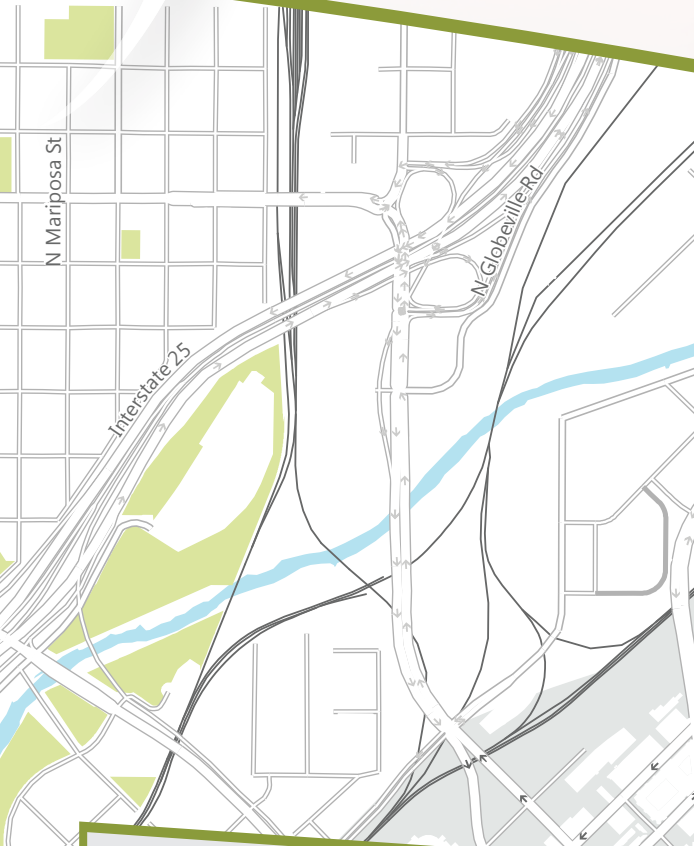


NORTHEAST DOWNTOWN
NEIGHBORHOODS PLAN

NEXT STEPS STUDY



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DENVER
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Acknowledgments

This project was a collaborative effort between various City and County of Denver Departments, neighborhood and community representatives and consultants.

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Executive Summary

The transportation system within northeast downtown Denver is a complex network designed to serve both local and regional travel demand. The Northeast Downtown Neighborhoods (NEDN) Plan identified transportation improvements that intend to improve the area's multimodal mobility within the context of both neighborhood connectivity and the greater transportation system. The NEDN Plan was developed through a series of public involvement activities that began in 2010; the final study was completed in May 2011.

The purpose of the Next Steps Study was to prioritize the transportation infrastructure projects recommended in the NEDN Plan and to identify implementation strategies for projects that are feasible and/or effective. The study was performed in three (3) key phases.

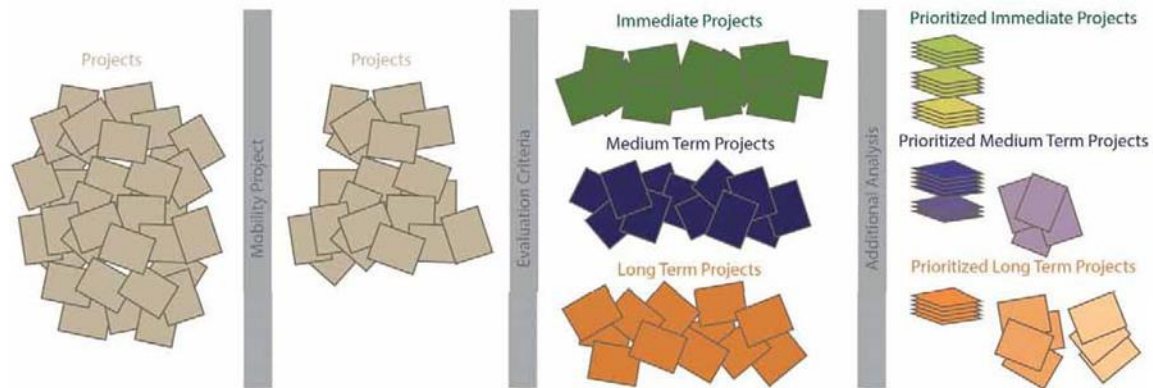
The first phase was to prioritize the transportation infrastructure projects identified in the NEDN Plan with the assistance of a Technical Advisory Committee (TAC) and input from the public. The TAC included a representative from the City Council Districts 8 and 9, business groups, and registered neighborhood organizations that are within the study area boundary, which was established in the NEDN Plan.

Criteria with the following descriptions from the NEDN Plan that were carried forward to prioritize mobility projects included:

1. **Neighborhood Connections and Character** – Maintaining the unique character of each neighborhood in the northeast downtown and ensuring that new development on neighborhood edges contributes to the successful transition between areas.
2. **Economic Development and Opportunity** – Encouraging new investment by attracting new businesses, supporting the growth of existing businesses, encouraging the reuse of existing structures, attracting new development and increasing employment opportunities.
3. **Livability and Public Realm** – Ensuring that the various elements comprising the public realm (streets, sidewalks, parks, plazas, transit stops/stations, landmarks, housing, open spaces) positively contribute to the quality of life for residents, businesses, and visitors alike.
4. **Mobility** – Enhancing the multimodal transportation system to balance the needs of all users and modes, including automobiles, pedestrians, bicyclists, transit, freight, and delivery vehicles.

Once the prioritized project list was developed, the second phase was to further identify a concept(s) for each project. The majority of the projects listed within the study is project ideas and had not been laid out schematically. For some of these projects, key considerations were listed in order to further develop the schematic or concept.

Prioritization Process



Based on the project prioritization list developed with the assistance of the TAC, “high level” engineering analyses were performed, which provided planning level costs and schematics of individual projects. This final report identified potential implementation strategies for the projects to move forward.

RECOMMENDED PROJECTS

The prioritized list of projects from the NEDN Plan is as follows, separated into three tiers determined by the prioritization process described in this report:

Tier 1:

- Welton Street: One to Two Way Conversion (Park Ave to Downing)*
- Larimer Street: Ped/Bike Crossing at Broadway
- 21st Festival Street/ Bike Boulevard (Blake Street to 20th Avenue)**
- 31st Street Bicycle/Pedestrian Bridge (across Union Pacific Railroad tracks)*
- 21st Street: Ped/Bike Crossing at Broadway
- Broadway Study: Ped/Bike Crossing (Welton to Larimer)
- Blake Street: One to Two Way Conversion (38th Street to Broadway)*
- Larimer Street: One to Two Way Conversion (Broadway to 18th Street)
- Broadway Study: Evaluate Alternatives (Arapahoe to Welton)*
- Welton Street: Ped/Bike Crossing at Broadway

Tier 2:

- Blake Street: One to Two Way Conversion (18th Street to Broadway)
- Curtis Park Traffic Calming Opportunities*
- Lawrence Street: Ped/Bike Crossing at Broadway
- River North and Ballpark Complete Sidewalk Network*

- Arapahoe Street: Ped/Bike Crossing at Broadway
- Champa Street: Ped/Bike Crossing at Broadway
- Curtis Street: Ped/Bike Crossing at Broadway
- Stout Street: Ped/Bike Crossing at Broadway
- 28th Street: One to Two Way Conversion (Welton to Glenarm)
- 24th Street: Ped/Bike Crossing at Broadway
- 27th Street: One to Two Way Conversion (Welton to California)
- Study Connecting Parks to Destination Areas*
- Curtis Street Enhance Pedestrian Environment (30th Street to 14th Street)*

Tier 3

- 22nd Street: One to Two Way Conversion (Champa to Stout)
- Glenarm Place: One to Two Way Conversion (29th Street to Downing)
- Walnut Street: One to Two Way Conversion (18th Street to Downing)*
- Downtown Strategic Transportation Plan Travelshed Analysis
- Curtis Street: One to Two Way Conversion (18th Street to Broadway)*
- California Street: One to Two Way Conversion (Park Avenue to Broadway)*
- Champa Street: One to Two Way Conversion and reclassification to collector (Downing to Broadway)*
- Stout Street: One to Two Way Conversion (Broadway to Downing)*
- 33rd Street Multimodal Bridge*

**indicates the project needs to be further defined with additional study before implementation strategies can be presented.*

***indicates the project is progressing through other means or is already being studied further and therefore, no conceptual design is presented in this report.*

ADDITIONAL CONCERNS DISCUSSED WITH TAC

The 24th Avenue pedestrian corridor needs to be defined as a project so that it can move forward and be implemented. It was not on the list of prioritized projects but was stated as an important project in the TAC meetings.

The Welton Street corridor continues to be important to the community and was the highest ranking project in this prioritization process. While Welton Street is in the list of recommended projects above as a project that is progressing or is being studied through other means, plans for improvement should continue to be the primary focus for the community. The corridor should continue to be focused on and a plan pulled together for future implementation. A study that analyzes all signalized intersections along the corridor should be completed. The study should analyze the functional and operational benefits and/ or challenges associated with converting the roadway from one-way to two-way while continuing transit operations along the corridor. Analysis of the corridor should consider transit, vehicular, and pedestrian traffic as well as bicycle crossing traffic at 21st Street, which is intended to be a future bicycle boulevard or neighborhood bikeway.

The team presented the results of the prioritization process at the third TAC Meeting and provided the committee the three tiers of proposed projects. The committee generally agreed with the results of the prioritization. Beyond the prioritization, the TAC expressed the need to implement projects that meet the neighborhoods goals in the near and short term. It was determined that utilizing this next steps study and project to help implement at least a single project on the list would be beneficial to the neighborhood. The team determined that signaling the intersection of Broadway and 21st and providing preliminary construction plans for the pedestrian signal would allow the City a head start to implement a high ranking project in the near term while tying into the 21st neighborhood bikeway project.

Project Overview

The transportation system within northeast downtown Denver is a complex network designed to serve both local and regional travel demand. The Northeast Downtown Neighborhoods (NEDN) Plan identified transportation improvements that intend to improve the area's multimodal mobility within the context of both neighborhood connectivity and the greater transportation system. The NEDN Plan was developed through a series of public involvement activities that began in 2010; the final study was completed in May 2011.

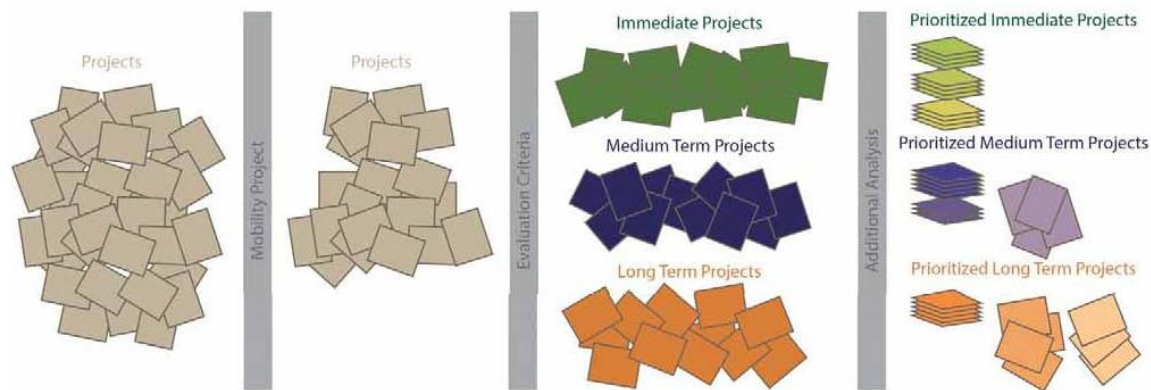
Building upon the NEDN Plan, the Next Steps Study first looked at mobility within the area and identified recent changes within the study area boundary. This exercise validated the projects identified in the plan and provided an understanding of changes that occurred since May 2011. A number of projects from the NEDN plan have already begun implementation. See **Figure 2** on page 10 for a mobility map that was created to show the various ways people move through the NEDN.

The purpose of the Next Steps Study is to prioritize the transportation infrastructure projects recommended in the NEDN Plan and to identify implementation strategies for the mobility projects identified in the plan. The study was performed in three (3) key phases.

(1) The first phase prioritized the transportation infrastructure projects identified in the NEDN Plan with the assistance of a Technical Advisory Committee (TAC) and input from the public. The TAC included a representative from the City Council Districts 8 and 9, business groups, and registered neighborhood organizations that are within the study area boundary, established in the NEDN Plan.

TAC members were asked to participate in three (3) meetings to assist in the process of prioritizing projects previously identified in the NEDN Plan. This began with developing a set of criteria based on the goals established in the NEDN Plan and was followed by applying the criteria to the project list. This resulted in a ranking of all the projects, which were further broken down into prioritization tiers. TAC members were encouraged to approach the prioritization process from the broader transportation network perspective based on the transportation connectivity needs within and surrounding the study area, and score projects accordingly.

Prioritization Process



The public was provided with an opportunity to provide input on the criteria and prioritization process that the TAC helped facilitate. Public engagement was held in coordination with the Regional Transportation District's (RTD) Central Rail Extension (CRE) Mobility Study, which encompassed a similar study area. Presence at CRE public meetings offered an opportunity to gain input from the broader public that was not directly associated with the TAC.

(2) In the second phase, the team identified implementation strategies or key considerations for each project on the prioritized list. This included performing more detailed engineering analyses on each project (as applicable), and assessing potential costs, possible funding sources, and an implementation timeframe.

(3) The third phase included documentation and a final presentation to the TAC. This final report documents solutions and an implementation plan for the City to develop and implement these projects. The concepts included in this report are based on the project prioritization list developed with the assistance of the TAC, the key considerations for each project, and the detailed engineering analyses performed for each project.

A fourth TAC meeting was held to present the project concepts and implementation plan. Projects were represented in one of three ways: as part of a package of similar or connected projects, as a project already moving forward, or as a project that needed more information before a clear implementation recommendation could be made. Each project from the NEDN plan were provided either concept level information or key considerations in order to better define each mobility recommendation and allow the project to move forward towards implementation.

PROJECT STUDY AREA

The project study area was consistent with the original Northeast Downtown Neighborhoods Plan. The study area is shown in **Figure 1** on the following page and is bounded by the Union Pacific Railroad (UPRR) tracks on the north, 20th Street on the west, 20th Avenue on the south and Downing/ Marion on the east sides.

Figure 1 – Project Study Area Map



MOBILITY MAPPING EXERCISE

The mobility mapping exercise built upon the NEDN Plan by identifying existing and planned mobility patterns within and around the northeast neighborhood. This exercise provided an overview of the broader transportation and land use context and influence area in order to better inform the recommendations made in this plan. This review of existing plans influencing neighborhoods surrounding the study area allowed the NEDN Next Steps Study to consider key connections into and out of the neighborhood. It considered initiatives and ideas that have occurred since the original NEDN Plan that need to be incorporated into the study. This exercise also identified key origins and destinations in the area that was used to inform project prioritization.

