td>
<td>-</td>
<td>-</td>
<td>New ramps</td>
<td>$$$</td>
</tr>
<tr>
<td><strong>High Comfort Bikeway</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speer Blvd. Corridor</td>
<td>-</td>
<td>-</td>
<td>New multi-use path at street level</td>
<td>$$$</td>
</tr>
<tr>
<td>Cherokee St.</td>
<td>Between 11th St. and Colfax Ave.</td>
<td>Paint and posts</td>
<td>$$</td>
<td>Enhanced protection</td>
</tr>
<tr>
<td>Delaware St.</td>
<td>Between 11th St. and Colfax Ave.</td>
<td>Paint and posts</td>
<td>$$</td>
<td>Enhanced protection</td>
</tr>
<tr>
<td>11th Ave.</td>
<td>Between Speer Blvd. and Sherman St.</td>
<td>Paint and posts</td>
<td>$$</td>
<td>Enhanced protection</td>
</tr>
<tr>
<td>12th Ave.</td>
<td>Between Speer Blvd. and Sherman St.</td>
<td>Paint and posts</td>
<td>$$</td>
<td>Enhanced protection</td>
</tr>
<tr>
<td>13th Ave.</td>
<td>Between Bannock St. and Sherman St.</td>
<td>Paint and posts</td>
<td>$$</td>
<td>Enhanced protection</td>
</tr>
<tr>
<td>14th Ave.</td>
<td>Between Acoma St. and Sherman St.</td>
<td>Paint and posts</td>
<td>$$</td>
<td>Enhanced protection</td>
</tr>
<tr>
<td>Curtis St.</td>
<td>Between 14th St. and Park Ave.</td>
<td>Paint and posts</td>
<td>$$</td>
<td>Enhanced protection</td>
</tr>
<tr>
<td>Tremont St.</td>
<td>Between Broadway and Delaware St.</td>
<td>Gap between 15th and 16th</td>
<td>$</td>
<td>Enhanced protection</td>
</tr>
<tr>
<td>STREET</td>
<td>LIMITS</td>
<td>NEAR TERM</td>
<td>COST</td>
<td>MID TERM</td>
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<td>---------------------</td>
<td>------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>Welton St.</td>
<td>Between Colfax Ave. and 15th St. and between 17th St. and 26th St.</td>
<td>Paint and posts</td>
<td>$</td>
<td>Enhanced protection</td>
</tr>
<tr>
<td>Champa St.</td>
<td>Between Speer Blvd. and Park Ave.</td>
<td>-</td>
<td>-</td>
<td>Enhanced protection</td>
</tr>
<tr>
<td>Galapago St.</td>
<td>Between 14th Ave. and Colfax Ave.</td>
<td>Paint and posts</td>
<td>$$$</td>
<td>Enhanced protection</td>
</tr>
<tr>
<td>Little Raven St.</td>
<td>Between Speer Blvd. and 20th St.</td>
<td>Paint and posts</td>
<td>$</td>
<td>Enhanced protection</td>
</tr>
<tr>
<td>Chestnut Pl.</td>
<td>Between 16th St. and 20th St./ WeWatta St.</td>
<td>Paint and posts</td>
<td>$</td>
<td>Enhanced protection</td>
</tr>
<tr>
<td>Court Pl.</td>
<td>Between Broadway and Colfax Ave.</td>
<td>Paint and posts</td>
<td>$</td>
<td>Enhanced protection</td>
</tr>
<tr>
<td>20th Ave.</td>
<td>Between Broadway and Sherman St.</td>
<td>Paint and posts</td>
<td>$</td>
<td>Enhanced protection</td>
</tr>
<tr>
<td>16th Ave.</td>
<td>Between Broadway and Sherman St.</td>
<td>Paint and posts</td>
<td>$</td>
<td>Enhanced protection</td>
</tr>
<tr>
<td>Cleveland Pl.</td>
<td>Between Colfax Ave. and Broadway</td>
<td>Paint and posts</td>
<td>$</td>
<td>Enhanced protection</td>
</tr>
<tr>
<td>Fox St.</td>
<td>Between 13th Ave. and Colfax Ave.</td>
<td>Paint and posts</td>
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<td>Enhanced protection</td>
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<tr>
<td>Welton St.</td>
<td>Between 15th St. and 17th St.</td>
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<tr>
<td>18th St. and 19th St.</td>
<td>Between Broadway and Wynkoop St.</td>
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<tr>
<td>Larimer St.</td>
<td>Between 21st St. and Park Ave.</td>
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</tbody>
</table>

