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PLAN SUMMARY

The plan summary was created as a separate document that provides an overview of the process, recommendations and next steps resulting from the East Side Mobility Plan.

1.0 INTRODUCTION AND PLAN PROCESS

1.1 Background: Need for the East Side Mobility Plan

The need for the East Side Mobility Plan emerged as a result of the City and County of Denver (City) 2008 Strategic Transportation Plan (STP). The STP is a multimodal transportation plan that was created to understand and address the current and future transportation needs of the city. The STP identified 12 “travel sheds,” including the East Side travel shed, which is bounded by Interstate 70 (I-70) to the north, Leetsdale Drive/ Mississippi Avenue to the south, Monaco Street Parkway to the west and Yosemite Street/Havana Street to the east, as shown in Figure 1. A travel shed includes a network of multimodal transportation facilities that work together as a system. The East Side Mobility Plan is the first project to implement the STP, identifying multimodal solutions to improve overall mobility within the system of transportation facilities throughout the travel shed.

The guidance established by the STP set a vision for transportation that moves people rather than just vehicles, and to implement multimodal improvements that support a livable, connected and sustainable city. The planning methods established by the STP include emphasis on person-trips and a balance of behavioral, physical and operational improvements to provide the framework from which the East Side Mobility Plan was developed. As a result, the East Side Mobility Plan includes recommendations for all modes throughout the travel shed including pedestrian, bicycle and transit, in addition to vehicles.

Currently the East Side travel shed experiences heavy traffic volumes, congested roadways, inadequate sidewalks, inadequate connections to public transit and discontinuous or interrupted bicycle routes. The East Side Mobility Plan provides a better understanding of the transportation issues affecting the travel shed along with a strategic package of recommendations to improve the effectiveness of the transportation system to “move people”.
Figure 1. East Side Mobility Plan Map
1.2 Planning Process

The East Side Mobility Plan was developed in four stages: Vision, Innovation, Strategy and Next Steps over a 12-month period. The plan fits within an overall planning and implementation process as defined below:

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The STP was the starting point that created the citywide transportation vision and strategy. The East Side Mobility Plan is the following step of the process and results in more specific recommendations for the East Side travel shed. Each of the recommendations provided by the East Side Mobility Plan will require final implementation steps that vary depending on the complexity of the recommendations. Additional steps will take the recommendations from this plan and identify funding, complete additional analytical requirements and clearances, conduct detailed engineering design, and move into construction or implementation. The timing of implementation for each recommendation is related to complexity, with consideration of whether the recommendation can be implemented as a stand-alone project or should be packaged with other improvements, relative cost, intensity of design, and potential funding opportunities. The four stages in developing the East Side Mobility Plan are discussed below.

VISION

The vision stage included data collection of the existing conditions and planned improvement projects throughout the travel shed. This phase also included identification of mobility issues with City staff, a task force and the public. This broad-based input was achieved through meetings, public open houses and online surveys.

INNOVATION

The innovation stage included development of potential solutions for each mobility challenge identified. These generalized solutions were presented to the task force and public during a second round of meetings. The public was provided opinions and concerns before the next stage in the plan.
STRATEGY
The strategy stage included refinement of ideas and screening solutions developed during the previous stages. The refinement process involved input from the task force and public with higher-level cost and environmental screening. This stage in the process eliminated some options with higher impacts. A final list of recommendations for each transportation mode was developed.

NEXT STEPS
The next steps stage included review of the final recommendations and determining whether the recommendations made sense.

The remainder of the plan describes the existing conditions; relevant plans, studies and projects; and describes possible alternatives.

1.3 Public Outreach Process

Obtaining public input throughout the four stages was considered vital to the success of the planning effort. The public involvement component was specifically designed and implemented to complement and support the technical evaluation. Several outreach and participation strategies were applied, as discussed below.

Meetings with the City and County of Denver
Meetings with City staff from various departments were held at the beginning of the project and at key project milestones. These meetings provided input on critical issues based on historical and institutional knowledge of the area and coordinated related project efforts. The project team leveraged this input and information to better understand and analyze pertinent mobility issues.