A series of meetings were held internally with members of different City Departments, including Public Works, Transportation Services, Public Works Policy and Planning, and Sustainability; Community Planning and Development; and the Office of Economic Development. Recommendations from previously adopted plans in the study area were mapped out to ensure that the list of mobility projects from the NEDN Plan were still relevant and compatible with recent changes in the area. At these meetings, concurrent planning projects in the study area were also mapped and discussed. Concurrent projects included:

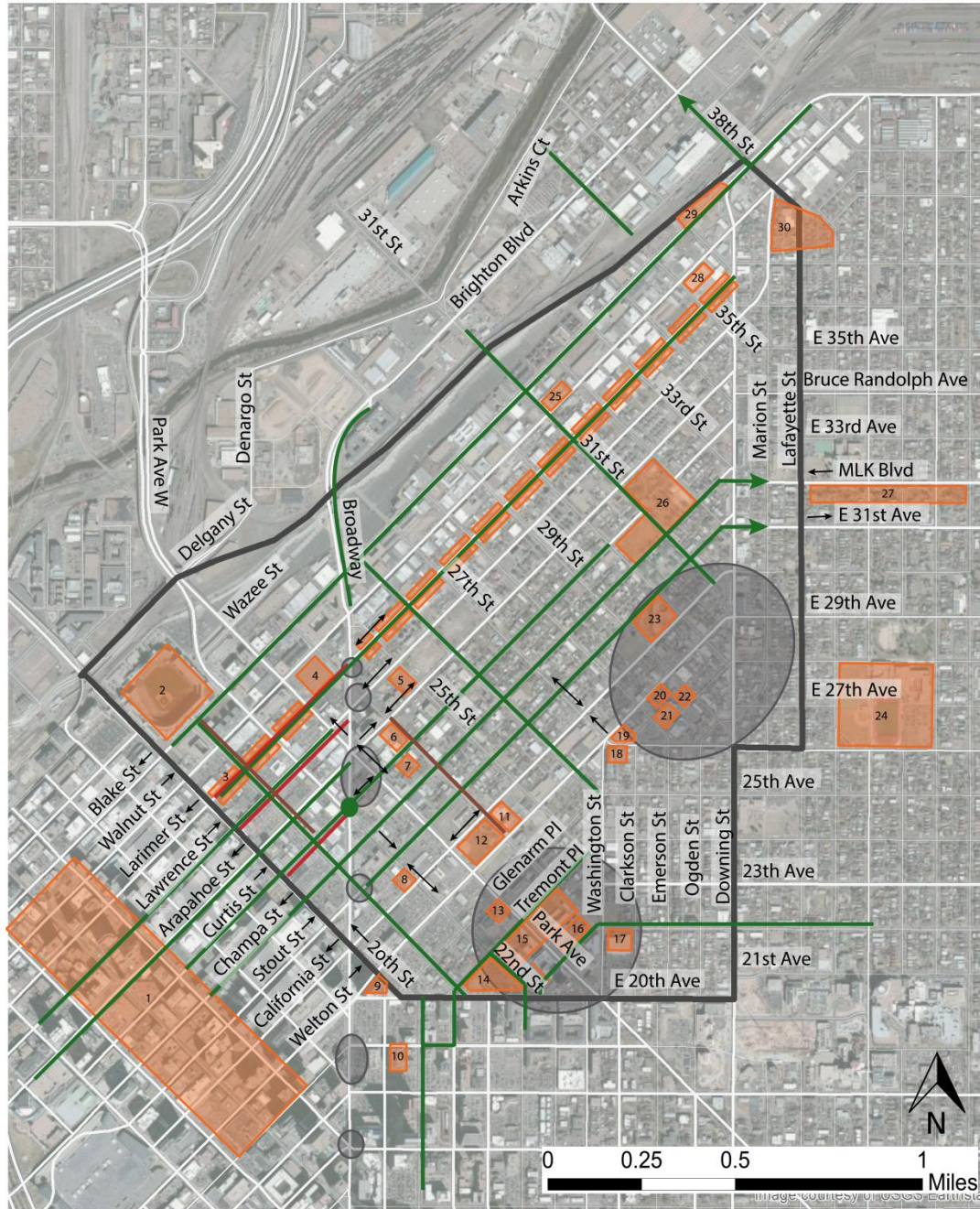
- 35th/36th Pedestrian Bridge
- 38th & Blake Next Steps Study and Implementation Plan
- 38th Street Bridge Project (“the hump”)
- Welton Street Design Guidelines
- Regional Transportation District (RTD) Central Rail Extension (CRE)
- Brighton Boulevard Conceptual Design Plans
- Downtown Two-Way Conversion Initiative

Through these meetings, it was determined that the mobility projects in the NEDN Plan were still pertinent and that all of the projects would move forward to be evaluated. No additional projects were deemed appropriate to add to the project list. Meeting notes and mobility mapping results can be found in **Appendix A**.

The following page shows the results of mobility mapping (**Figure 2**), including origin and destination information as well as the multi-modal infrastructure (existing and planned) supporting the areas mobility. Origin and destination refers to a trip beginning or a trip ending. It is associated with travel patterns within an area. Generally, origins are the residential neighborhood(s) and the destination would be a workplace or commercial/attraction area that includes amenities such as shopping, restaurants or a stadium. The legend of the map refers to both a Cultural/Festival/Enhanced Street and a One to Two Way Conversion. A Cultural/Festival/Enhanced Street is a street that can either be closed to vehicular traffic permanently or temporarily and includes amenities to attract pedestrian traffic. Example uses may be seasonal festivals, outdoor markets or simply just a pedestrian safe walkway to an attraction, such as Coors Field in this case. A one to two way conversion suggests converting some of the many one directional streets in the study area to two directional.

Figure 2–Mobility Map

NE Neighborhoods Mobility Map Recommendations



Legend

- Bicycle/Pedestrian Connection
- Cultural/ Festival/ Enhanced Street
- 1 to 2-Way Conversion
- Development/Origin/ Destination
- Confusing/ Challenging Grid

Origin-Destination Legend

- | | | |
|--|--|---|
| <ol style="list-style-type: none"> 1. Downtown 2. Coors Field 3. Larimer- Retail/ Main St 4. High-Rise Residential 5. School- University Prep 6. Redline 7. School- Montessori 8. Mercury Cafe 9. Light Rail Station 10. School- DPS | <ol style="list-style-type: none"> 11. Blair Caldwell African American Research Library 12. Lawson Park 13. School- Ebert Elementary 14. Benedict Fountain Park 15. Housing Development 16. Housing Development 17. Grocery- Safeway 18. Coffee at The Point 19. Light Rail Station 20. Clinic | <ol style="list-style-type: none"> 21. Glenarm Recreation Center 22. DMV 23. School- Gilpin Elementary 24. School- Manual High 25. The Walnut Room 26. Curtis Park 27. George Morrison Park 28. Exdo Event Center 29. 38th and Blake Station 30. St. Charles Park |
|--|--|---|

NEIGHBORHOOD PLAN PROJECTS

The following mobility projects were identified in the NEDN Plan. These projects were confirmed as projects to be prioritized during the mobility mapping exercise and are categorized below into groups of similar projects.

MULTIMODAL PROJECTS

These projects were recommended in the NEDN Plan to enhance the multimodal connectivity of the northeast neighborhoods by specifically considering accommodation for bicyclists and pedestrians.

- Curtis Park Traffic Calming Opportunities
- 21st Street Festival Street/Bike Boulevard (Blake Street to 20th Avenue)
- Curtis Street Enhance Pedestrian Environment (30th Street to 14th Street)
- River North and Ballpark Complete Sidewalk Network
- 33rd Street Multimodal Bridge (Across Union Pacific Railroad Tracks)
- 31st Street Bicycle/Pedestrian Bridge (Across Union Pacific Railroad Tracks)

PEDESTRIAN/BICYCLE CROSSING AT BROADWAY

The NEDN Plan recommended the evaluation of short-term improvements for pedestrians and bicyclists to more safely and conveniently cross at Broadway. Modification should be studied to minimize out-of-direction travel by pedestrians and emphasize pedestrian priority through bulb outs, pedestrian phasing, median island refuge areas on Broadway, and new diagonal pedestrian crossings. The following are the Broadway intersections analyzed in this study:

- 24th Street
- Larimer Street
- Arapahoe Street
- Lawrence Street
- Champa Street
- Curtis Street
- Stout Street
- 21st Street
- Welton Street

ONE TO TWO WAY CONVERSIONS

One to two way conversions were recommended in the NEDN Plan to improve the pedestrian experience, safety, and livability by lowering vehicular speeds and allowing for bike/ped crossing opportunities. These projects would entail converting a corridor from one way to two way travel, which could include any necessary additional signalization, bike/ped crossings, or infrastructure change. The following segments are considered for conversion in this study:

- 28th Street (Welton Street to Glenarm Place)
- 27th Street (Welton Street to California Street)
- 22nd Street (Champa Street to Stout Street)

- Glenarm Place (29th Street to Downing Street)
- Welton Street (Park Ave to Downing Street)
- California Street (Park Ave to Broadway)
- Stout Street (Broadway to Downing Street) (reclassify to collector)
- Champa Street (Downing Street to Broadway) (reclassify to collector)
- Curtis Street (18th Street to Broadway)
- Walnut Street (18th Street to Downing Street)
- Larimer Street (Broadway to 18th Street)
- Blake Street (Broadway to 18th Street)
- Blake Street (38th Street to Broadway)

RECOMMENDED STUDY

The NEDN Plan recommended that several other projects and studies be conducted to evaluate travel patterns and transportation concepts.

- Broadway Study of Pedestrian/Bicycle Crossings (Welton Street to Larimer Street)
- Broadway Study to Evaluate Alternatives between Arapahoe Street and Welton Street
- Study Connecting Parks to Destination Areas
- Downtown Strategic Transportation Plan Travelshed Analysis

Prioritization Process

The project prioritization process took place over several months. The process included internal City meetings to evaluate changes since the NEDN Plan was adopted, development of evaluation criteria, Technical Advisory Committee (TAC) meetings to understand community stakeholder project priorities, community meetings to share information with the greater public, and engineering analyses to understand project feasibility and implementation strategies.

CRITERIA DEVELOPMENT

The City intends to implement infrastructure that achieves its mobility goals. Therefore, the project team developed criteria that accurately assess how well a project will achieve a goal. It was important to understand how well each project achieved each of the mobility goals developed from the NEDN Plan in order to adequately prioritize the NEDN Plan mobility projects

As part of the criteria development, plans completed in the study area were reviewed to understand their mobility goals. The following plans were reviewed:

- Blueprint Denver
- Downtown Multimodal Access Plan
- Downtown Area Plan
- Denver Strategic Transportation Plan
- I-70 EIS Draft
- 38th and Blake Station Area Plan
- River North Greenway Master Plan
- Five Points District Development Plan
- City and County of Denver Storm Drainage Master Plan
- Colfax Streetcar Feasibility Study
- Denver Moves Bicycle Plan
- 38th and Blake Next Steps Traffic Operational Study
- Five Points Business District Vision Plan Implementation and Revitalization Strategy
- Jumpstart 2013- Office of Economic Development
- River North Plan
- Pedestrian Master Plan
- North Denver Cornerstone Collaborative
- Brighton Boulevard Plan

Upon review and summary of all of these plans, it was determined that the mobility goals for the northeast neighborhoods are still consistent with the goals laid out in the NEDN Plan. As a result, the goals and criteria from the NEDN Plan were used to facilitate the prioritization of the mobility project list.

Criteria with the following descriptions from the NEDN Plan that were carried forward to prioritize mobility projects included:

5. **Neighborhood Connections and Character** – Maintaining the unique character of each neighborhood in the northeast downtown and ensuring that new development on neighborhood edges contributes to the successful transition between areas.
6. **Economic Development and Opportunity** – Encouraging new investment by attracting new businesses, supporting the growth of existing businesses, encouraging the reuse of existing structures, attracting new development and increasing employment opportunities.
7. **Livability and Public Realm** – Ensuring that the various elements comprising the public realm (streets, sidewalks, parks, plazas, transit stops/stations, landmarks, housing, open spaces) positively contribute to the quality of life for residents, businesses, and visitors alike.
8. **Mobility** – Enhancing the multimodal transportation system to balance the needs of all users and modes, including automobiles, pedestrians, bicyclists, transit, freight, and delivery vehicles.

Details on the goals, guiding principles, and support for these criteria from other plans can be found in **Appendix B**. The mobility criteria were broken down further into a criterion for each mode, while the other criteria stayed intact from the NEDN Plan. Using the criteria below, each project was evaluated as either “very effective” (2 points), “moderately effective” (1 point), or “not effective/ N/A” (0 points) on the following:

- Neighborhood Connections & Character
- Economic Development & Opportunity
- Livability & the Public Realm
- Pedestrian Mobility
- Bicycle Mobility
- Automobile/Freight Mobility
- Transit Mobility

PUBLIC OUTREACH

The PMT took a strategic approach to outreach and utilized other public meetings that were occurring concurrently with this process in order to avoid meeting fatigue with the general public. Project materials were made available on the study’s website and at public meetings for the Regional Transportation District’s (RTD) Central Rail Extension (CRE) Mobility Study, which encompassed a similar study area. The study was completed to determine the best way to provide a direct rail transit trip between the 38th and Blake Station and downtown Denver without a transfer and to establish a long-term vision with the local community for the entire Central Rail Line. The 38th and Blake Station will serve the East Rail Line which is currently under construction and will travel between Denver Union Station and Denver International Airport. The CRE is intended to provide the northeast downtown neighborhoods with more direct access to the new East Rail Line, while also providing East Rail Line passengers with a second rail connection into downtown Denver.

Two joint meetings for the general public were held during the project—on February 26, 2014 and July 16, 2014. During these meetings, the current progress of the NEDN Next Steps was shared with attendees. Meetings also provided an opportunity for attendees to ask questions and provide input on

the prioritization process and relevant projects. While the studies were separate, they were being performed in coordination, which provided the opportunity to gain input from the broader public.

Additional public outreach is associated with the Technical Advisory Committee, which is described further in the following section.

TECHNICAL ADVISORY COMMITTEE

In order to facilitate stakeholder input on this project, a Technical Advisory Committee (TAC) was convened. The team reached out to all registered neighborhood groups, business groups, the Downtown Denver Partnership, and council representatives within the study area. The volunteer TAC was made up of the following individuals:

- Everett Martinez, Arapahoe Square Neighborhood Association
- Judy Schneider, Ballpark Neighborhood Association
- Cynthia Wake, Cole Neighborhood Association
- John Hayden, Curtis Park Neighbors
- Robert Vasquez Jr, Curtis Park Preservation Council
- Charles Nadler, Downtown Denver Residents Organization
- Larry Burgess, Elyria Swansea/ Globeville Business Association
- Craig Supplee, Enterprise Hill Homeowners Association
- Tracy Winchester, Five Points Business District
- Karen Brown-Gerdine, Five Points Historic Association
- John Desmond, Downtown Denver Partnership
- Mark McClung, San Rafael Neighborhood
- Darrell Watson, Whittier Neighborhood Association
- Eric Crotty, Community Coordinating District
- Justin Croft, RINO Neighbors
- Albus Brooks, City Council District 8
- Benjamin Rojas, City Council District 9 Aide
- Drew O'Connor, Place-Based Initiatives

TAC members were asked to participate in four (4) meetings total, three (3) to assist in the process of prioritizing projects and a final meeting to provide input on the design concepts. These meetings were small and very conversational. The TAC provided valuable information that guided the recommendations made in this study. All meeting materials from the TAC meetings can be found in **Appendix D**.

TAC MEETING #1

The first TAC meeting in February 2014 kicked off the project with the TAC. Members of the project team and the TAC were introduced and discussed their desired outcomes of the study. The focus of the meeting was getting TAC members familiar with the Northeast Downtown Neighborhoods (NEDN) Plan as well as the purpose of the Next Steps Study. The mobility projects to be prioritized and the criteria to be used were presented to the TAC. TAC members were asked to provide feedback, which included:

- Lawrence Street is a couplet to Larimer Street. The conversion of this couplet together has been a part of discussions during other projects in the area. The study should consider including the one to two way conversion of Lawrence Street.
- The importance of using the same templates and terminology was emphasized in order to have effective communication. A key example of this is on Welton Street; the current branding effort is calling this part of Welton Street from Park Ave to Downing Street the “Welton Street Commercial Corridor Cultural District.”
- The Broadway intersection at 21st Street should stay on the project list, even if the 21st festival street is taken off the list further in the process, since these are separate projects.
- The study area does not appear to include the entire River North neighborhood. In project graphics (where feasible) the entire River North area should be illustrated to help reaffirm connectivity throughout River North.
- Additional plans to incorporate into the goals section are: The River North Plan, Denver Pedestrian Plan, Brighton Boulevard Plan and North Denver Cornerstone Collaborative.
- Removal of “the hump” at 38th and Blake should be considered while prioritizing the projects.
- TAC members requested that project sheets (containing project images and descriptions, as discussed in greater detail under TAC Meeting #2) be sent out in advance of the next TAC meeting in order to allow for advanced preparation.
- Three short, one to two way conversion segments were missing from the original project list and will be added- Glenarm Place, 27th Street and 28th Street.
- The TAC and agency staff discussed what role the engineering portion of the analysis will play on the study. The TAC was concerned that the engineering portion of the analysis will rearrange the prioritization that the TAC develops. It was discussed that the engineering portion of the project is intended to further evaluate the conceptual cost, design, and timing of each project. It is not intended to rearrange the TAC’s recommendations. However, it was noted that there may be projects that are determined to be infeasible due to cost, or could take years due to funding requirements, while others are low hanging fruit that could be focused on in the near-term. The TAC will be informed if changes to the prioritization occur during engineering.



Additional comments can be found in the minutes for TAC #4 in **Appendix D**.

TAC MEETING #2

During the second TAC meeting in April 2014, the prioritization process was kicked off. The project team developed a set of project sheets that described each project and asked how well each of the projects achieved the prioritization criteria. Each TAC member was provided with a packet of project worksheets. This packet of project sheets can be found in **Appendix C**. TAC members were asked to fill out the project sheets.



In order to prioritize projects, TAC members were asked to provide each project 0, 1, or 2 points for each of the criteria and a total project score was obtained by adding up the points for all the criteria and averaging the number based upon the number of TAC members that scored the project. A score of "0" was assigned if the check box indicated "not applicable". A number 1 was assigned if the check box indicated the project was "moderately effective" and a number 2 was assigned if the check box indicated the project was "very effective". The checked boxes related to the effectiveness of the criteria to achieve the goals of the neighborhood. Scores were summed and projects were ranked and placed into three tiers based on natural breaks in the average points received per respondent. The resulting scores and rankings are displayed in **Figure 3**.

After the project sheets were distributed, TAC members engaged in a discussion about the included projects. Some specific project comments included:

- Project: River North and Ballpark Complete Sidewalk Network
Comment: Encourage developer to take care of sidewalk; in 2010 many developments were accounted for.
Comment: River North sidewalks are not the only thing needed; without lights and other amenities, no one will feel safe walking.
- Project: Broadway Bicycle and Pedestrian Crossing Enhancements
Comment: Broadway and Park Ave are very difficult to cross on foot or bicycle from 26th Street to 20th Street all the way through Ballpark to Glenarm Place.
Comment: It is just assumed in RiNo that you don't cross Broadway because it is so unfriendly to pedestrians.
- Project: Broadway Study to Evaluate Alternatives
Comment: It is unclear how individual intersections and full corridor studies work together. Project team members clarified that all projects in the sheets were lifted directly from the original plan. Running the prioritization will help the project team understand which projects or studies are desired to move forward with. Please rank both and provide comments where needed.