**Upgrade Existing Low Improvement Facilities to Medium or High Improvement Facilities**

- Enhanced protection | $$$$$ | -         | -    | Mid        |
## Transit Improvements

<table>
<thead>
<tr>
<th>STREET</th>
<th>LIMITS</th>
<th>NEAR TERM</th>
<th>COST</th>
<th>MID TERM</th>
<th>COST</th>
<th>LONG TERM</th>
<th>COST</th>
<th>MOBILITY / SAFETY IMPACT</th>
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<tbody>
<tr>
<td><strong>Colfax BRT</strong></td>
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<td>Colfax Ave. Between West Colfax Ave. and East Colfax Ave.</td>
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<td>TBD</td>
<td>Colfax BRT</td>
<td>TBD</td>
<td>TBD</td>
<td>TBD</td>
<td>Mid</td>
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<tr>
<td><strong>Transit Speed &amp; Reliability</strong></td>
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<td>Speer Blvd.</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>Transit signal priority and queue jumps</td>
<td>$$</td>
<td>Bus only lanes</td>
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<td>Park Ave.</td>
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<td>Transit signal priority and queue jumps</td>
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<td>LRT - D,F,H Lines Between Colfax at Auraria Station and Theatre District - Convention Center Station</td>
<td>Re-timing and/or transit signal priority</td>
<td>$$</td>
<td>-</td>
<td>-</td>
<td>Grade-separation at Speer</td>
<td>$$ $$</td>
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<tr>
<td>Broadway Cleveland Que jump</td>
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<td>Mid</td>
<td></td>
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<tr>
<td>Lincoln / 20th St. Between 18th Ave. and 20th St./ Broadway</td>
<td>Transit signal priority and bus only lane</td>
<td>$$</td>
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<td>-</td>
<td>-</td>
<td>-</td>
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<td>Lawrence St. Between 14th and 18th St.</td>
<td>Bus only lane</td>
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<td></td>
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<td>Study bus only lane</td>
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<td>20th St. Between Stout and Blake St.</td>
<td>Study bus only lane</td>
<td>$</td>
<td></td>
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<td></td>
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<td>Mid</td>
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<tr>
<td>Market St. Between 14th St. and 17th St.</td>
<td>Bus only lane and transit signal priority</td>
<td>$</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<tr>
<td>Blake St. Between 18th St. and 14th St.</td>
<td>Bus only lane and transit signal priority</td>
<td>$</td>
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<td>-</td>
<td>Mid</td>
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<td>18th St. and 19th St. Between Broadway and Wynkoop St.</td>
<td>Funded</td>
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<tr>
<td>STREET</td>
<td>LIMITS</td>
<td>NEAR TERM</td>
<td>COST</td>
<td>MID TERM</td>
<td>COST</td>
<td>LONG TERM</td>
<td>COST</td>
<td>MOBILITY / SAFETY IMPACT</td>
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<td>Circulator</td>
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<tr>
<td>WeWatta St.</td>
<td>Between Auraria Campus and RiNo</td>
<td>-</td>
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<td>New service</td>
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<tr>
<td>16th Street Mall Reconstruction</td>
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<tr>
<td>-</td>
<td>Between Broadway and Wynkoop St.</td>
<td></td>
<td></td>
<td></td>
<td>Funded</td>
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<tr>
<td>Reconfigured Intersections</td>
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<td></td>
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### Auto & Freight Improvements