Meetings with Neighboring Jurisdictions and Interested Parties
The project team met with individuals from the City of Aurora, Colorado Department of Transportation (CDOT) and Regional Transportation District (RTD), to brief them on the project, gather data and information to further the analysis, and solicit input and reactions to recommendations.

Briefings with Elected Officials and Public Works Executive Management
The project team conducted formal briefings with elected officials in the travel shed and Denver Public Works Executive Management Team. The purpose of these briefings was to provide pertinent study information and solicit feedback. All elected officials in the travel shed received email updates on the project. The project team received policy-level direction from Denver Public Works Executive Management.
Task Force
All Registered Neighborhood Organizations (RNOs) in the travel shed were invited to appoint a representative to the East Side Mobility Plan task force. In addition to RNO representation, the task force included representatives from business associations, educational institutions, the Denver Police Department and the Denver Fire Department. Both City Council members in the plan area were invited to designate two representatives. More than 20 organizations were represented on the task force. The task force met three times during the study to provide input to the analyses and to serve as a critical conduit between the City and the public. The group was charged with sharing project information with the constituents they represented. The input received helped shape the process and information presented to the larger community.

Open House Workshops
Public workshops were held during the first three stages and a fourth meeting was held to mark completion of the study. These highly interactive workshops provided individuals with the opportunity to interact face-to-face with the project team, gain a deeper understanding of the Plan and provide crucial feedback on mobility issues and potential improvements. The public workshops were also used to gather responses to the project’s online surveys. With the City’s incorporation of community values to solve multimodal challenges, the public opinions gathered from the workshops proved quite valuable and helped form the decision-making process.

Website
An East Side Mobility Plan website was created (www.denvergov.org/eastside) to serve as a key source for project information and involvement opportunities for stakeholders. The website included background information about the plan and its goals, the latest project news, information on upcoming public workshops and task force meetings, copies of all materials presented at past meetings and links to public involvement opportunities (e.g. signing up for the mailing list, upcoming workshops, online surveys, contacting the project manager). Portions of the website, including the latest news and newsletter articles, were available in Spanish.

Online Surveys
In an effort to gather broad community input, the project team conducted two online surveys. The first survey, conducted from October 30, 2009 to November 30, 2009, helped identify mobility issues/challenges in the East Side travel shed. The second survey, conducted from May 7, 2010 to June 1, 2010, provided reactions to potential mobility improvements in the travel shed. The surveys were promoted through the project website, project newsletter, emails blasts, the task force, and public workshops.

Newsletters
At each major project milestone, the project team created and sent electronic newsletters to all individuals in the stakeholder database. The database comprised task force members, elected officials representing constituents in the study area and individuals who requested project updates on the project website or during a public meeting. The newsletters raised awareness and
understanding of the project and promoted opportunities for the general public to provide input to plan development.

**Media Relations**

Through proactively working with the media, the project team was able to spread its reach within the community regarding the plan and upcoming meetings. The project team sent press releases and media alerts to media professionals covering the travel shed. The team also conducted interviews and responded to the media. Project articles in the *Front Porch Newspaper*—a free community newspaper widely available throughout the travel shed and distributed to 35,000 households and businesses in the area—helped attain extensive project coverage and promote public workshops.

**Community Partnership Program**

The Community Partnership Program created and enlisted the help of a network of more than 100 East Denver organizations (neighborhood groups, recreation centers, churches, schools, libraries). These organizations shared project information with their memberships, promoted public meetings, and encouraged participation in online surveys and other project activities. Many of these organizations are specifically dedicated to serving the needs of minority and low-income populations. As a result, they helped the project reach a more diverse population in the travel shed.

**Hispanic Outreach**

The City and project team were committed to providing opportunities for Spanish speakers in the community to participate in the process. Project materials such as newsletters and fact sheets were available in Spanish. A Spanish speaking team member attended each of the public workshops to help the team interact with those who spoke Spanish. Additionally, the team leveraged its network of community-based relationships (e.g. churches, community centers) to help inform and engage the Hispanic community.