- Projects: Champa Street and Stout Street One to Two Way Conversions
Comment: The interest in converting these streets to two way streets has decreased from the neighborhood perspective. The neighborhood is most interested in traffic calming along the streets, and residents have questions about how a two way conversion achieves this goal. The benefits do not necessarily outweigh the negative impacts.
- Projects: Blake Street and Walnut Street One to Two Way Conversions
Comment: From a neighborhood perspective, Walnut Street should be preferred as RTD's main corridor. It seems like Blake Street is being portrayed as the main transit corridor by RTD currently. However, Walnut Street is more appropriate as the main transit corridor. TAC members said they would be supportive of a two way conversion on both corridors.
- Project: One to Two Way Conversions
Comment: These were originally proposed by the community as a way to provide traffic calming. However, not all two way street are slow/calm. It is really dependent on their location and role in the network. Specific design features to slow traffic down need to be considered as project plans move forward.
- Project: Welton Street One to Two Way Conversion
Comment: A two way Welton Street would provide enhanced access to businesses and build economic development opportunities in the corridor.
- Project: Broadway/ 21st Pedestrian/Bicycle Crossing at Broadway
Comment: This intersection is a "pedestrian nightmare" that needs to be fixed to create connections between downtown and adjacent neighborhoods.

Additional comments can be found in the minutes for TAC #2 in **Appendix D**.

TAC MEETING #3

At the third TAC meeting in May 2014, the project team presented the preliminary results of the TAC prioritization and explained how the projects had been organized into three project tiers based on the average number of points per respondent (see **Figure 3**). **Figure 4**, the Prioritized Projects Map, depicts the project area, color coding each project location by tier with its overall ranking. This map was developed to show the ranking of the projects as well as reference the geography of the projects relative to one another. Overall, TAC members felt that the prioritization process resulted in an accurate representation of their project priorities. Several comments were made regarding projects that did not rank in Tier 1, but that individual TAC members have interest in. Comments included:

- Broadway probably warrants a full corridor study to connect with the work being done on Brighton Boulevard. It is a major barrier segmenting neighborhoods that needs to be addressed. It serves an important role as a gateway to Denver.
- There is a desire to include Lawrence Street One to Two Way Conversion (Broadway to 18th Street) to the ranking, since it is a couplet with the proposed Larimer Street conversion and has been considered in other planning efforts.
- Curtis Park traffic calming and RiNo sidewalk project ranked surprisingly low, but perhaps the amorphous nature of these projects brought their ranking down. These projects are important because public infrastructure needs to support the long term vision for the neighborhood.

- Linking downtown to the surrounding neighborhoods is really important and is only being accomplished in the Curtis Street Enhance Pedestrian Environment project, therefore there is concern that this project should have ranked higher.
- Concern about the Blake Street One to Two Way Conversion project being ranked significantly higher than the Walnut Street conversion. These projects should be linked and this discrepancy doesn't match development patterns on these two corridors.
- There needs to be a dynamic element to this process, where if a catalytic project is implemented, the rankings are able to change and a project is able to move up. Examples include CRE, Greyhound, and development on Walnut Street.

Additional comments can be found in the minutes for TAC #3 in **Appendix D**.

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Figure 3–Project Prioritization

NE Downtown Neighborhoods Plan - Next Steps Study
Project Prioritization and Conceptual Engineering Evaluation

2010 - 2011 Projects/Studies Identified in the Northeast Downtown Neighborhoods Plan					May 2014 TAC Ranking		June 2014 - February 2015 Engineering Evaluation and Feasibility						
Projects/Studies Identified in the Northeast Downtown Neighborhoods Plan													
Project/Study	Category/Type	Timeframe	Implementation Complexity	Cost	TAC Rank	Avg points/ respondent	Implementation Complexity	Cost Range (2014 Dollars)	Funding opportunities	Implementation time frame	Implementation Feasibility	Notes	
Tier 1	Welton Street (Park Ave to Downing)	One to Two Way Conversion	Medium-long	High		1	12.40	High		Long	Moderate	Further study needed for costs	
	Larimer Street	Ped/ Bike Crossing at Broadway	Short	Low	\$ - \$\$	2	11.55	Moderate	\$53,600 - \$157,700	Operational	Short	High	
	21st Festival Street/ Bike Boulevard (Blake Street to 20th Avenue)	Multimodal	Bike Blvd- short, festival street- medium	Moderate		3	11.27	Moderate			Short	High	Moving forward
	31st Street Bicycle/Pedestrian Bridge (across Union Pacific railroad tracks)	Multimodal	Long	High	\$\$\$\$	4	10.95	High	\$4,000,000- \$6,000,000	Grant	Long	Low	
	21st Street	Ped/ Bike Crossing at Broadway	Short	Low	\$\$ - \$\$\$	5	10.55	Low	\$371,000-\$510,300	Operational - CIP	Short	High	
	Broadway Study- Pedestrian/ Bicycle crossings (Welton to Larimer)	Recommended Study	Short	Low	\$	6	10.47	Low	\$100,000 - \$150,000	Operational	Short	High	
	Blake Street (38th Street to Broadway)	One to Two Way Conversion	Short-medium	Low	\$\$	7	10.45	Low	\$320,400	CIP	Short	High	
	Larimer Street (Broadway to 18th Street)	One to Two Way Conversion	Medium-long	Moderate	\$\$\$\$	8	10.40	Moderate	\$2,773,700	Grant	Medium - Long	Moderate	
	Broadway- Study to Evaluate Alternatives (Arapahoe to Welton)	Recommended Study	Medium	Low	\$\$	9	10.40	Low	\$150,000-\$200,000	Operational	Medium	Moderate	
	Welton Street	Ped/ Bike Crossing at Broadway	Medium	High	\$	10	10.18	High	\$35,700 - \$105,200	Operational	Medium - Long	Moderate	
Tier 2	Blake Street (18th Street to Broadway)	One to Two Way Conversion	Medium-long	Moderate	\$\$\$\$	11	9.90	Moderate	\$2,600,000	Grant	Medium - Long	Moderate	
	Curtis Park Traffic Calming Opportunities	Multimodal	Short	Moderate	\$	12	9.60	Low	\$75,000 - \$150,000	Operational	Short	High	Study
	Lawrence Street	Ped/ Bike Crossing at Broadway	Short	Low	\$ - \$\$	13	9.52	Low	\$53,000-\$157,700	Operational	Short	High	
	River North and Ballpark Complete Sidewalk Network	Multimodal	On-going	High	\$\$\$\$	14	9.36	High	\$1,766,800	Grant	Short - Long	Moderate	Cost does not include ROW needs
	Arapahoe Street	Ped/ Bike Crossing at Broadway	Short	Moderate	\$ - \$\$	15	9.36	Low	\$53,000-\$157,700	Operational	Short	High	
	Champa Street	Ped/ Bike Crossing at Broadway	Short	Low	\$ - \$\$	16	9.30	Low	\$53,000-\$157,700	Operational	Short	High	
	Curtis Street	Ped/ Bike Crossing at Broadway	Short	Moderate	\$ - \$\$	17	9.27	Low	\$53,000-\$157,700	Operational	Short	High	
	Stout Street	Ped/ Bike Crossing at Broadway	Short	Low	\$ - \$\$	18	9.17	Low	\$53,000-\$157,700	Operational	Short	High	
	28th Street (Welton to Glenarm)	One to Two Way Conversion	Short-long	Low	\$	19	9.10	Low	\$6,400	Operational	Short	High	
	24th Street	Ped/ Bike Crossing at Broadway	Short	Moderate	\$ - \$\$	20	9.07	Low	\$53,000-\$157,700	Operational	Short	High	
	27th Street (Welton to California)	One to Two Way Conversion	Short-long	High	\$	21	9.00	Low	\$10,000	Operational	Short	High	
	Study Connecting Parks to Destination Areas	Recommended Study	Short-medium	Moderate	\$	22	9.00	Low	\$50,000 - \$125,000	Operational	Short	High	
Tier 3	Curtis Street Enhance Pedestrian Environment (30th Street to 14th Street)	Multimodal	Medium	Moderate		23	8.40	Moderate		CIP - Grant	Medium	Low	Further study needed for costs
	22nd Street (Champa to Stout)	One to Two Way Conversion	Medium-long	Low	\$\$\$\$	24	7.60	Moderate	\$1,189,900	CIP - Grant	Medium - Long	Moderate	
	Glenarm Place (29th Street to Downing)	One to Two Way Conversion	Short-long	Low	\$\$	25	7.40	Low	\$400,000	CIP - Grant	Medium	Moderate	
	Walnut Street (18th Street to Downing)	One to Two Way Conversion	Medium-long	Moderate to high	\$\$\$\$	26	7.33	Moderate	\$3,400,000	CIP - Grant	Short - Long	Moderate	
	Downtown Strategic Transportation Plan Travelshed Analysis	Recommended Study	Short-medium	Low	\$	27	7.20	Low	\$150,000	Operational	Short	Moderate	
	Curtis Street (18th Street to Broadway)	One to Two Way Conversion	Long	Moderate	\$\$\$\$	28	7.20	Moderate	\$1,200,000	CIP - Grant	Long	Low	
	California Street (Park Ave to Broadway)	One to Two Way Conversion	Short-medium	Moderate	\$\$\$	29	6.60	Moderate	\$600,000	CIP - Grant	Medium	Low	
	Champa Street (reclassify to collector) (Downing to Broadway)	One to Two Way Conversion	Reclassification- short, conversion- long	High	\$\$\$\$	30	5.40	Low	\$1,800,000	CIP - Grant	Long	Low	Not recommended to move forward
	Stout Street (reclassify to collector) (Broadway to Downing)	One to Two Way Conversion	Reclassification- short, conversion- long	High	\$\$\$\$	31	5.20	Low	\$1,800,000	CIP - Grant	Long	Low	Not recommended to move forward
	33rd Street Multimodal Bridge (across Union Pacific railroad tracks)	Multimodal	Long	High	\$\$\$\$	32	1.50	High	\$4,000,000 - \$6,000,000	CIP - Grant	Long	Low	Not recommended to move forward

Notes:

- Some projects may need to be considered as pairs or packaged together due to functional relationship between the projects/studies and some projects may need to be broken into sub-projects to recognize logical termini
- On-going projects and new projects that begin in the study area will continue to be referenced/considered as each project in study is further evaluated

Figure 4–Prioritized Projects Map

Tier 1

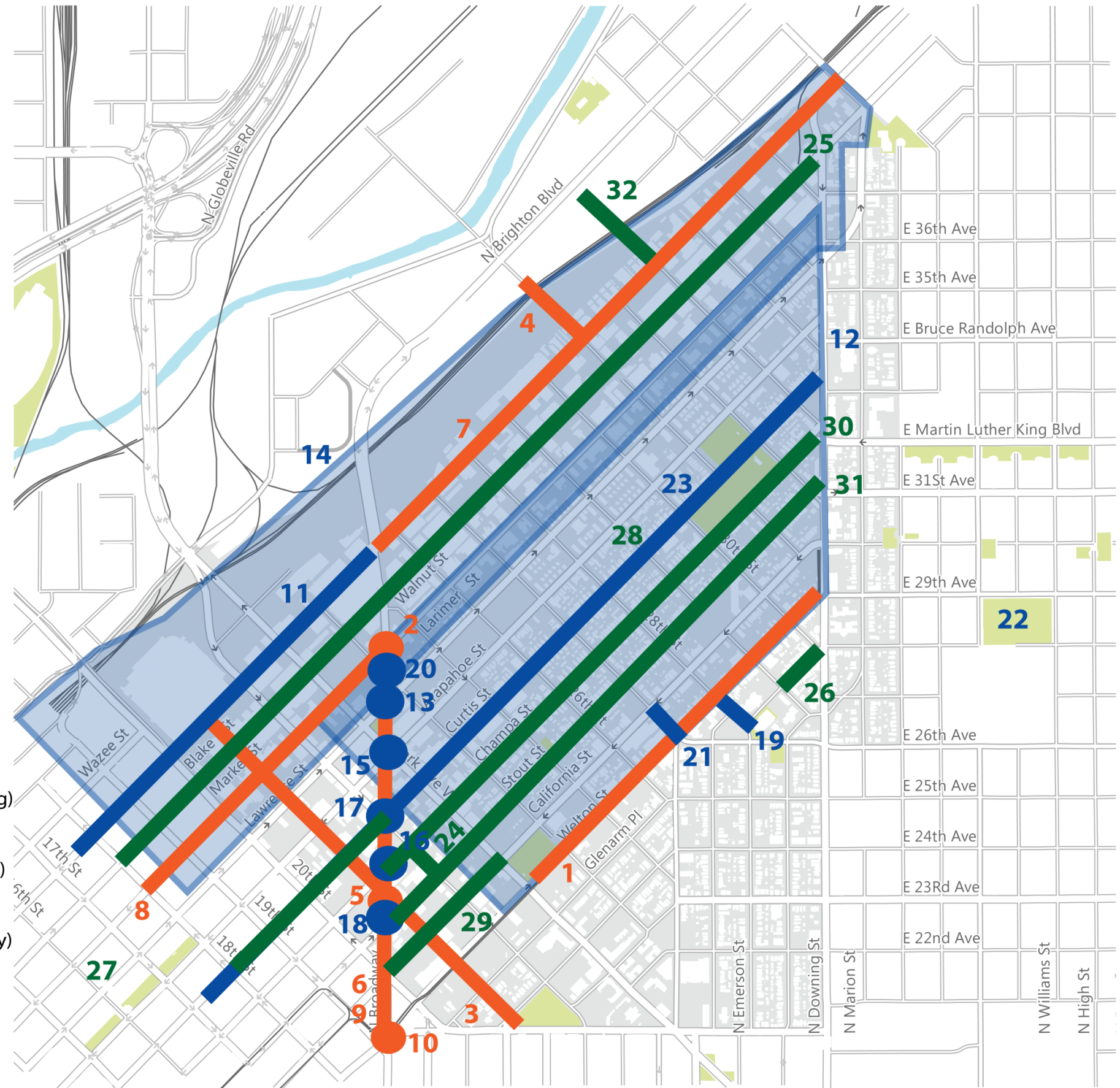
- 1 Welton Street: One to Two Way Conversion (Park Ave to Downing)
- 2 Larimer Street: Ped/ Bike Crossing at Broadway
- 3 21st Street: Festival Street/ Bike Boulevard (Blake to 20th Avenue)
- 4 31st Street Bicycle/ Pedestrian Bridge (over UPRR tracks)
- 5 21st Street: Ped/ Bike Crossing at Broadway
- 6 Broadway Study: Ped/ Bike Crossings (Welton to Larimer)
- 7 Blake Street: One to Two Way Conversion (38th Street to Broadway)
- 8 Larimer Street: One to Two Way Conversion (Broadway to 18th Street)
- 9 Broadway: Study to Evaluate Alternatives (Arapahoe to Welton)
- 10 Welton Street: Ped/ Bike Crossing at Broadway

Tier 2

- 11 Blake Street: One to Two Way Conversion (Broadway to 18th Street)
- 12 Curtis Park Traffic Calming Opportunities
- 13 Lawrence Street: Ped/ Bike Crossing at Broadway
- 14 River North and Ballpark Complete Sidewalk Network
- 15 Arapahoe Street: Ped/ Bike Crossing at Broadway
- 16 Champa Street: Ped/ Bike Crossing at Broadway
- 17 Curtis Street: Ped/ Bike Crossing at Broadway
- 18 Stout Street: Ped/ Bike Crossing at Broadway
- 19 28th Street: One to Two Way Conversion (Welton to Glenarm)
- 20 24th Street: Ped/ Bike Crossing at Broadway
- 21 27th Street: One to Two Way Conversion (Welton to California)
- 22 Study Connecting Parks to Destination Areas
- 23 Curtis Street Enhance Pedestrian Environment

Tier 3

- 24 22nd Street: One to Two Way Conversion (Champa to Stout)
- 25 Glenarm Place: One to Two Way Conversion (29th Street to Downing)
- 26 Walnut Street: One to Two Way Conversion (18th to Downing)
- 27 Downtown Strategic Transportation Plan Travelshed Analysis
- 28 Curtis Street: One to Two Way Conversion (18th Street to Broadway)
- 29 California Street: One to Two Way Conversion (Park Ave to Broadway)
- 30 Champa Street: One to Two Way Conversion (Downing to Broadway)
- 31 Stout Street: One to Two Way Conversion (Broadway to Downing)
- 32 33rd Street Multimodal Bridge (across UPRR tracks)



TAC MEETING #4

At the fourth TAC meeting in November 2014, the project team reviewed the project list and presented the additional information that had been compiled on the individual projects. Project packages, described in the following section below, were introduced to the TAC and were explained to be those projects that would easily be bundled for future analysis and/or implementation due to geography to one another and/or similar characteristics, not based on priority like the three-tiered list. The packages were shown as a suggestion and any of the projects could easily be unbundled and move forward as an individual project.