<table>
<thead>
<tr>
<th>STREET</th>
<th>LIMITS</th>
<th>NEAR TERM</th>
<th>COST</th>
<th>MID TERM</th>
<th>COST</th>
<th>LONG TERM</th>
<th>COST</th>
<th>MOBILITY / SAFETY IMPACT</th>
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<tbody>
<tr>
<td>-</td>
<td>Broadway @ 19th St, 20th Ave., 22nd St., Park Ave. / Lincoln and 20th St. / Colfax Ave. at Speer Blvd.</td>
<td>High Priority - TBD</td>
<td>$$$</td>
<td>Medium Priority - TBD</td>
<td>$$$</td>
<td>Low Priority - TBD</td>
<td>$$</td>
<td>Mid</td>
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<tr>
<td>Two-Way Street Conversion</td>
<td></td>
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<td></td>
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<tr>
<td>Welton St.</td>
<td>Between Colfax Ave. and 15th St. and between 17th St. and 26th St.</td>
<td>-</td>
<td>-</td>
<td>Two-way conversion</td>
<td>$$$</td>
<td>-</td>
<td>-</td>
<td>Low</td>
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<tr>
<td>Delaware St./ Tremont St.</td>
<td>Between 14th Ave. and 17th St.</td>
<td>-</td>
<td>-</td>
<td>Two-way conversion</td>
<td>$$$</td>
<td>-</td>
<td>-</td>
<td>Low</td>
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<tr>
<td>Arapahoe St.</td>
<td>Between Speer Blvd. and 22nd St.</td>
<td>-</td>
<td>-</td>
<td>Two-way conversion</td>
<td>$$$</td>
<td>-</td>
<td>-</td>
<td>Low</td>
</tr>
<tr>
<td>Lawrence St.</td>
<td>Between Speer Blvd. and 22nd St.</td>
<td>-</td>
<td>-</td>
<td>Two-way conversion</td>
<td>$$$</td>
<td>-</td>
<td>-</td>
<td>Low</td>
</tr>
<tr>
<td>Curtis St.</td>
<td>Between 14th St. and Broadway</td>
<td>-</td>
<td>-</td>
<td>Two-way conversion</td>
<td>$$$</td>
<td>-</td>
<td>-</td>
<td>Low</td>
</tr>
<tr>
<td>Welton St.</td>
<td>Between 15th St. and 17th St.</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Funded</td>
</tr>
</tbody>
</table>

$ = <100K | $$ = 100K-1M | $$$ = 1M-5M | $$$$ = >5M
These policies and regulations would help The City and County of Denver achieve its mobility goals for downtown through tools that impact how streets are designed and how land use is integrated with transportation.