1.4 Public Outreach at Each Stage of the East Side Mobility Plan

**VISION**

Inputs on the existing transportation facilities were received from numerous sources, including City staff, online surveys, the task force, and a community workshop. The meetings included a presentation with the initial overview of the project followed by informal question and answer session. The task force members were asked to give their insight and ideas. The task force meeting was held before the public workshop to resolve issues before information was presented to the community.

Maps were presented showing the travel shed by modes: roadway, pedestrian, bicycle and transit. The maps showed the existing and planned conditions of each of the travel modes. The attendees were encouraged to visit all stations illustrating each of the modes of travel and identify areas they believed to have mobility issues. Attendees were encouraged to draw and write their concerns.
directly on the map. All comments on the aerial maps were compiled. Computers connected to the
first online survey for attendees to take before leaving the meeting.

The first online survey had 10 questions and was advertised on the East Side Mobility Plan website;
the project newsletter; email blasts; through neighborhood, business and civic/religious
organizations; at the task force and the public workshop. The survey asked questions about each
mode of travel and where mobility problems existed in the travel shed. Conclusions drawn from the
151 respondents to the survey indicate that:

- A majority of travel has a destination within the travel shed or to downtown Denver
- There is a high dependence on personal vehicle travel
- Primary modes of transportation are chosen for convenience and travel time
- Travel along the north-south streets are of the biggest concern, along with inadequate bicycle and pedestrian facilities
- The most difficult area to travel is from 23rd Avenue to 11th Avenue across the travel shed
- The traffic congestion on Quebec Street is a large concern

INNOVATION
Through the process of finding the more generalized mobility concerns, it became evident that there
was an area within the travel shed that had issues with every mode of transportation studied. This area is bordered by Montview Boulevard to the north, 11th Avenue to the south, Monaco Street Parkway to the west and Yosemite Street to the east.

During the second task force meeting and public workshop, the first improvement ideas for each
mode of transportation were presented to the task force and the public workshop. The project
team was then able to focus attention on each of these areas to find the causes of the mobility gaps.

STRATEGY
The third task force meeting and public workshop presented the mobility recommendations for each
mode and the options for the subarea with issues across modes. The public was able to make
comments on the proposed recommendations and was encouraged to take the second online
survey. All comments written on comment sheets from the public workshop were compiled.

The second online was advertised on the East Side Mobility Plan website; the project newsletter;
email blasts; through neighborhood, business and civic/religious organizations; and at the task force
meeting and the public workshop. The survey asked for opinions on roadway improvements that
were retained for the area in the middle of the travel shed. Conclusions drawn from the 130 respondents to the survey indicate that:

- A majority of travel has a destination within the travel shed or to downtown Denver
- Most feel that it is important to improve sidewalks around key pedestrian areas
- Most support prioritizing north-south bicycle mobility on Yosemite Street
• Majority support preserving at least one lane of existing on-street parking if Yosemite Street or Syracuse Street is reconfigured
• There are concerns with the impacts of improving Quebec Street within the existing right-of-way
• Most believe that expanding Yosemite Street beyond the right-of-way has the lowest benefit compared with other options
• Expanding Quebec Street beyond the right-of-way has the most polarizing responses with responses at either end of the spectrum
• One-way couplet was identified by many as a “livable solution”

NEXT STEPS
Each recommendation was reviewed to determine if it should be implemented alone or packaged with other projects; if further design or study is required; relative low, medium or high cost; the category of project as behavioral, operational, or physical; if implementation is short or long timeline. The next steps stage included completion of this mobility plan and the final public meeting celebrating the completion of the East Side Mobility Plan.

1.5 Relevant Plans, Studies and Planned Projects
Several planning efforts both citywide and within the travel shed have been completed and shape the future land use and transportation for the East Side travel shed. These plans include:

• Denver Comprehensive Plan 2000, adopted in 2000
• Denver Bicycle Master Plan Update 2001, adopted in 2002
• Blueprint Denver: An Integrated Land Use and Transportation Plan, adopted in 2002
• The Game Plan, adopted in 2003
• City and County of Denver Pedestrian Master Plan, adopted in 2004
• Greenprint Denver, adopted in 2006
• Transit-Oriented Development Strategic Plan, developed in 2006
• Denver Strategic Transportation Plan (STP), completed in 2008
• The Denver Zoning Code, adopted in 2010
• Denver Storm Drainage Master Plan, adopted in 2009
• Quebec Street: 11th Avenue to 23rd Avenue, Safety & Traffic Operations Study
• I-70 East Corridor Environmental Impact Statement (EIS)
• Colfax Streetcar Feasibility Study
• Lowry Vista General Development Plan
• The Buckley Annex Redevelopment Plan
2.0 TRAVEL SHED CONDITIONS