The team also explained key considerations for standalone projects that could not be grouped into a package and those that were moving forward through other means or require further definition.

Comments included:

- The packages are confusing and it would be simpler to have the projects separated (See next section: Project Packages)
- 24th Avenue pedestrian corridor should be included with the list of projects.
- The examples shown for the pedestrian and bicycle improvements across Broadway are not as innovative as the stakeholders would like to see. The examples shown are new term improvements but the stakeholders would like improvements that have more Urban Design elements and maybe more capital intensive.

Welton continues to be important to the community and needs to be studied. The preliminary layout of the 21st and Broadway pedestrian and bicycle crossing was also presented to the TAC. The group was informed that preliminary design was moving forward as part of this project in order to provide the City with a project that could be implemented upon completion of Final Design plans and as funding is identified.

PROJECT PACKAGES

Following the TAC ranking process, some of the projects were placed in packages based on their proximity, interdependence, and similar characteristics. Project packages did not create a new ranking for projects, but rather provided a framework for which to perform an operational analysis or conceptual design. While the three tiers explained above provide project prioritization, packages allowed project design and further analysis to consider the interaction between various projects. Each package included both highly scored projects and those with lower scores.

Along with four packages, A, B, C, and D, the other projects that were prioritized are either listed as needing more information in order to move forward, or listed as already moving forward in conjunction with other planning processes or funding sources. Their priority ranking was also scored by averaging the individual priority ranking of each project as shown in the table that is **Figure 3**. **The packages are further described below, but based on TAC feedback, projects are unbundled, summarized and listed individually by priority at the end of this report.** The priority tier is also indicated on the graphic for each project within the four packages based on illustration outline color (orange – top tier, blue- second tier, green – third tier).

PACKAGE A

Package A

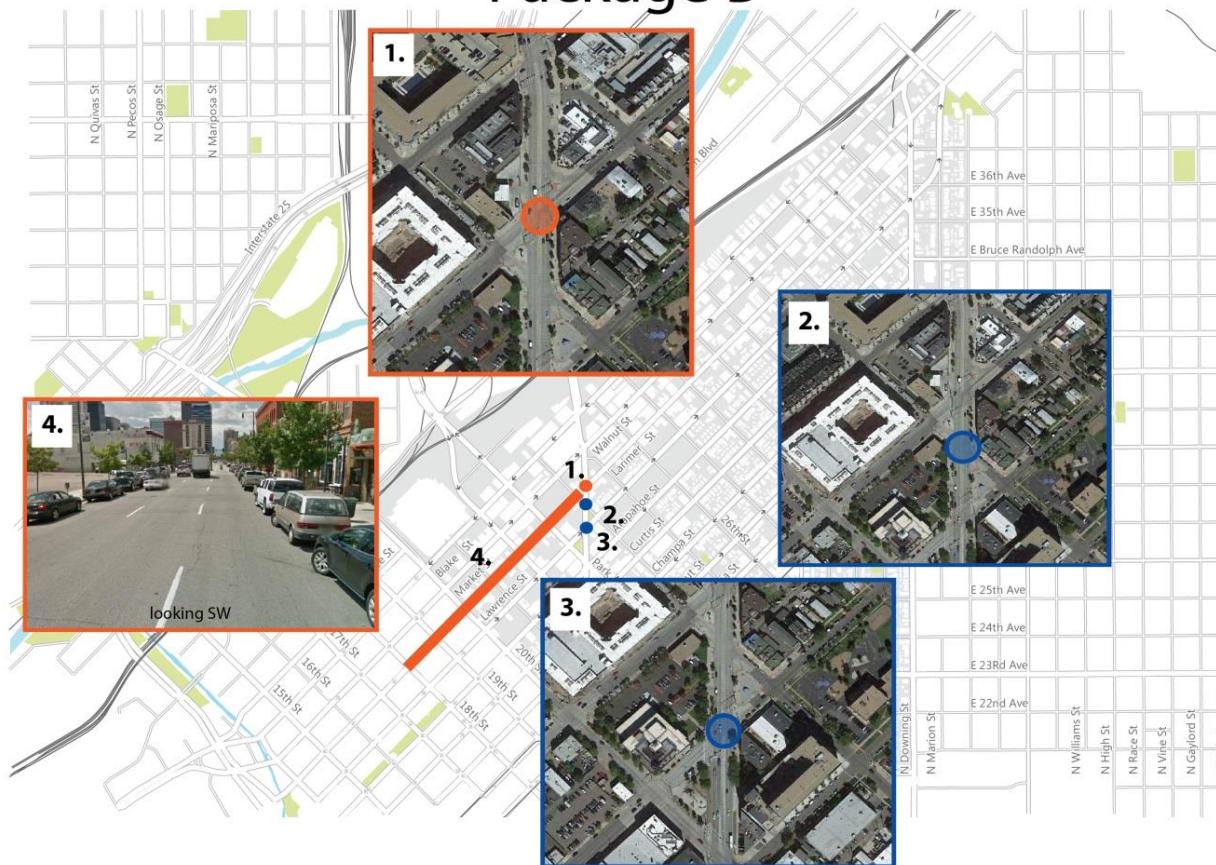


1. Curtis Street- Ped/Bike Crossing at Broadway (**Tier 2**)
2. Champa Street- Ped/Bike Crossing at Broadway (**Tier 2**)
3. 21st Street- Ped/Bike Crossing at Broadway (**Tier 1**)
4. Stout Street- Ped/Bike Crossing at Broadway (**Tier 2**)
5. 22nd Street (Champa to Stout)- One to Two Way Conversion (**Tier 3**)

Package A projects were bundled due to similar characteristics and proximity to one another. Four of the five projects provide pedestrian/bicycle (ped/bike) crossings improvements along the Broadway Corridor at nearby intersections, therefore, it would be advantageous to study and construct these crossings simultaneously. The crossing with the highest ranking is 21st Street, where another highly ranked project, the 21st Street Festival Street/Bike Boulevard outside this project, is co-located. Project #5, the conversion of 22nd Street from one to two ways between Champa and Stout is included in Package A due to its close proximity to the other projects in the package.

PACKAGE B

Package B

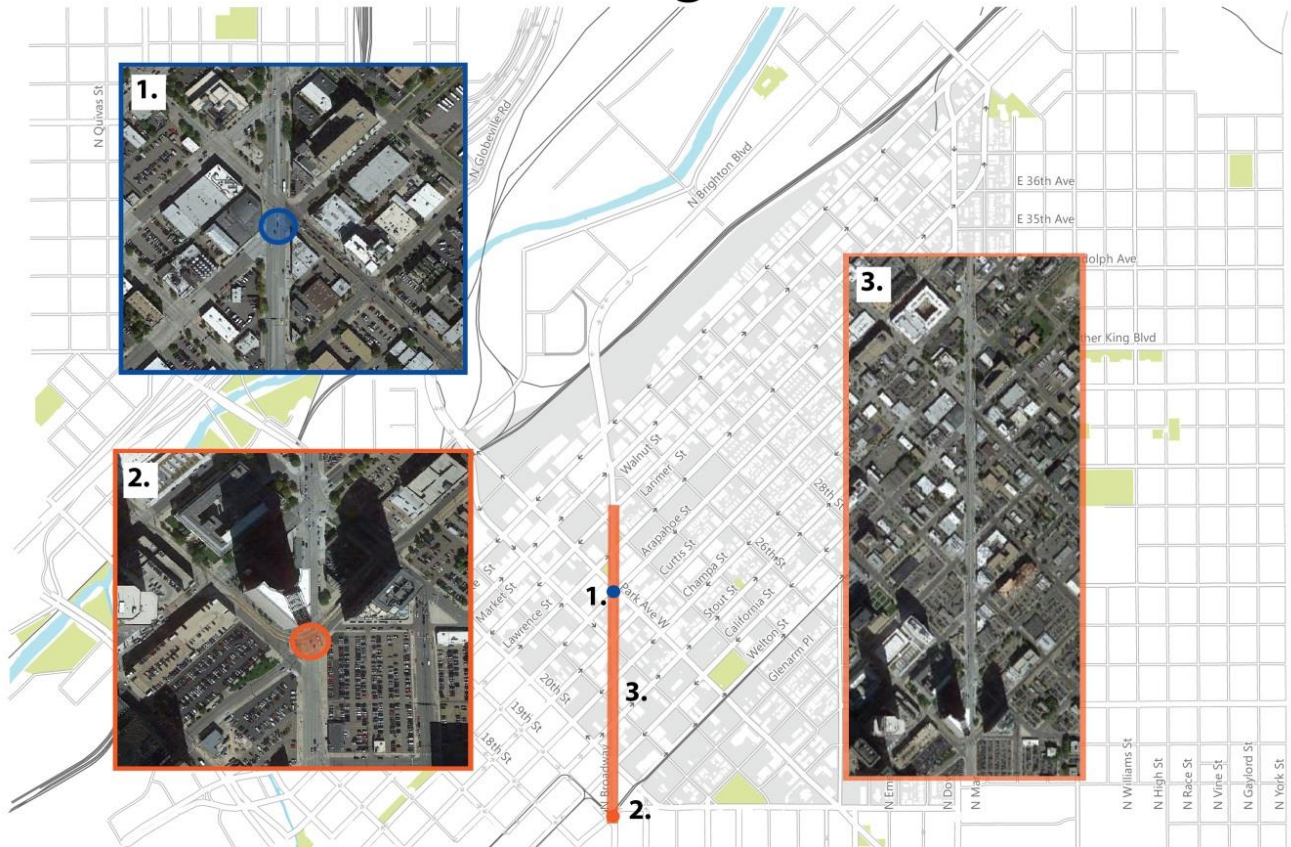


1. Larimer Street- Ped/Bike Crossing at Broadway (**Tier 1**)
2. 24th Street- Ped/Bike Crossing at Broadway (**Tier 2**)
3. Lawrence Street- Ped/Bike Crossing at Broadway (**Tier 2**)
4. Larimer Street (Broadway to 18th Street)- One to Two Way Conversion (**Tier 1**)

Package B projects were also bundled due to proximity and similar characteristics. Projects #1 and #4, both on Larimer, work as a pair to improve bicycle and pedestrian safety along Larimer and as Larimer crosses Broadway. The other two projects are bicycle/pedestrian crossings along the Broadway Corridor at nearby intersections. 24th Street was identified in the NEDN Plan as a key pedestrian route; therefore, enhancing its crossing with Broadway would work towards achieving that vision.

PACKAGE C

Package C

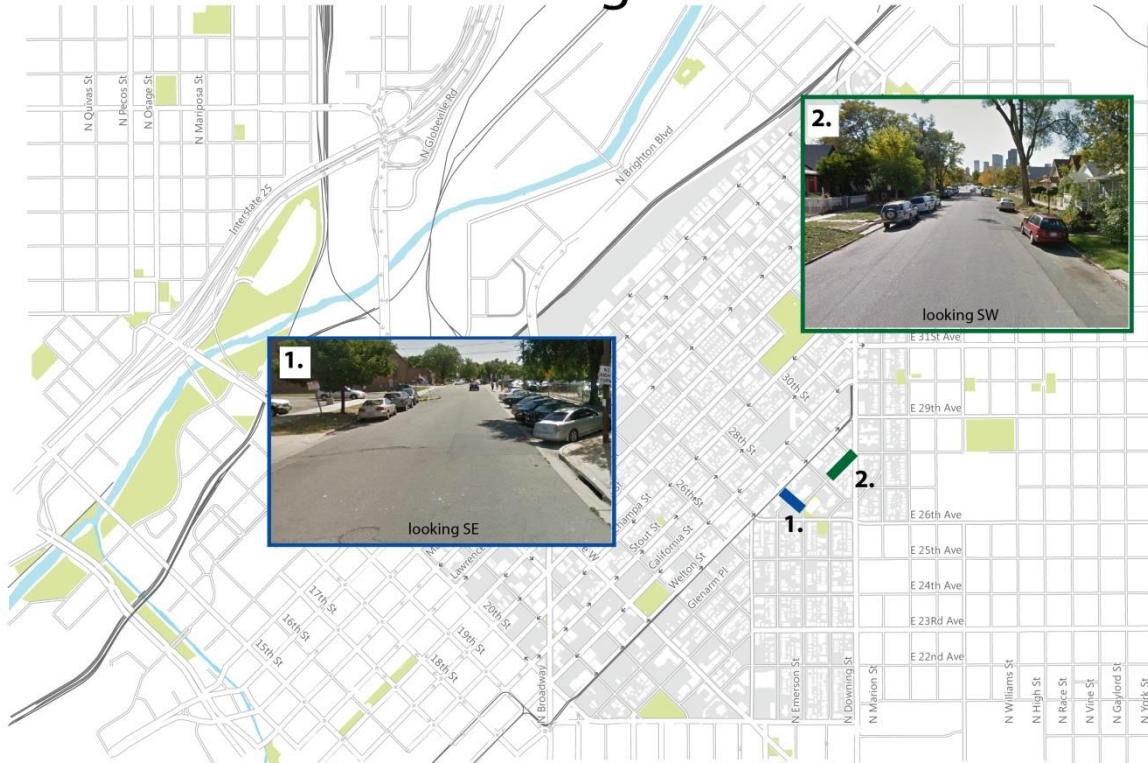


1. Arapahoe Street- Ped/Bike Crossing at Broadway (**Tier 2**)
2. Welton Street- Ped/Bike Crossing at Broadway (**Tier 1**)
3. Broadway Study (Welton to Larimer)- Pedestrian/ Bicycle Crossings (**Tier 1**)

Package C projects were bundled due to the added complexity that each project has compared to the other pedestrian/bicycle crossings. Project #1 is a complex six-way intersection that has more accesses and egresses than other intersections along the Broadway corridor. More study is required to understand the dynamics of this intersection to make it safer for bicyclists and pedestrians. Project #2 has a light rail line on Welton Street which adds to the complexity of the various modes crossing this intersection and the timing of the light rail. Project #3, the study of the crossings in the Broadway corridor is also complex, and a larger study can flesh out concepts and ideas for all the intersections along this corridor as well as look at the context for each crossing in greater depth.

PACKAGE D

Package D



1. 28th Street: One to Two Way Conversion (Welton to Glenarm)
2. Glenarm Place: One to Two Way Conversion (29th to Downing)

1. 28th Street (Welton to Glenarm)- One to Two Way Conversion (**Tier 2**)
2. Glenarm Place (29th Street to Downing)- One to Two Way Conversion (**Tier 3**)

The two Package D projects work together because they are both one block long, one to two way conversions on the edge of the study area. Converting these streets to two way is low cost and considered to have low complexity associated with the infrastructure needs. The conversions would be a beneficial impact to the residents of these blocks and provide easier mobility in general for users. These are not major streets and would not significantly impact the larger transportation system.

STANDALONE PROJECTS

The following is a list of projects that are considered standalone projects. They did not fit within a package presented. Key considerations have been provided for each of these projects in the Project List section as well as in **Appendix E**.

1. Blake Street (38th Street to Broadway) - One to Two Way Conversion (**Tier 1**)
2. 31st Street Bicycle/Pedestrian Bridge (**Tier 1**)
3. Broadway Study to Evaluate Alternatives (Arapahoe to Welton) (**Tier 1**)
4. Curtis Park Traffic Calming Opportunities (**Tier 2**)
5. River North and Ballpark Complete Sidewalk Network (**Tier 2**)
6. Study Connecting Parks to Destination Areas (**Tier 2**)
7. Curtis Street Enhance Pedestrian Environment (30th Street to 14th Street) (**Tier 2**)
8. 27th Street (Welton to California) - One to Two Way Conversion (**Tier 2**)

Project List and Concept Designs

PROJECTS UNDERWAY OR NEEDING ADDITIONAL STUDY

A conceptual design was not provided for the projects on the following list because these projects are being studied further through another project's funding source or are dependent on the outcome of a concurrent project. More information about the status and a potential scope for these projects is included in the project key summaries section below.

PROJECTS UNDERWAY

- 21st Festival Street/ Bike Boulevard (Blake Street to 20th Avenue) (**Tier 1**)
- Walnut Street (18th Street to Downing) - One to Two Way Conversion (pedestrian improvements only) (**Tier 3**)
 - Phase I – Identifying pedestrian space and improvements with one way section
 - Phase II – Identifying conversion needs

PROJECTS NEEDING ADDITIONAL STUDY

- Welton Street (Park Ave to Downing) - One to Two Way Conversion (**Tier 1**)
- Blake Street (18th Street to Broadway) - One to Two Way Conversion (**Tier 2**)
- Downtown Strategic Transportation Plan Travelshed Analysis (**Tier 3**)
- Curtis Street (18th Street to Broadway) - One to Two Way Conversion (**Tier 3**)
- California Street (Park Ave to Broadway) - One to Two Way Conversion (**Tier 3**)
- Champa Street (reclassify to collector) (Downing to Broadway) - One to Two Way Conversion (**Tier 3**)
- Stout Street (reclassify to collector) (Broadway to Downing) - One to Two Way Conversion (**Tier 3**)
- 33rd Street Multimodal Bridge (**Tier 3**)

The following is a list of all NEDN projects, organized by prioritized Tier, based on TAC members' evaluation of each project as explained in TAC Meeting #2. The project descriptions below include a basic concept, key considerations, approximated cost, complexity and timeframe. Each summary describes any considerations for moving the project to implementation.