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>GOALS ADDRESSED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incentives for property owners to increase trees and landscaping</td>
<td>Inviting</td>
</tr>
<tr>
<td></td>
<td>Green Space</td>
</tr>
<tr>
<td>Create a free transit zone downtown</td>
<td>Safe Streets</td>
</tr>
<tr>
<td>Create new Transportation Demand Management programs</td>
<td>Economic</td>
</tr>
<tr>
<td></td>
<td>Vitality</td>
</tr>
<tr>
<td>Incentivize bicycle facilities (i.e., showers and parking) in new development</td>
<td></td>
</tr>
<tr>
<td>Incentivize the installation and use of delivery lockers</td>
<td></td>
</tr>
<tr>
<td>Focus on moving freight via low-emission modes (e.g. e-bikes)</td>
<td></td>
</tr>
<tr>
<td>Matching funds for Urban Forest Initiative projects to improve planting area infrastructure to upgrade, expand, or add 500 tree pits</td>
<td>Accessibility</td>
</tr>
<tr>
<td>Discounted fares for seniors, students, disadvantaged populations</td>
<td></td>
</tr>
<tr>
<td>Incentivize carpooling</td>
<td></td>
</tr>
<tr>
<td>Incentivize electric vehicles</td>
<td></td>
</tr>
<tr>
<td>Create a parking maximum for new developments in the downtown area</td>
<td></td>
</tr>
<tr>
<td>Implement A Dynamic Street Parking Pricing Pilot Program (performance-based pricing)</td>
<td></td>
</tr>
<tr>
<td>Allow on-street parking in curbside travel lanes during off-peak times</td>
<td></td>
</tr>
<tr>
<td>Change Colorado state law to allow the Idaho Stop (provides cyclists the right to treat stop signs as “yields” and red lights as stop signs)</td>
<td></td>
</tr>
<tr>
<td>Create slow zones at key locations (schools, parks, transit centers, and other critical safety locations)</td>
<td></td>
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<tr>
<td>Eliminate right/left turn on red</td>
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<tr>
<td>Enforce current curb rules</td>
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</tr>
<tr>
<td>Establish a minimum distance for loading opportunities from any business address, either in on-street, alley or off-street locations; maintain or reassign loading locations when designing transportation and private development projects</td>
<td></td>
</tr>
<tr>
<td>Increase Enforcement of Parking Restrictions in Transit Stops and Lanes</td>
<td></td>
</tr>
<tr>
<td>Limit deliveries to early morning/late evening</td>
<td></td>
</tr>
<tr>
<td>Reduce speed limit downtown to 20 mph maximum</td>
<td></td>
</tr>
<tr>
<td>Develop requirements for pedestrian and bicycles to be prioritized in right-of-way plans adjacent to construction projects</td>
<td></td>
</tr>
<tr>
<td>Loading zones for delivery, Transportation Networking Companies, and taxis on every named street</td>
<td></td>
</tr>
<tr>
<td>Create guidelines for bicycle/scooter parking on every named street</td>
<td></td>
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<tr>
<td>Change double turn lanes to single turn lanes</td>
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<tr>
<td>Ensure freight access on streets with no vehicle lanes (e.g. 16th St.)</td>
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</tr>
<tr>
<td>Limit Curb Cuts in new developments and create a higher grade slope to prioritize sidewalks across the access points</td>
<td></td>
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<tr>
<td><em>Restrict utilities such as fiber or cell poles in the right-of-way</em></td>
<td></td>
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<tr>
<td><em>Upgrade traffic signal technology to detect pedestrian and bicycles at intersections to improve safety</em></td>
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<tr>
<td>Establish downtown freight working group</td>
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<tr>
<td>Develop a city-wide and downtown freight plan</td>
<td></td>
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<tr>
<td><em>Establish pedestrian wayfinding plan</em></td>
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</tbody>
</table>
Supporting Ongoing Efforts

The improvements proposed in Denver Moves: Downtown are intended to complement on-going planning efforts and initiatives in the downtown area.

Denver Moves: Downtown was developed collaboratively with multiple agencies, stakeholders, and community partners. During its development, ongoing downtown projects or initiatives were in various stages both from internal city agencies and external partners. These additional efforts complement the vision and goals for downtown mobility. As a result, the projects outlined in this plan are intended to support and work in tandem with ongoing downtown initiatives. A few examples include the 5280 Trail, the 16th Street Mall Reconstruction, and the Urban Forest Initiative. These are described in more detail in the following sections.

5280 Trail

The 5280 Trail is a proposed trail around downtown that will connect many vibrant and diverse center city neighborhoods creating a distinct sense of place within each neighborhood it weaves through. The Downtown Denver Partnership is leading the effort and working in partnership with the City and County of Denver to design and implement the bold and visionary project in phases. The trail will reimagine how the public right-of-way is used in downtown, linking neighborhoods, connecting people, and activating underutilized streets to create a premier public space and amenity in downtown.
16th Street Mall Reconstruction

The 16th Street Mall is considered by many to be the heart of downtown Denver. After nearly 40 years of serving as a high-traffic transit and pedestrian corridor, the mall is in need of significant repair and revitalization. The City and County of Denver has partnered with the Downtown Denver BID and RTD on an initiative to make the mall more efficient for pedestrians and buses, and to better serve businesses, residents, and visitors downtown. The City and County of Denver and RTD have developed a refreshed design together that meets both agencies’ goals. In 2017, Denver voters committed $13 million from the Elevate Denver Bond Program to help fund the project. The Federal Transit Administration, DRCOG, Denver Urban Renewal Authority, and the city will all contribute funding to the project. Design and construction on the 16th Street Mall is expected to begin in 2021.

Urban Forest Initiative

From the Urban Forest Initiative website: “The Urban Forest Initiative is funded by the Downtown Denver Partnership, City and County of Denver, Downtown Denver Business Improvement District, property owners, and the philanthropic community. The UFI has set a goal of $1,000,000 of philanthropic donations to support the Urban Forest Initiative... The mission of the Urban Forest Initiative is to grow Denver’s urban forest through education, built infrastructure, and maintenance... The benefits of a healthy urban forest are endless, from our health and wellbeing to the vibrancy of our downtown. Trees are not only beautiful but also are essential to the livelihood of Denverites. Trees provide increased property value, higher spending from consumers, higher income streams for businesses, reduced time on the market for real estate listings, and return on investment in terms of ecological and economic benefits.”
The Future Of Mobility

Denver Moves: Downtown is taking place during a period of unprecedented change in mobility technology.

New technologies are shifting from being newcomers to playing a core role in the transportation network:

- Transportation Network Companies, such as ridehailing and rideshare
- Micromobility - e-bikes and e-scooters
- Microtransit
- Next-generation goods delivery methods
- Autonomous vehicles

New travel options have the potential to alter travelers’ relationship with driving and increase or decrease vehicle miles traveled. E-scooters are currently estimated to be present in Denver in the thousands. Issues persist with e-scooter conflicts on sidewalks with pedestrians, as well as placement of e-scooters on sidewalks, presenting obstacles to people walking or rolling.

Recent additions to microtransit in Denver have experienced mixed success. However, this service model offers promise in applications that seek to capitalize on technology like connected and autonomous vehicles and ridehailing apps.

As e-commerce continues to explode in popularity, particularly during the COVID-19 era, delivery and freight movements are undergoing a substantial shift that requires better loading zone access for door-to-door deliveries. Because connected vehicle technology is increasingly prevalent, planning for downtown mobility is not complete without considering the future infrastructure and technology needs of this technology. The arrival of autonomous vehicles will carry implications for vehicle miles traveled, commuting patterns, pedestrian safety, transit usage, and a multitude of other factors in the mobility landscape.

Opportunities for Downtown Denver

Changing mobility technologies must be planned for, incorporated into designs, and monitored for changes moving forward. It has proven to be a challenge to efficiently incorporate new technologies and service models in the past, and this is likely to continue. However, in a time when new technology is reshaping the nature of urban travel environments, Denver Moves: Downtown is an opportunity to leverage the strengths of these technologies when planning for mobility, rather than reactively adapting once new mobility options have already fully transformed travel patterns. Specific actions that should be taken when considering future projects downtown include:

- Create streets that can handle the addition of new modes of micromobility travel. New vehicle types are possible, even likely, to emerge as electric motor driven personal small vehicles have proven to be popular and efficient ways to move around downtown. Being able to adapt the way our streets are laid out to these developments will allow the City and County of Denver to better serve modes beyond the car.
- Examine ways to classify sections of streets by vehicle speed or class, including walking, small and slow vehicles, small and fast vehicles, and large and fast vehicles. Design streets to accommodate all vehicle types.
- Provide space for active curb uses: deliveries, drop offs, scooter and bicycle docking, public space, etc. Implement technologies and strategies that allow these spaces to be responsive to needs in real-time.
- Provide extensive electric vehicle charging infrastructure. Examine opportunities to incorporate charging stations for not only autos, but scooters, bikes, and other vehicles that will form a complete mobility fleet in the future.
- Incorporate high-bandwidth communications (5G), autonomous and connected vehicle technologies, autonomous delivery drones (aerial and ground-based), Artificial Intelligence (AI), and Big Data into planning and design projects.
EasyMile Shuttle - Autonomous Vehicle

Person Riding an Electric Scooter

Electric Scooters

Electric Bikes and Scooters
Laying the Groundwork for Future Study

Many ideas and concepts developed through the Denver Moves: Downtown planning process may progress through separate planning efforts in the future.