TIER 1

1. Welton Street (Park Ave to Downing): One to Two Way Conversion

Welton Street from Park Avenue to Downing is primarily a commercial corridor. It is currently a one way street with two travel lanes and light rail infrastructure.

There is on street parking on one or both sides of the corridor for certain segments. Welton Street has a curb to curb width of 28 feet from Park Avenue to 26th Street and 29th to Downing, and a width of 36 feet between 26th and 29th Street. This corridor receives about 1,800 vehicles per day (vpd). There currently are no bicycle facilities. There is a five foot sidewalk with a pedestrian buffer including street trees, benches and other amenities.



Prior to converting Welton Street, an understanding of the Central Rail Extension technology, alignment and preferred alternative is necessary. As the study of the extension continues additional information regarding the conversion should be studied. Analysis of the corridor that addresses multi modal operations along the corridor should be completed with particular attention paid to the intersections of Welton at 20th and Broadway as well as Welton at Downing.

TAC Comments

- *Two way Welton would provide enhanced access to businesses and build economic development opportunities in the corridor.*
- *Two way conversions were originally proposed by the community as a way to provide traffic calming. However, not all two way streets are slow/calm. It is really dependent on their location and role in the network. Need to be aware of specific design features to slow traffic.*

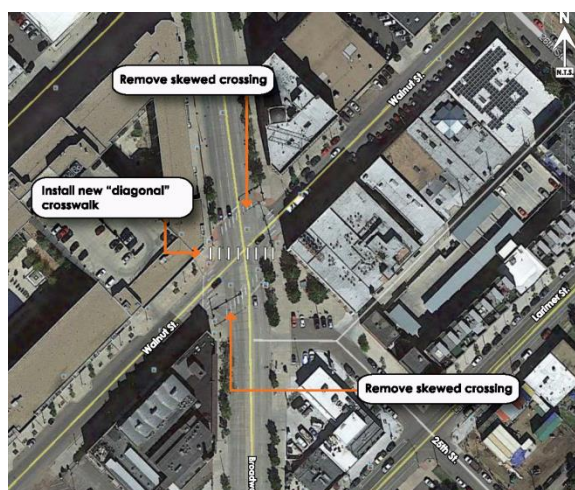
Summary

- Concept
 - Convert the corridor between from one-way to two-way for traffic between Broadway and Downing Street
- Considerations
 - Conversion could be necessary to support any future two way street car operations (CRE Study)
 - Is contingent on (CRE Study) and the potential removal of current light rail infrastructure
- Cost - Further study is needed
- Implementation Complexity - High
- Implementation Timeframe - Long
- Implementation Feasibility - Moderate

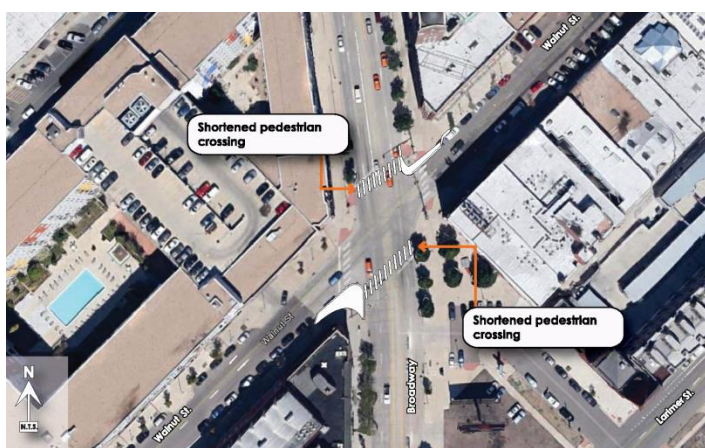
2. Larimer Street: Ped/Bike Crossing at Broadway

Evaluate the opportunity to enhance pedestrian connectivity and promote pedestrian priority at the intersections of Broadway and Larimer Street. Located in the center of the study area, these intersections play an important role in completing direct access across Broadway. Modifications should be studied to minimize required out-of-direction travel by pedestrians, and emphasize pedestrian priority through median island refuge areas in Broadway, closure of alleys and curb cut access to parking areas.

Near term, low cost, high impact treatment concepts were based on discussion with the TAC. The two example concepts provided to the TAC, as shown below, were short term and non-invasive in general. The low impact improvement did not meet the expectation of an enhanced crossing. The TAC determined during this exercise that in order to improve east and west connectivity, more capital intensive improvements for drainage and overall mobility was desired.



Option 1



Option 2

TAC Comments

- Looking for bigger and better improvements than are shown here.
- Pull in urban design component
- It is just assumed in RiNo that you don't cross Broadway because it is so unfriendly to pedestrians.
- Growing pedestrian use because of the increasing retail onto the other side of Larimer.
- The 24th St. and Larimer St, and Broadway intersection is difficult.

Summary

- Concept
 - This project would study and design bicycle and pedestrian enhancements at the Larimer Broadway intersection.
- Considerations
 - Broadway corridor operations
 - Removal of 24th Street between Larimer and Broadway could simplify the intersection and provide additional pedestrian and bicycle benefits
 - Removal of skewed intersections will shorten pedestrian crossing distances

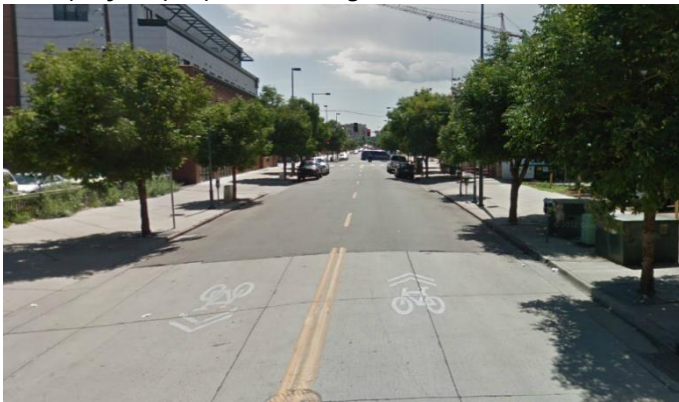
- Removal of free right from Larimer to Broadway will slow speeds and tighten intersection
- Intersection must accommodate truck turning traffic
- Cost - \$53,600 - \$157,700 (Operational Funding Opportunity)
- Implementation Complexity - Moderate
- Timeframe – Short
- Implementation Feasibility - High

3. 21st Street: Festival Street/Bike Boulevard (Blake Street to 20th Avenue)

Two major concepts for improvements on 21st Street, the Bike Boulevard and the Festival Street, if implemented, would respond to these initial ideas of the street being a place with an enhanced public realm and prioritizing pedestrians and bicyclists. The bike boulevard would be for the entirety of the street, the festival component (initially) would be only for the blocks proximate to Coors Field.

21st Street is a two way street with one travel lane in each direction. This is a commercial corridor with mixed uses including multi-unit housing located in the Ballpark neighborhood, adjacent to the Coors Field Stadium. Between Blake Street and 20th Avenue, 21st Street has a curb to curb width of 36 feet. There are sharrows along the length of the corridor. Sidewalk widths vary from 17 feet from Blake to Lawrence, 12 feet from Lawrence to Stout and 5 feet from Stout to 20th Avenue. This includes a buffer zone with street trees and amenities. There is on street parking on both sides of the street.

This project proposes having a bike boulevard the whole extent from Blake Street to 20th Avenue. The festival street is intended to be on the few blocks adjacent to the stadium that will allow for temporary closure of the street during events.



The study and implementation of 21st Street as a Festival Street and a bike boulevard is moving forward through the City and County of Denver with other funding sources. A study already moving forward and is expected to be completed in 2015. No conceptual design is presented in this report.

Summary

- Concept
 - Make 21st Street a focal point for Northeast Downtown neighborhoods by promoting its role as an important pedestrian and bicycle route and community gathering place.*
- Considerations
 - Design needs to accommodate wide sidewalks, on street parking, one lane of travel in each direction, bike lanes and street scape improvements.
 - Design should accommodate closure for special events.
- Implementation Complexity - Moderate
- Timeframe - Bike boulevard – short, festival street – medium
- Implementation Feasibility - High

4. 31st Street: Bicycle / Pedestrian Bridge (across Union Pacific Railroad Tracks)

31st Street would connect both sides of the River North neighborhood and provide invaluable access to the green space and trail system of the South Platte River corridor for all of Northeast Downtown. A pedestrian and bicycle only bridge at 31st Street would provide the shortest route to the river. In combination with becoming a bicycle route and pedestrian priority path, this street would provide an excellent connection between Northeast Downtown neighborhood amenities, such as the 30th and Downing light rail station and Metizo-Curtis Park to the South Platte River corridor.*

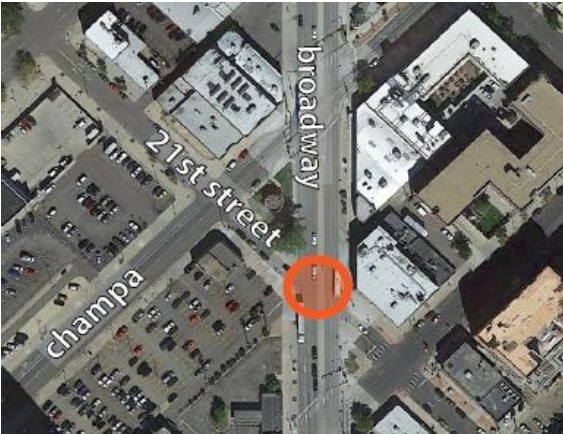


See **Appendix E** for conceptual design. Note that this concept will need additional study prior to implementation.

Summary

- Concept
 - This project would construct a bike/ped bridge or underpass across the Union Pacific Railroad right of way at 31st Street. Denver Moves proposes a short segment of trail on 31st from Larimer to the proposed bridge.
- Considerations
 - Right of Way will need to be obtained upon development.
 - Another consulting team previously analyzed both under and overpass options for a full roadway option and discovered that an overpass is not feasible due to the clearance necessary at the tracks. An underpass is a feasible option for a full roadway.
 - An overpass option for ped/bike only should be analyzed.
- Cost - \$4,000,000 - \$6,000,000 (Grant Funding Opportunity)
- Implementation Complexity - High
- Timeframe - Long-range until Coors Field no longer requires surface parking at this location
- Implementation Feasibility - Low

5. 21st Street: Ped/Bike Crossing at Broadway



Evaluate the opportunity to enhance pedestrian connectivity and promote pedestrian priority at the intersection of Broadway and 21st Street. An improved crossing could facilitate the transformation of 21st to a bike boulevard, as recommended in Denver Moves.

This project was chosen to be developed to a higher engineered level in this Study, due to high priority, relatively low cost and short timeframe. See **Appendix F** for preliminary design.

TAC Comments

- Support the added the yellow triangles with clear bike/ped crossings through 21 St.
- Traffic on 22nd will cause increased problems on Park Ave.
- There is concern the Fire Department will say no.
- The triangles could be used for water quality too.

Summary

- Concept
 - This project would study and design bicycle and pedestrian enhancements on 21st Street for crossing at Broadway.
- Considerations
 - This is a critical crossing due to existing bike lanes on 21st.
 - This crossing should include a pedestrian/ bicycle signal at Broadway to facilitate crossing.
 - This crossing is needed to facilitate a successful Bicycle Boulevard and Festival Street.
- Cost - \$371,000 - \$510,300 (Operational/ CIP Funding Opportunities)
- Implementation Complexity - Low
- Timeframe - Short
- Implementation Feasibility - High



6. Broadway Study: Ped/Bike Crossing (Welton to Larimer)

This project would further study and design bicycle and pedestrian crossing enhancements along Broadway at each intersection between Welton Street and Larimer Street for more convenient and safe crossings across Broadway.

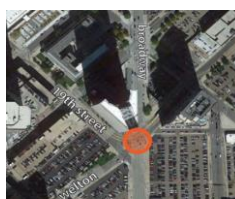
See **Appendix E** for an example of conceptual designs.

TAC Comments

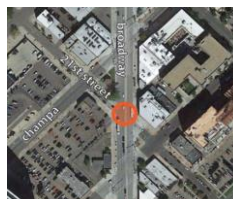
- *Broadway and Park are very difficult to cross on foot or bicycle from 26th to 20th all the way through Ballpark to Glenarm.*
- *It is just assumed in RiNo that you don't cross Broadway because it is so unfriendly to pedestrians.*

Summary

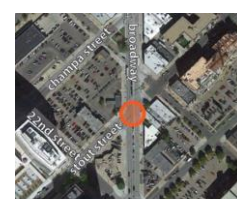
- Concept
 - Study all crossings on Broadway between Welton and Larimer Streets for enhanced pedestrian and bicycle mobility.
- Considerations
 - Future Broadway concept(s) should be considered
 - Consider intersections with high crossing demand to be the focus of the study.
 - Access for businesses and residences
 - Accommodation of large vehicle traffic
 - Traffic signal timing to accommodate additional phases
 - Existing transit stops
- Cost – \$100,000 - \$150,000 (Operational Funding Opportunity)
- Implementation Complexity – Low
- Timeframe – Short
- Implementation Feasibility - High



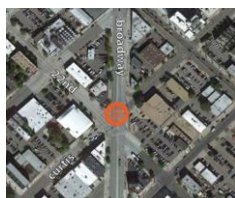
Welton Street



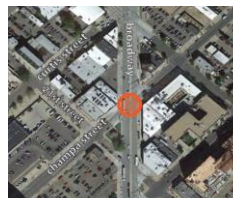
21st Street



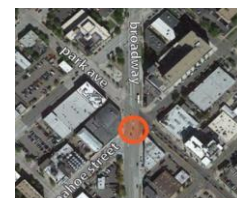
Stout Street



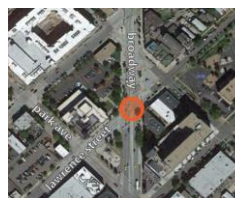
Curtis Street



Champa Street



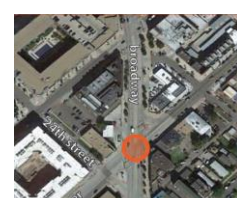
Arapahoe Street



Lawrence Street



24th Street



Larimer Street

7. Blake Street: One to Two Way Conversion (38th Street to Broadway)

Conversion would improve the pedestrian experience, safety and livability by lowering vehicular speeds and allowing for bike/pedestrian crossing opportunities. Conversion would include redesigning Blake Street to include one drive aisle, a bike lane and parking lane in each direction, as well as sidewalk improvements which will vary block by block based on existing access locations.



The existing cross section along this section of roadway includes:

- Existing ROW= +/- 80'
- Travel lanes= 2 southbound
- Parking= one side to two sides
- Sidewalk= intermittent

The potential cross section, as proposed by the 38th and Blake Project Team (AECOM), includes:

- ROW= 80'
- Travel lanes= 1 lane in each direction
- Bike lane= 1 (5') lane in each direction
- Parking= both sides
- Sidewalk/ amenity zone= +/- 15'

See **Appendix E** for conceptual design.

TAC Comments

- *From a neighborhood perspective, Walnut should be preferred as RTD's main corridor.*
- *Seems like Blake is being portrayed as the main transit corridor by RTD currently. Walnut is more appropriate as the main transit corridor. Would be supportive of the two-way on both.*
- *Two way conversions were originally proposed by the community as a way to provide traffic calming. However, not all two way streets are slow/calm. It is really dependent on their location and role in the network. Need to be aware of specific design features to slow traffic.*

Summary

- Concept
 - With a consistent 48 foot curb to curb width, the Blake Street travel way could support one travel lane in each direction and a parking lane, turn-lane, and/or bike lane in each direction, as appropriate.
- Considerations
 - Conversion limits the feasibility of implementing an enhanced bike facility
 - Operations at the Broadway and Blake intersection will need design and the signal will need to be reconstructed.

- Head in parking will be removed with implementation eliminating some on-street parking capacity
- Public outreach and businesses will need to be notified due to circulation changes
- Loading operations along corridor will need to be identified so commercial driveways can be added where appropriate.
- Cost – \$320,400 (CIP Funding Opportunity)
- Implementation Complexity – Low
- Timeframe – Short
- Implementation Feasibility – High

8. Larimer Street: One to Two Way Conversion (Broadway to 18th Street)

Conversion would improve the pedestrian experience, safety and livability by lowering vehicular speeds and allowing for bike/pedestrian crossing opportunities. Conversion would include redesigning Blake Street to include one drive aisle, bike lane and parking lane in each direction.

See **Appendix E** for conceptual design.

TAC Comments

- *Two way conversions were originally proposed by the community as a way to provide traffic calming. However, not all two way streets are slow/calm. It is really dependent on their location and role in the network. Need to be aware of specific design features to slow traffic.*

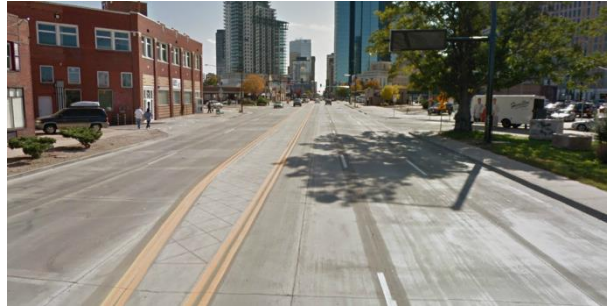
Summary

- Concept
 - With a curb to curb width that is mostly 48 feet, Larimer can support a two way conversion with one travel lane, an 8 foot parking lane and a 6 foot bike lane in both directions.
- Considerations
 - Conversion could limit the feasibility of implementing an enhanced bike facility, but could provide a connection to Larimer east of Broadway, which has already been converted to a two way street with parallel parking and a bike lane on both sides.
 - All signals along the corridor will need to be reconstructed
 - Removal of 24th Street between Larimer and Broadway could simplify the intersection
- Cost – \$2,773,700 (Grant Funding Opportunity)
- Implementation Complexity – Moderate
- Timeframe – Medium-long
- Implementation Feasibility - Moderate



9. Broadway Study: Evaluate Alternatives (Arapahoe to Welton)

The NEDN Plan recommended several other projects and studies be conducted to evaluate patterns and transportation concepts. The three alternatives that were included are explained below and include: “Preserving Broadway”, “Celebrating Broadway”, and “Bridging Broadway”.



TAC Comments

- *It is unclear how individual intersections and full corridor studies work together.*
- *Project team members clarified that all projects in the sheets were lifted directly from the original plan. Running the prioritization will help the project team understand which projects or studies are desired to move forward with.*

Summary

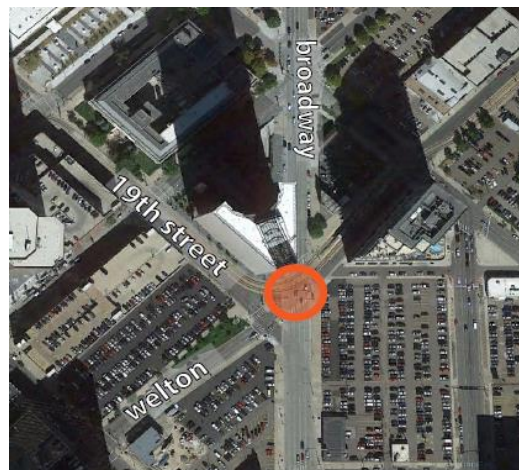
- Concept
 - Evaluate Broadway for three alternatives that were developed in the NEDN Plan.
 - “Preserving Broadway” – Maintain the current street cross section and maintain Broadway as a major arterial while striving to improve the public realm and overall multi-modal functionality of the street.
 - “Celebrating Broadway” – Remove a lane of traffic in order to enhance the pedestrian realm with planted medians, wider sidewalks, street trees and street furnishings.
 - “Bridging Broadway” – Remove Broadway between Park Avenue and Welton Street and make it developable for a Bike/Pedestrian thoroughfare.
- Considerations
 - Use of the NEPA format should be used to establish a “No Build” scenario and baseline for the performance of Broadway.
 - Studies should include the effect of alternatives on vehicular traffic behavior, surrounding neighborhoods, access reconfigurations, bicycle and pedestrian facility networks, right of way availability and requirements, advantages and disadvantages for each alternative, etc.
 - This section of Broadway was recently improved and reconstructed, timing of major changes to the corridor beyond striping and signing needs to be further explored.
 - Brighton Boulevard will be reconstructed in 2016, the tie-into the corridor must be evaluated.
- Cost – \$150,000 - \$200,000 (Operational Funding Opportunity)
- Implementation Complexity – Low
- Timeframe – Medium
- Feasibility - Moderate

10. Welton Street: Ped/Bike Crossing at Broadway

The NEDN Plan recommended evaluating short term-improvements for pedestrians and bicyclists to more safely and conveniently cross at Broadway. This study includes minimization of out-of-direction travel by pedestrians and prioritizing pedestrians.

Summary

- Concept
 - This project would study and design bicycle and pedestrian enhancements on Welton Street for crossing Broadway.
- Considerations
 - An improved crossing at Broadway could provide a connection to the existing bike lane on the southern section of Welton that ends at Broadway.
 - Understanding of the Central Rail Extension is needed prior to making changes
 - Conversion of Welton could change the circulation and enhance the crossings
 - Further study of this intersection should be included in the overall study of pedestrian and bicycle crossings for the Broadway corridor.
- Cost – \$35,700 - \$105,200 (Operational Funding Opportunity)
- Implementation Complexity – High
- Timeframe – Medium – Long
- Implementation Feasibility - Moderate



TIER 2

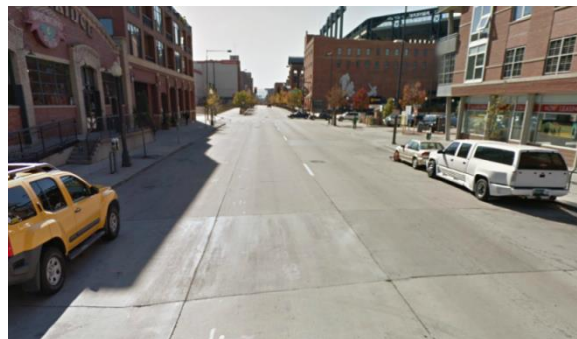
11. Blake Street: One to Two Way Conversion (18th Street to Broadway)

Blake Street from 18th Street to Broadway is a one way street with two travel lanes. This is a mixed use industrial corridor, with some emerging residential. The blocks from 22nd to 18th are a designated bike route with no markings. This corridor also services two bus routes. The sidewalk is 20 to 35 feet from 19th to 21st Street, to accommodate pedestrian volumes from Coors Stadium. Sidewalks are five to 10 feet wide north and south of this segment. There is a pedestrian buffer and a number of amenities including pedestrian-scale lighting, bike racks and benches along these extents of Blake Street. There are no loading docks and on street parking (parallel and angled) on almost all blocks.

This section of Blake Street has a curb to curb width between 38 and 40 feet. This section of Blake Street has an estimated volume of 3,000 vehicles per day.

Key considerations for the conversion include:

- Effects of the conversion on intersections, including necessary re-signing, re-striping and signalization or reconstruction of existing signals
- Access reconfiguration for both commercial and residential land uses and side streets
- Demand for existing loading docks
- Lane configuration for two way street, existing curb to curb width, and right of way width through the length of the corridor
- On-street parking assessment given roadway availability with two way lane configuration curb to curb width
- Effects of the conversion on transit access and re-routing
- Effects of the conversion on traffic calming through research of case studies and national best practices
- Transition back to a one-way street on the downtown side
- Potential modification of roadway speeds by exploring land uses, signal spacing, lane width, etc.
- Ability to provide separate space for bicycle traffic
- Tradeoffs of advantages and disadvantages of the conversion such as width of a separated bicycle facility, traffic calming and access



TAC Comments

- *Two way conversions were originally proposed by the community as a way to provide traffic calming. However, not all two way streets are slow/calm. It is really dependent on their location and role in the network. Need to be aware of specific design features to slow traffic.*

Summary

- Concept
 - This section of the Blake Street would support two way travel between 22nd and 18th and some combination of a parking lane, turn-lane, and/or bike lane in each direction, as appropriate.
- Considerations
 - Effects of the conversion on intersections, including necessary re-signing, re-striping and signalization or reconstruction of existing signals
 - Access reconfiguration for both commercial and residential land uses and side streets
 - Demand for existing loading docks
 - Lane configuration for two way street, existing curb to curb width, and right of way width through the length of the corridor
 - On-street parking assessment given roadway availability with two way lane configuration curb to curb width
 - Effects of the conversion on transit access and re-routing
 - Effects of the conversion on traffic calming through research of case studies and national best practices
 - Transition back to a one-way street on the downtown side
 - Potential modification of roadway speeds by exploring land uses, signal spacing, lane width, etc.
 - Ability to provide separate space for bicycle traffic
 - Tradeoffs of advantages and disadvantages of the conversion such as width of a separated bicycle facility, traffic calming and access
- Cost - \$2,600,000 (Grant Funding Opportunity)
- Implementation Complexity – Moderate
- Timeframe – Medium-long
- Feasibility - Moderate

12. Curtis Park Traffic Calming Opportunities



Curtis Park is one of Denver’s oldest residential neighborhoods, boasting some of the City’s most historic homes as well as the City’s first official park, Mestizo-Curtis Park. The majority of the neighborhood lies within designated historic districts, and offers urban design elements such as period lighting and sandstone sidewalks. Curtis Park is a true urban neighborhood both architecturally and demographically, with homes ranging from large Victorians to modern row houses, and long-time residents to new urban dwellers looking for a true neighborhood feel within walking distance of the downtown core.

Traffic calming was recommended by the NEDN Plan to enhance the multimodal connectivity by specifically considering accommodation for bicycles and pedestrians.

Note that this concept will need additional study prior to implementation.

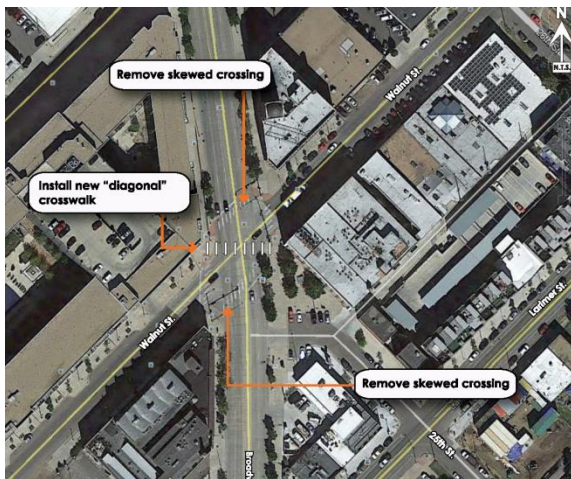
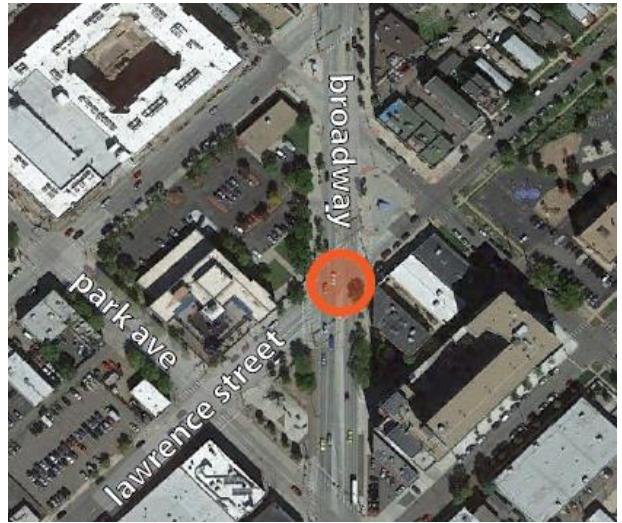
Summary

- Concept
 - This project would identify traffic calming opportunities for the neighborhood, including curb extensions, chicanes, center island narrowing or textured pavement.
- Considerations
 - Lane configurations and available roadway widths, existing vehicular roadway volumes and speeds, on-street parking assessment, appropriate traffic calming devices, maintenance, fire department circulation, impacts to bus routes, effect on traffic flow and travel behavior.
- Cost - \$75,000 - \$150,000 (Operational Funding Opportunity)
- Implementation Complexity – Low
- Timeframe – Short
- Implementation Feasibility - High

13. Lawrence Street: Ped/ Bike Crossing at Broadway

The NEDN Plan recommended evaluating short term-improvements for pedestrians and bicyclists to more safely and conveniently cross at Broadway. Study includes minimization of out-of-direction travel by pedestrians and prioritizing pedestrians.

Near term, low cost, high impact treatment concepts were based on discussion with the TAC. The two concepts provided to the TAC, as shown below, were short term and non-invasive in general. The low impact improvement did not meet the expectation of an enhanced crossing. The TAC determined during this exercise that in order to improve east and west connectivity, more capital intensive improvements for drainage and overall mobility would be desired.



Option 1



Option 2

TAC Comments

- Looking for bigger and better improvements than are shown here.
- Pull in urban design component
- It is just assumed in RiNo that you don't cross Broadway because it is so unfriendly to pedestrians.

Summary

- Concept
 - This project would study and design bicycle and pedestrian enhancements on Lawrence Street for crossing Broadway.
- Considerations
 - Explore the opportunity to extend the existing bike lane on the southern portion of Lawrence through 26th Street and then install sharrows on Lawrence, north of Broadway.

- Cost - \$53,000 - \$157,700 (Operational Funding Opportunity)
- Implementation Complexity – Low
- Timeframe – Short
- Feasibility – High

14. River North and Ball Park Complete Sidewalk Network

This project was recommended in the NEDN Plan to enhance the multimodal connectivity by specifically considering accommodation for bicycles and pedestrians. Nearly all of the existing gaps in the Northeast Downtown sidewalk network are in River North. This project would identify, design and construct the additional sidewalks required to connect fragmented new sidewalks.

Refer to **Appendix E** for the inventory and conceptual design. Note that this concept will need additional study prior to implementation.



TAC Comments

- *Encourage developer to take care of sidewalk; in 2010 many developments were accounted for.*
- *River North sidewalks are not the only thing needed; without lights and other amenities, no one will feel safe walking.*

Summary

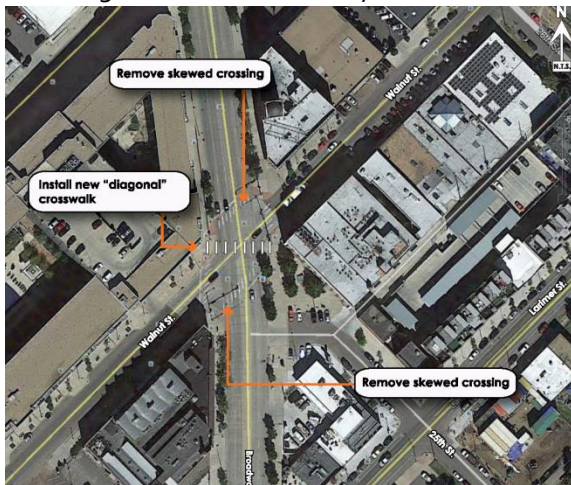
- Concept
 - Complete existing sidewalk conditions inventory to identify those to be designed and constructed for continuous sidewalks throughout RiNo.
- Considerations
 - Blake and Walnut have the highest frequency of gaps, while some of the numbered streets intersecting Blake and Walnut also lack sidewalks.
 - New development will fund some sidewalks and some are partially implemented by the current sidewalk construction project at 38th and Blake.
 - Cost does not include Right-of-Way
- Cost - \$1,766,800 (Grant Funding Opportunity)
- Implementation Complexity – High
- Timeframe – Short-Long
- Feasibility – Moderate

As part of a safety enhancement project, the city is currently identifying pedestrian space along Walnut Street as an interim improvement prior to converting to a two-way street

15. Arapahoe Street: Ped/Bike Crossing at Broadway

The NEDN Plan recommended evaluating short term-improvements for pedestrians and bicyclists to more safely and conveniently cross at Broadway. Study includes minimization of out-of-direction travel by pedestrians and pedestrian priority.

Near term, low cost, high impact treatment concepts were based on discussion with the TAC. The two concept examples provided to the TAC, as shown below, were short term and non-invasive in general. The low impact improvement did not meet the expectation of an enhanced crossing. The TAC determined during this exercise that in order to improve east and west connectivity, more capital intensive improvements for drainage and overall mobility was desired.



Option 1



Option 2

TAC Comments

- Looking for bigger and better improvements than are shown here.
- Pull in urban design component
- It is just assumed in RiNo that you don't cross Broadway because it is so unfriendly to pedestrians

Summary

- Concept
 - This project would study and design bicycle and pedestrian enhancements on Arapahoe Street for crossing Broadway.
- Considerations
 - An improved crossing at Broadway could provide a connection to the existing bike lane on the southern section of Arapahoe that begins at Broadway.
 - Signal timing and operations along Broadway
 - Consider a pedestrian phase to facilitate shorter crossing distances and a direct connection from Arapahoe directly across the Park Avenue and Broadway intersection

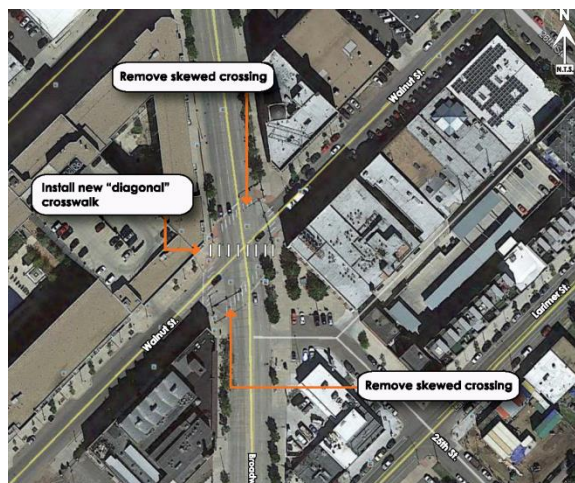
- Cost - \$53,000 - \$157,700 (Operational Funding Opportunity)
- Implementation Complexity – Low
- Timeframe – Short
- Implementation Feasibility - High

16. Champa Street: Ped/Bike Crossing at Broadway



The NEDN Plan recommended evaluating short term-improvements for pedestrians and bicyclists to more safely and conveniently cross at Broadway. Study includes minimization of out-of-direction travel by pedestrians and pedestrian priority.