Through this process, several issues facing mobility downtown became apparent, where the solutions are not as straightforward as the projects identified in this plan. The two issues highlighted below will require more outreach, stakeholder engagement, and conceptual planning than was possible in the scope of this plan.

**Light Rail Operations**

The existing light rail transit system cannot meet projected demand for travel into downtown. The downtown transit loop carries four light rail transit lines (D, F, H, and L) that serve communities outside downtown. The loop is operating at capacity during peak hours, with trains entering every 150 seconds, and reliability is poor. The L Line, in particular, causes significant delays for other lines and the plan to extend L Line service north along Downing Street as part of the Central Rail Extension project could further degrade downtown loop reliability.

Several potential changes to light rail operations were identified through this plan, each of which would require additional study:
- Realign the L Line as light rail, streetcar, or circulator bus through downtown to run on Welton Street from the Convention Center into Five Points. Welton Street could become part of the Downtown Circulator Network, similar to the 16th Street Mall shuttle.
- Realign the L Line in downtown, out of the loop, to open additional capacity for the D, F, and H Lines.
- Support capacity expansion of the Central Corridor between I-25/Broadway and Colfax Avenue to allow additional trains into the downtown loop.
- Explore signal cycle changes to open capacity in the loop.
- Consider W Line changes to serve the central downtown loop.
- Remove the loop, consider double-tracking along Stout to provide bi-directional service for the D, F, and H Lines. California Street tracks could serve the L Line. These changes could be combined with a new station or mobility hub for train layover and direction-change.

**18th Street Transit Street**

15th, 17th, 18th, 19th, and 20th Streets carry buses today as part of a one-way couplet system that can be both confusing and inefficient for users. As part of the transit visioning process, transit experts weighed in on how the couplet system downtown means that bus users must be familiar with the system to find stops on different streets and must be willing to walk farther for one of their trips into or out of downtown. In particular, 15th and 17th Streets are far enough apart to discourage some regular commuters and most occasional visitors from using any of the several routes on those streets.

Consolidating a majority of bus routes on a two-way 18th, converted to a transit-only street, would simplify operations and allow for opportunities to change the way downtown streets function:
- The Free MetroRide would be more intuitive and central as a two-way route on 18th Street.
- Two-way numbered streets could be considered to improve navigability.
- 17th Street could be transformed into a more pedestrian and bicycle friendly street with wider sidewalks and protected bike lanes, potentially as a two-way street.
- Dedicated transit space on 15th Street could be reduced, allowing for more sidewalk space and streetscaping.
- 19th and 20th Streets could be reimagined as pedestrian and bicycle streets, with additional streetscaping.
- I-25 Express Lane access could be reassessed.
LET'S ADD A FULL PAGE PHOTO - MAYBE OF UNION STATION?
Image References

0. Cover
Cover Front Cover Photo <HDR>

2. Plan Process & Project Efforts
20 Cyclist at DenverMoves: Downtown booth at Bike to Work Day 2019 <GBSM>
21 DenverMoves: Downtown Public Open House <GBSM>
21 Stakeholder Meeting Presentation <GBSM>
21 Public outreach for State of the System survey <GBSM>
23 “Minneapolis” <National Association of City Transportation Officials (NACTO)>
23 “Washington, D.C.” <District Department of Transportation (DDOT)>
23 “Seattle”

3. Mobility Vision
30 “Safer Streets” <HDR>
30 “Streetscape” <Shutterstock>
30 “New Trees” <HDR>
32 “Transit Lanes” <HDR>
32 “Speed & Reliability Treatments” <https://nacto.org/event/traffic-signals-302-timing-streets-for-transit/>
34 “High-Comfort Bikeways” <https://denver.streetsblog.org/2017/08/31/eyes-on-the-street-the-14th-street-bike-lane-is-immediately-denver-bike-best/>
34 “Safer Intersections” <https://nacto.org/event/nacto19-dont-give-up-at-the-intersection/>
34 “Cherry Creek Trail Access” <https://www.spinlister.com/blog/cherry-creek-reservoir-biking-downtown-denvers-historic-cherry-creek-trail/>
36 “Two-Way Streets” <HDR>
36 “Curb Space Management” (Top) <HDR>
36 “Curb Space Management” (Bottom) <https://ladotlivablestreets.org/content-landing/parklets>
38 “Pedestrian Enhanced Streets” <HDR>
38 “Transit Priority Streets” <HDR>
38 “Bicycle Priority Streets” <https://twitter.com/derobikeracks/status/940681197256105985>
40 “16th Street Mall Reconstruction” <https://www.downtowndenver.com/venue/regional-transportation-district/?tribe_venue=regional-transportation-district&tribe_event_display=past>
40 “Vision Zero Intersection Reconfigurations”