Near term, low cost, high impact treatment concepts were based on discussion with the TAC. The two concepts provided to the TAC, as shown below, were short term and non-invasive in general. The low impact improvement did not meet the expectation of an enhanced crossing. The TAC determined during this exercise that in order to improve east and west connectivity, more capital intensive improvements for drainage and overall mobility was desired.



Option 1



Option 2

TAC Comments

- Looking for bigger and better improvements than are shown here.
- Pull in urban design component
- It is just assumed in RiNo that you don't cross Broadway because it is so unfriendly to pedestrians

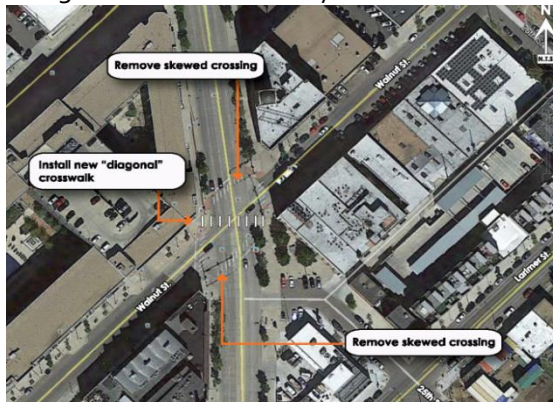
Summary

- Concept
 - This project would study and design bicycle and pedestrian enhancements on Champa Street for crossing Broadway.
- Considerations
 - An improved crossing at Broadway could connect the existing bike lanes on Champa on both sides of Broadway.
- Cost - \$53,000 - \$157,700 (Operational Funding Opportunity)
- Implementation Complexity – Low
- Timeframe – Short
- Implementation Feasibility - High

17. Curtis Street: Ped/Bike Crossing at Broadway

The NEDN Plan recommended evaluating short term-improvements for pedestrians and bicyclists to more safely and conveniently cross at Broadway. Study includes minimization of out-of-direction travel by pedestrians and pedestrian priority.

Near term, low cost, high impact treatment example concepts were based on discussion with the TAC. The two concepts provided to the TAC, as shown below, were short term and non-invasive in general. The low impact improvement did not meet the expectation of an enhanced crossing. The TAC determined during this exercise that in order to improve east and west connectivity, more capital intensive improvements for drainage and overall mobility was desired.



Option 1



Option 2

TAC Comments

- Looking for bigger and better improvements than are shown here.
- Pull in urban design component
- It is just assumed in RiNo that you don't cross Broadway because it is so unfriendly to pedestrians

Summary

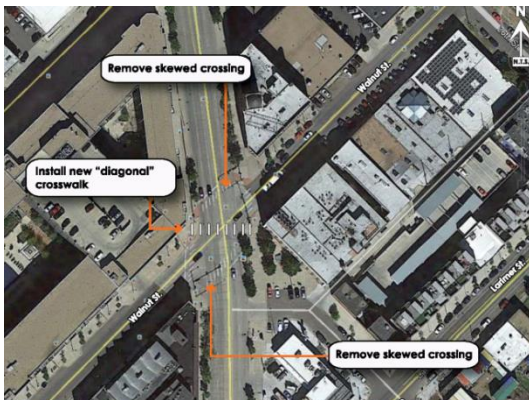
- Concept
 - This project would study and design bicycle and pedestrian enhancements on Curtis Street for crossing Broadway.
- Considerations
 - An improved crossing at Broadway could connect the existing bike lanes on Curtis on both sides of Broadway.
- Cost - \$53,000 - \$157,700 (Operational Funding Opportunity)
- Implementation Complexity – Low
- Timeframe – Short
- Implementation Feasibility - High

18. Stout Street: Ped/Bike Crossing at Broadway



The NEDN Plan recommended evaluating short term-improvements for pedestrians and bicyclists to more safely and conveniently cross at Broadway. Study includes minimization of out-of-direction travel by pedestrians and pedestrian priority.

Near term, low cost, high impact treatment example concepts were based on discussion with the TAC. The two concepts provided to the TAC, as shown below, were short term and non-invasive in general. The low impact improvement did not meet the expectation of an enhanced crossing. The TAC determined during this exercise that in order to improve east and west connectivity, more capital intensive improvements for drainage and overall mobility was desired.



Option 1



Option 2

TAC Comments

- Looking for bigger and better improvements than are shown here.
- Pull in urban design component
- It is just assumed in RiNo that you don't cross Broadway because it is so unfriendly to pedestrians

Summary

- Concept
 - An improved crossing at Broadway could connect the existing bike lanes on Stout Street on both sides of Broadway.
- Considerations
 - An improved crossing at Broadway could connect the existing bike lanes on Stout on both sides of Broadway.
- Cost - \$53,000 - \$157,700 (Operational Funding Opportunity)
- Implementation Complexity – Low
- Timeframe – Short
- Implementation Feasibility - High

19. 28th Street: One to Two Way Conversion (Welton to Glenarm)

Conversion would improve the pedestrian experience, safety and livability by lowering vehicular speeds and allowing for bike/pedestrian crossing opportunities. Conversion would include redesigning 28th Street to include one drive aisle, bike lane and parking lane in each direction, as well as sidewalk improvements which will vary block by block based on existing access locations.



Refer to **Appendix E** for conceptual design.

TAC Comments

- *Two way conversions were originally proposed by the community as a way to provide traffic calming. However, not all two way streets are slow/calm. It is really dependent on their location and role in the network. Need to be aware of specific design features to slow traffic.*

Summary

- Concept
 - The 28th Street travel way could support one travel lane in each direction and some combination of a parking lane, turn-lane, and/or bike lane in each direction, as appropriate.
- Considerations
 - The conversion limits the feasibility of implementing either on street parking or a bike lane.
- Cost - \$6,400 (Operational Funding Opportunity)
- Implementation Complexity – Low
- Timeframe – Short
- Implementation Feasibility - High

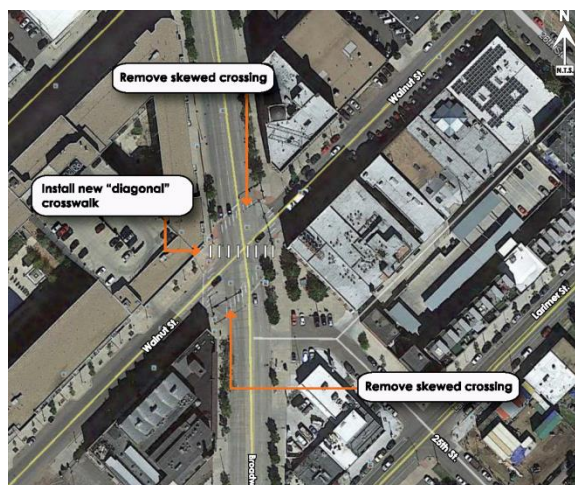


20. 24th Street: Ped/Bike Crossing at Broadway



The NEDN Plan recommended evaluating short term-improvements for pedestrians and bicyclists to more safely and conveniently cross at Broadway. Study includes minimization of out-of-direction travel by pedestrians and pedestrian priority.

Near term, low cost, high impact treatment concepts were based on discussion with the TAC. The two concepts provided to the TAC, as shown below, were short term and non-invasive in general. The low impact improvement did not meet the expectation of an enhanced crossing. The TAC determined during this exercise that in order to improve east and west connectivity, more capital intensive improvements for drainage and overall mobility was desired.



Option 1



Option 2

TAC Comments

- Consider closing 24th to vehicular traffic opening the street up to a pedestrian bicycle access only.
- Looking for bigger and better improvements than are shown here.
- Pull in urban design component
- It is just assumed in RiNo that you don't cross Broadway because it is so unfriendly to pedestrians

Summary

- Concept
 - This project would study and design bicycle and pedestrian enhancements on 24th Street for crossing Broadway.
- Considerations
 - An improved crossing on 24th Street would provide a safer connection for pedestrians and bicycles a Broadway.
 - Close 24th Street to traffic between Larimer and Broadway to simplify the intersection of Larimer at Broadway
- Cost - \$53,000 - \$157,700 (Operational Funding Opportunity)
- Implementation Complexity – Low
- Timeframe – Short
- Implementation Feasibility - High

21. 27th Street: One to Two Way Conversion (Welton to California)

27th Street from Welton to California is primarily a block of commercial land uses. It is currently a one way street with two travel lanes. There is on street parking on the north side of the street. 27th Street has a 34 foot curb to curb width, which has the potential to support one travel lane in each direction and a combination of a parking lane, turn lane and/or bike lane, as appropriate. There are three loading docks on the south side of this segment. There currently are no bicycle facilities. There is a five foot sidewalk with a pedestrian buffer including street trees, benches and other amenities.



To convert 27th Street, the intersection of Welton and 27th Street will need to be examined and solutions determined to remove the skew.

This project is currently progressing through other means or is already being studied further and no conceptual design is presented in this report.

TAC Comments

- *Two way conversions were originally proposed by the community as a way to provide traffic calming. However, not all two way streets are slow/calm. It is really dependent on their location and role in the network. Need to be aware of specific design features to slow traffic.*

Summary

- Concept
 - The 27th Street travelway could support one travel lane in each direction and some combination of a parking lane, turn-lane, and/or bike lane in each direction, as appropriate.
- Considerations
 - Conversion could facilitate the transformation of 27th Street as a future bike boulevard.
- Cost - \$10,000
- Implementation Complexity – Low
- Timeframe – Short
- Implementation Feasibility - High

22. Study Connecting Parks to Destination Areas

The NEDN Plan recommended that several other projects and studies be conducted to evaluate travel patterns and transportation concepts.

Refer to **Appendix E** for conceptual design. Note that this concept will need additional study prior to implementation.

Summary

- Concept
 - Study opportunities for improved connections to downtown and existing parks such as Skyline Park, Riverfront Park, Sonny Lawson Park, Benedict Fountain Park, Mestizo-Curtis Park, City of Cuernavaca Park, and the South Platte River Greenway.
- Considerations -
 - Bike and pedestrian corridors linking parks and destinations (consistent with other City plans)
 - Origin/Destination studies
 - Parks and recreation master plans
 - Wayfinding and signage
- Cost - \$50,000 - \$125,000 (Operational Funding Opportunity)
- Implementation Complexity – Low
- Timeframe – Short
- Implementation Feasibility - High



TIER 3

24. 22nd Street: One to Two Way Conversion (Champa to Stout)

Conversion would improve the pedestrian experience, safety and livability by lowering vehicular speeds and allowing for bike/pedestrian crossing opportunities. Conversion would include redesigning 28th Street to include one drive aisle, bike lane and parking lane in each direction, as well as sidewalk improvements which will vary block by block based on existing access locations.

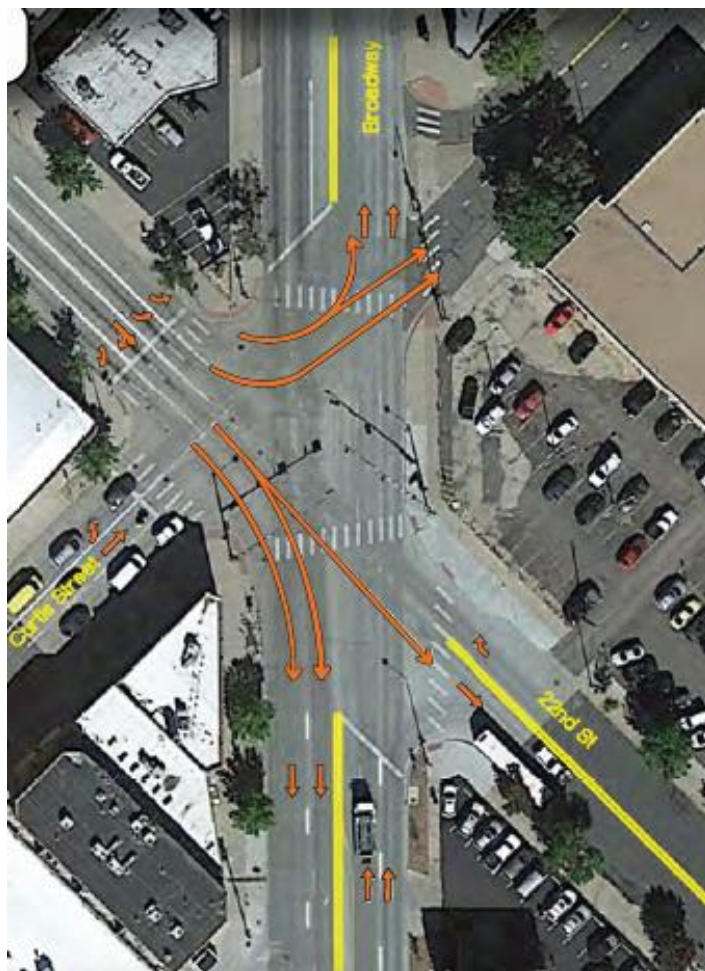
Refer to **Appendix E** and the image below for conceptual design.

TAC Comments

- *Two way conversions were originally proposed by the community as a way to provide traffic calming. However, not all two way streets are slow/calm. It is really dependent on their location and role in the network. Need to be aware of specific design features to slow traffic.*

Summary

- Concept
 - The 22nd Street travel way could support one travel lane in each direction and some combination of a parking lane, turn-lane, and/or bike lane in each direction, as appropriate.
- Considerations
 - Explore extending this two-way conversion to Curtis Street to provide an opportunity to connect Champa to the Curtis and Broadway intersection.
- Cost - \$189,900 (CIP/Grant Funding Opportunity)
- Implementation Complexity - Moderate
- Timeframe – Medium-long
- Implementation Feasibility - Moderate



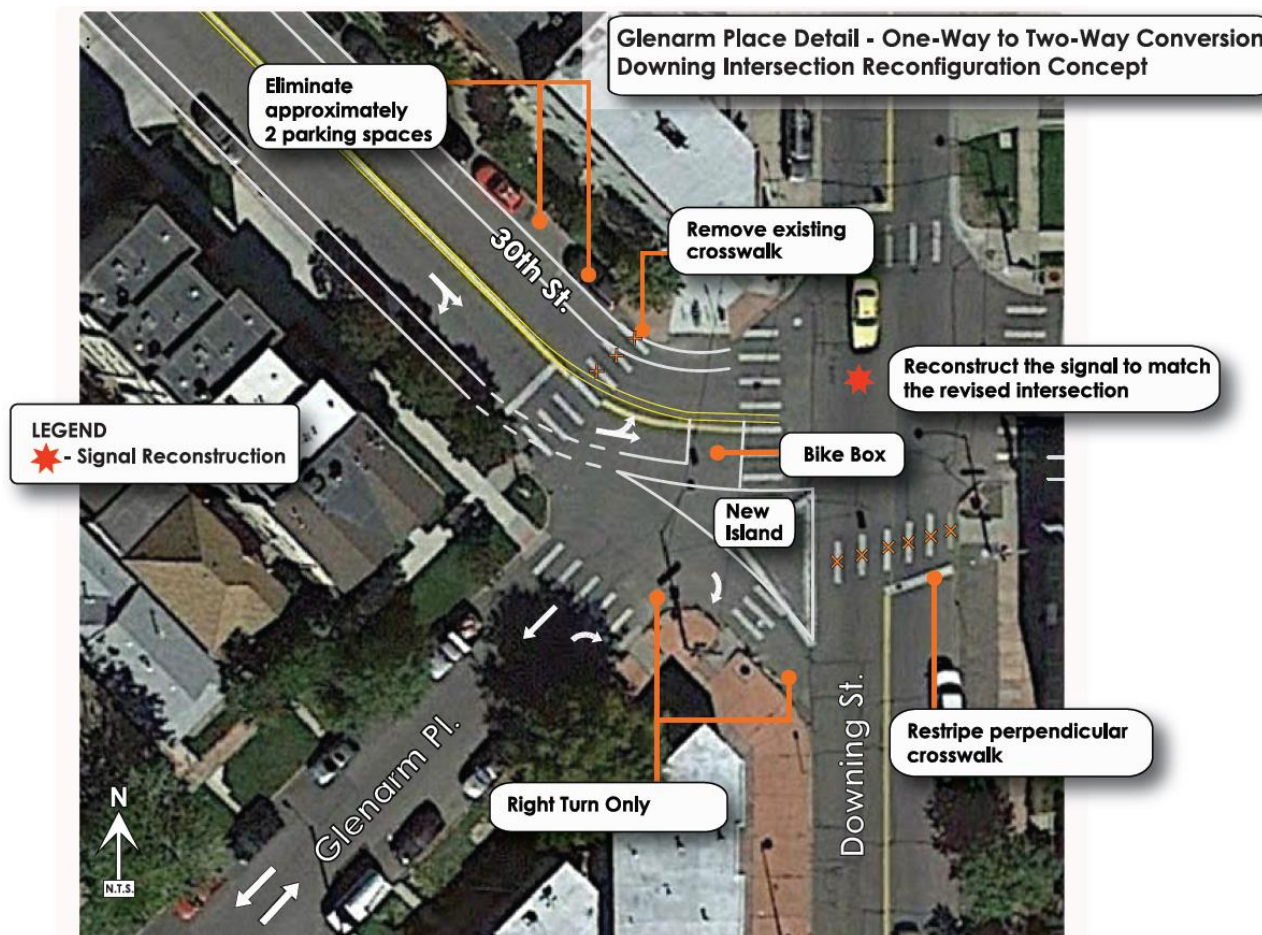
25. Glenarm Place: One to Two Way Conversion (29th Street to Downing)

Conversion would improve the pedestrian experience, safety and livability by lowering vehicular speeds and allowing for bike/pedestrian crossing opportunities. Conversion would include redesigning 28th Street to include one drive aisle, bike lane and parking lane in each direction, as well as sidewalk improvements which will vary block by block based on existing access locations.

Refer to **Appendix E** and the image below for conceptual design.

TAC Comments

- *Two way conversions were originally proposed by the community as a way to provide traffic calming. However, not all two way streets are slow/calm. It is really dependent on their location and role in the network. Need to be aware of specific design features to slow traffic.*



Summary

- Concept
 - The 22nd Street travel way could support one travel lane in each direction and some combination of a parking lane, turn-lane, and/or bike lane in each direction, as appropriate.
- Considerations
 - The conversion limits the feasibility of implementing either on-street parking or a bike lane.
 - Given the proximity to the Glenarm Recreation Center, parallel parking may be in demand on this block.
- Cost - \$400,000 (CIP/Grant Funding Opportunity)
- Implementation Complexity – Low
- Timeframe – Medium
- Implementation Feasibility – Moderate

26. Walnut Street: One to Two Way Conversion (18th Street to Downing)

Walnut Street is a one way street with two travel lanes. This is primarily an industrial corridor, with some mixed use. This corridor is a designated bike route and services two bus routes. The sidewalk is eight to 10 feet and detached from 18th Street to Broadway, and five to eight feet from Broadway to Downing with gaps in the network and minimal amenities. There are nine loading docks in the northern section of the corridor, and on street parking (parallel and angled) on almost all blocks. The curb to curb width of Walnut Street is 35 feet, with some blocks slightly wider or narrower, ranging from 30 to 38 feet. This section of Walnut Street has an estimated volume of 1,000 vehicles per day.



This project is currently progressing through other means. The city is currently undergoing concepts to improve the pedestrian environment along this corridor between Broadway to Downing with the intent to provide short term, temporary improvements. Conversation of the roadway is being considered for the long term improvements. No conceptual design is presented in this report.

TAC Comments

- *From a neighborhood perspective, Walnut should be preferred as RTD's main corridor. Seems like Blake is being portrayed as the main transit corridor by RTD currently. Walnut is more appropriate as the main transit corridor. Would be supportive of the two-way on both.*
- *Two way conversions were originally proposed by the community as a way to provide traffic calming. However, not all two way streets are slow/calm. It is really dependent on their location and role in the network. Need to be aware of specific design features to slow traffic.*

Summary

- Concept
 - The Walnut travelway could support one travel lane in each direction and some combination of a parking lane, turn-lane, and/or bike lane in each direction, as appropriate.
- Considerations
 - Conversion limits the feasibility of implementing either on street parking or a bike lane, and is complicated by the presence of industrial loading docks.
- Cost - \$3,400,000(CIP/Grant Funding Opportunity)
- Implementation Complexity – Moderate
- Timeframe – Short-long
- Implementation Feasibility - Moderate

27. Downtown Strategic Transportation Plan Travelshed Analysis

The NEDN recommended that several other projects and studies be conducted to evaluate travel patterns and transportation concepts.

This project is currently progressing through other means or is already being studied further and no conceptual design is presented in this report.

Summary

- Concept
 - A Travelshed Analysis of downtown Denver and its adjacent neighborhoods will provide an overview of the travel behavior and needs of residents and visitors to this region.
- Considerations
 - Traffic modeling for local and regional movement, existing and future demand
 - Changes to the travelshed based upon the I-70 improvements, Brighton Corridor improvement, one to two way conversions within the area
 - Existing and future pedestrian and bike network connectivity and functionality
 - Updates based upon updates to Denver Moves
 - Changes based upon sidewalk improvements at 38th & Blake Station Area and improvements with redevelopment of properties
 - Transit Implementation and Planning
 - East Corridor
 - Central Rail Extension
 - Brighton Corridor Transit Enhancements
 - As part of its scope, this study may also incorporate other mobility recommendations identified in this plan.
- Cost - \$150,000 (Operational Funding Opportunity)
- Implementation Complexity – Low
- Timeframe – Short
- Implementation Feasibility - Moderate

28. Curtis Street: One to Two Way Conversion (18th Street to Broadway)

Curtis Street is a one way road with three travel lanes. It is a mixed use corridor, servicing two bus routes and with no bike facilities. The sidewalk is 10 feet wide between 18th and 21st Street, and 5 feet wide between 21st Street and Broadway. The majority of the sidewalks on this corridor have a buffer with street trees and amenities. There are no loading docks. There is on street parallel parking along the corridor.



TAC Comments

- *Two way conversions were originally proposed by the community as a way to provide traffic calming. However, not all two way streets are slow/calm. It is really dependent on their location and role in the network. Need to be aware of specific design features to slow traffic.*

Summary

- Concept
 - Curtis Street could support a two way conversion with one travel lane, parking lane and bike lane in both directions.
- Considerations
 - Effects of the conversion on intersections, including necessary re-signing, re-striping and potential signalization or modification of existing signals
 - Access reconfiguration for both commercial and residential land uses and side streets
 - Demand for existing loading docks, and reconfigured access if necessary
 - Lane configuration for two way street, existing curb to curb width, and right of way width through the length of the corridor
 - On-street parking assessment given roadway availability with two way lane configuration curb to curb width
 - Effects of conversion on the corridor's existing bicycle facility and maintaining a connected bicycle network
 - Effects of the conversion on transit access
 - Effects of the conversion on traffic calming through research of case studies and national best practices
 - Transition into a two way street at either end of the corridor
 - Potential modification of roadway speeds by exploring land uses, signal spacing, lane width, etc.
 - Tradeoffs of advantages and disadvantages of the conversion such as width of a separated bicycle facility, traffic calming and access
- Cost - \$1,200,000 (CIP/Grant Funding Opportunity)
- Implementation Complexity – Moderate
- Timeframe – Long
- Feasibility - Low

29. California Street: One to Two Way Conversion (Park Avenue to Broadway)

California Street is a one way road with two travel lanes. It is a commercial corridor, with no bus routes or bike facilities. Most of the sidewalks in the corridor are five feet wide, with 14 foot sidewalks near Broadway. The majority of the sidewalks on this corridor have a buffer with street trees and amenities. There are no loading docks. There is on street parallel parking along the corridor. The curb to curb width is 36 feet through the extents of the project. The estimated volume is 2,400 vehicles per day.



This conversion could reinforce the pedestrian connection to the central business district, but may also limit the feasibility of on street parking or a bike facility along the corridor. Future conversion of California should consider future streetcar service.

TAC Comments

- *Two way conversions were originally proposed by the community as a way to provide traffic calming. However, not all two way streets are slow/calm. It is really dependent on their location and role in the network. Need to be aware of specific design features to slow traffic.*

Summary

- Concept
 - California Street could support one travel lane in each direction and some combination of a parking lane, turn-lane, and/or bike lane in each direction, as appropriate.
- Considerations
 - Effects of the conversion on intersections, including necessary re-signing, re-striping and potential signalization or modification of existing signals
 - Access reconfiguration for both commercial and residential land uses and side streets
 - Demand for existing loading docks, and reconfigured access if necessary
 - Lane configuration for a two way street, existing curb to curb width, and right of way width through the length of the corridor
 - On-street parking assessment given roadway availability with two way lane configuration curb to curb width
 - Effects of conversion on the corridor's existing bicycle facility and maintaining a connected bicycle network
 - Effects of the conversion on transit access
 - Effects of the conversion on traffic calming through research of case studies and national best practices
 - Transition into a two way street at either end of the corridor
 - Potential modification of roadway speeds by exploring land uses, signal spacing, lane width, etc.
 - Tradeoffs of advantages and disadvantages of the conversion such as width of a separated bicycle facility, traffic calming and access

- Cost - \$600,000 (CIP/Grant Funding Opportunity)
- Implementation Complexity – Moderate
- Timeframe – Medium
- Implementation Feasibility - Low

30. Champa Street: One to Two Way Conversion and Reclassification to Collector (Downing to Broadway)

Champa Street is a one way road with two travel lanes. It is a mixed use, including multi-unit residential, corridor. The corridor has no bus routes and a 5.5 foot bike lane. Most of the sidewalk in the corridor is five feet wide and has a buffer with street trees and lighting. There are no loading docks. There is on street parallel parking along the corridor. The curb to curb width is 36 feet through the extents of the project. The estimated volume is 12,900 vehicles per day. The Champa/Stout couplet sees more traffic than the other one way streets in the neighborhood.



Trade-offs need to be considered to move this project forward. Discussions with the Stakeholder group indicated that they would prefer to maintain the bicycle facility on the street opposed to converting the street to two-way and losing the bicycle facility.

TAC Comments

- *Two way conversions were originally proposed by the community as a way to provide traffic calming. However, not all two way streets are slow/calm. It is really dependent on their location and role in the network. Need to be aware of specific design features to slow traffic.*
- *The interest in converting these streets to two ways has decreased from the neighborhood perspective. The neighborhood is most interested in traffic calming along the streets, and residents have questions about how a two-way conversion achieves this goal. The benefits do not necessarily outweigh the impacts.*

Summary

- Concept
 - Champa Street could support one travel lane in each direction and some combination of a parking lane, turn-lane, and/or bike lane in each direction, as appropriate.
- Considerations
 - A conversion will result in the loss of an enhanced bicycle lane.
 - Reclassifying this street to a collector could better reflect how this street is used today
 - Effects of the conversion on intersections, including necessary re-signing, re-striping and potential signalization or modification of existing signals
 - Access reconfiguration for both commercial and residential land uses and side streets
 - Demand for existing loading docks, and reconfigured access if necessary
 - Lane configuration for two way street, existing curb to curb width, and right of way width through the length of the corridor
 - On-street parking assessment given roadway availability with two way lane configuration curb to curb width
 - Effects of conversion on the corridor's existing bicycle facility and maintaining a connected bicycle network
 - Effects of the conversion on transit access

- Effects of the conversion on traffic calming through research of case studies and national best practices
 - Transition into a two way street at either end of the corridor
 - Potential modification of roadway speeds by exploring land uses, signal spacing, lane width, etc.
- Cost - \$1,800,000
 - Implementation Complexity – Low
 - Timeframe – Long
 - Implementation Feasibility - Low

TAC did not recommend this project to move forward.

3.1. Stout Street: One to Two Way Conversion and Reclassification to Collector (Broadway to Downing)

Stout Street is one way road with two travel lanes. It is a mixed use, including multi-unit residential, corridor. The corridor services one bus route and has a 5.5 foot bike lane. Most of the sidewalk in the corridor is five feet wide, that widens to 10 feet near Broadway. It has a buffer with street trees and lighting. There are no loading docks. There is on street parallel parking along the corridor. The curb to curb width is 48 feet through the extents of the project. The estimated volume is 14,400 vehicles per day. The Champa/Stout couplet sees more traffic than the other one way streets in the neighborhood. Reclassifying this street to a collector could better reflect how this street is used today.



Trade-offs need to be considered to move this project forward. Discussions with the Stakeholder group indicated that they would prefer to maintain the bicycle facility on the street opposed to converting the street to two-way and losing the bicycle facility.

TAC Comment

- *The interest in converting these streets to two ways has decreased from the neighborhood perspective. The neighborhood is most interested in traffic calming along the streets, and residents have questions about how a two-way conversion achieves this goal. The benefits do not necessarily outweigh the impacts.*

Summary

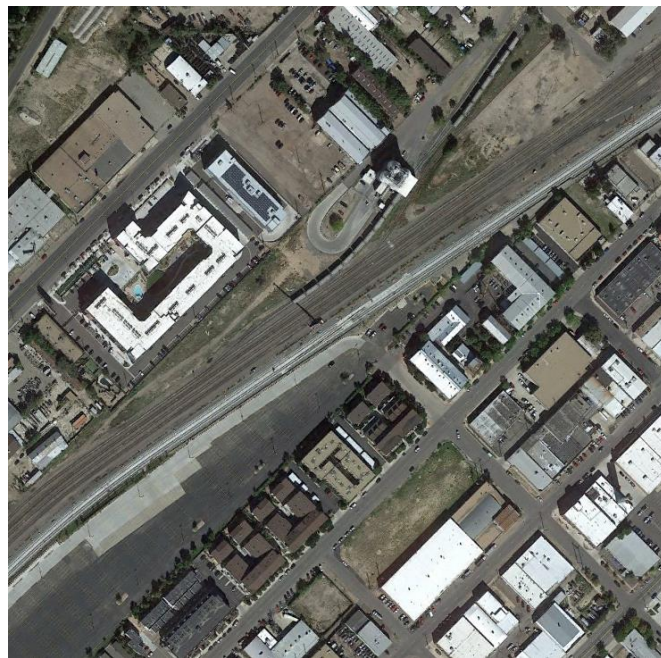
- Concept
 - Stout Street could support a two way conversion with one travel lane, parking lane and bike lane in each direction.
- Considerations
 - Effects of the conversion on intersections, including necessary re-signing, re-striping and potential signalization or modification of existing signals
 - Access reconfiguration for both commercial and residential land uses and side streets
 - Demand for existing loading docks, and reconfigured access if necessary
 - Lane configuration for two way street, existing curb to curb width, and right of way width through the length of the corridor
 - On-street parking assessment
 - Effects of conversion on the corridor's existing bicycle facility and maintaining a connected bicycle network
 - Effects of the conversion on transit access
 - Effects of the conversion on traffic calming through research of case studies and national best practices
 - Transition into a two way street at either end of the corridor
 - Potential modification of roadway speeds by exploring land uses, signal spacing, lane width, etc.
- Cost - \$1,800,000 (CIP/Grant Funding Opportunity)

- Implementation Complexity – Low
- Timeframe – Long
- Implementation Feasibility – Low

TAC did not recommend this project to move forward

32. 33rd Street Multimodal Bridge

This project proposed constructing a multi-modal bridge or underpass to accommodate bicyclists, pedestrians and automobiles across Union Pacific Railroad. This project The TAC determined that this potential crossing is no longer possible due to a proposed hotel in that location and should abandon further study. Because an east-west crossing is still needed, the nearby, proposed 31st Street bridge will be the project that should move forward. .



CONCEPTUAL DESIGN AND IMPLEMENTATION PLAN

Appendix E of this report includes an engineering assessment of the utilities in the area, as well as conceptual designs and cost estimates associated with each project. **Appendix F** includes a more developed design for the 21st Street Pedestrian and Bicycle Improvements at Broadway. The more detailed plan is included for this project only due to its high priority and relatively simple complexity. Construction costs in 2014 dollars were estimated based on the elements included in the conceptual design plan. This cost estimate is susceptible to change if an element of the concept changes that requires federal approval such as requiring National Environmental Policy Act (NEPA).

NEXT STEPS

A number of projects in the study are already moving forward with funding or are recommended to move forward with identified funding in place for design and/or implementation.

Preliminary to 65% designed construction documents were completed for the 21st and Broadway crossing as part of this study. The construction plans include signalization of the intersection as well as closing the intersection to vehicular traffic. The intent is to construct the improvement in 2016.

The next steps for the remaining projects on the prioritized list are to identify funding sources to either further refine the projects through a study or prepare design drawings for implementation. As funding becomes available, more developed design and implementation plans for various projects should be completed.

Potential funding for these projects comes from three different sources:

1. Operational Funding; Types of project include those covered in the general infrastructure improvement plan from the City (concrete curb and gutter, curb ramps, pavement markings, on call sanitary and storm sewer work, etc.). These projects typically cost \$300,000 or less.
2. Capital Improvement Plan (CIP); Projects included on the CIP compete against other projects within the City (design and construction management of various streets, alleys, bridges, storm and sanitary sewers, and streetscape projects). The list is a 6 year list. These projects typically cost \$300,000 to \$1,000,000.
3. Grant Funding; These projects are typically the large projects that are over \$1,000,000. Projects compete with other projects locally and regionally. .

Other identified bike/ped crossings of Broadway should be explored further, with a focus on urban design. Curtis Park traffic calming is on the 2015-2016 Operational Budget. Enhanced bicycle lanes will be identified and implemented along Champa and Stout which will provide traffic calming elements throughout the neighborhood and along the corridor.

APPENDICES

- **Appendix A** - Mobility Mapping Meeting Notes
- **Appendix B** - Prioritization Criteria
- **Appendix C** - Project Sheets
- **Appendix D** - TAC Meeting Material
- **Appendix E** - Conceptual Design Packages and Study-wide Utility Information
- **Appendix F** – Developed Conceptual Design for 21st Street



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