40 “18th/19th Transit & Bike Lanes”
<HDR>

41 Community Network Bike Facilities
<https://blog.usajreality.com/posts/new-sidewalks-bike-lanes-coming-to-denver>

41 Bannock Closure

41 5280 Trail
<Downtown Denver Partnership>

41 Broadway Bikeway
<https://denverite.com/2019/05/23/denvers-bicycle-superhighway-on-broadway-will-take-up-to-two-more-years-to-start/>

4. Signature Projects

49 “Closure at Civic Center”
<https://twitter.com/cityofdenver/status/126972078069908480>

55 “Overall view of Putnam Triangle - Brooklyn, NY”

55 “Children playing at the Triangle - Brooklyn, NY”

57 VisionZero Intersections (Left)
<HDR>

57 VisionZero Intersections (Right)
<https://bikeportland.org/tag/protected-intersections>

60 Denver Union Station
<HDR>

60 Civic Center Station
<http://www.sehinc.com/portfolio/denver-rtd-civic-center-station>

60 Denver Art Museum

65 “New Transit Lanes”
<HDR>

67 “Urban Gondolas - La Paz, Bolivia”
<HDR>

67 “Urban Gondolas - Portland, Oregon”
<http://gondolaproject.com/category/proposals-concepts/georgetown-rosslyn-gondola/>

72 “Who Has The Right-of-Way?”
<HDR>

5. Public Realm Best Practices

75 Public Realm Toolkit (Left)

75 Public Realm Toolkit (Center)
<HDR>

75 Public Realm Toolkit (Right)
<HDR>

76 Bikeway Toolkit: 1
<HDR>

76 Bikeway Toolkit: 2
<HDR>

76 Bikeway Toolkit: 5

76 Bikeway Toolkit: 6
<https://twitter.com/derobikeracks/status/940681197256105985>

76 Bikeway Toolkit: 9
<https://peopleforbikes.org/blog/want-amazons-new-hq-town-must-bike-lanes-says-amazon/attachment/7th-ave-pbl-amazon-credit-sdot/>

76 Bikeway Toolkit: 10
<https://waba.org/details/15th-street-protected-bike-lane/>

77 Bikeway Toolkit: 3
<HDR>

77 Bikeway Toolkit: 4
6. Implementation

97  "15th and 17th Transit Improvements"
<HDR>

98  Evolution of 15th Street - “2010”
<HDR>

98  Evolution of 15th Street - “2015”
<HDR>

98  Evolution of 15th Street - “2019”
<HDR>

98  Evolution of 15th Street - “2025”
<HDR>

120  “5280 Trail”
<Downtown Denver Partnership>

121  “16th Street Mall Reconstruction”
<https://www.downtowndenver.com/venue/regional-transportation-district/?tribe_venue=regional-transportation-district&tribe_event_display=past>

121  “Urban Forest Initiative”
<https://milehighcre.com/the-benefits-of-denvers-urban-forest-initiative/>

123  “EasyMile Shuttle - Autonomous Vehicle”
<https://www.designnews.com/automotive-engineering/easy-mile-autonomous-shuttle-employs-v2x-communication>

123  “Electric Scooters”
<HDR>

123  “Person Riding an Electric Scooter”
<https://www.denverpost.com/2019/02/13/denver-dockless-scooter-miles/>

123  “Electric Bikes and Scooters”
<HDR>

125  “Complete Streets”
<HDR>

Cover  Rear Cover Photo
<HDR>