2.1 Land Use

The existing land use within the East Side travel shed consists of residential, commercial, industrial, mixed-use, employment, campus, parks and open space, and neighborhood center land uses. Existing land use is shown in Figure 2. West of Quebec Street, the majority of the travel shed is residential with small areas of parks and open space, a large section of public/quasi-public land use just north of 17th Avenue and a large section of office land use north of Alameda Avenue. North of Smith Road is industrial land use with a large area of vacant/other land use. Along Colfax Avenue, the land uses are primarily commercial and mixed-use. The City adopted a new form-based zoning code in 2010 which is an update of the zoning code adopted in 1956 and is to be followed as areas are redeveloped.

Land Ownership

The East Side travel shed is within the City and County of Denver. Right-of-way width along each street varies throughout the travel shed. In some cases the City property (right-of-way) extends beyond the footprint of the roadway into areas in front of adjacent properties. For example, in some areas, the City right-of-way is 60 feet wide on Quebec but the road footprint is only 30 feet wide. This leaves about 15 feet of width on either side of Quebec Street that is City property. Existing right-of-way widths for some of the roadways in the travel shed include:

- Monaco Street Parkway right-of-way varies from 120 to 205 feet
- Quebec Street right-of-way varies from 60 to 120 feet within the undivided roadway section and 300 feet to 350 feet along the median divided roadway just south of the I-70 interchange
- Central Park Boulevard right-of-way varies from 125 to 170 feet
- Yosemite Street is the border between the City and County of Denver and the City of Aurora in several places, with a total right-of-way of 60 feet, 30 feet belonging to the City and County of Denver
- Martin Luther King Jr. Boulevard right-of-way varies from 70 to 120 feet
- Montview Boulevard right-of-way is 120 feet
- Colfax Avenue right-of-way is 100 feet
- Alameda Avenue right-of-way is 120 feet
- Mississippi Avenue right-of-way is 120 feet
Figure 2. Existing Land Use Map
2.2 Person-Trip Capacity

The identification of major mobility gaps was a key driver for developing ideas and recommendations to improve multimodal mobility in the travel shed. The STP measurement of person-trips is a new way of measuring transportation capacity from a multimodal perspective. The combination of major mobility gaps and person-trip capacity are two converging methods that provide a better understanding of the transportation needs in the travel shed.

Person-trip capacity represents the ability of transportation facilities to move people, rather than just motor vehicles. To move people and to serve all types and lengths of person-trips, the transportation system should have a complete and connected system of sidewalks, bicycle facilities, transit routes, and roadways. A complete and connected multimodal system allows the transportation system to reach a high level of efficiency in two ways: 1) it provides options to serve transportation purpose that a traveler is seeking to accomplish, and 2) it allows a more even balance of the transportation system which benefits capacity for all modes.

For this Plan, person-trip capacity is characterized by assessing whether the transportation facilities/services are well connected and the infrastructure supports a complete multimodal system. An important part of the assessment is determining where the multimodal system is or is forecast to be most strained by person-trip growth. The Denver Regional Council of Governments (DRCOG) 2035 travel demand model was a source of information for determining existing and future person-trip demand in the travel shed. Another source of information was traffic counts collected by the City ranging from 1999 to 2006. Figure 3 provides an overview of the expected future person-trip demand in the travel shed.

2.3 Major Mobility Gaps

Based on review of the existing and expected growth in person-trip demand, an assessment of the connectivity of the multimodal transportation facilities, major mobility gaps within the travel shed were identified as shown in Figure 4. Multimodal mobility in the north-south direction was a dominant theme. North-south bus mobility and roadway mobility were of high concern. Issues with bicycle mobility were not specified by any particular route, but were more generally described as poorly connected in the north-south direction between Monaco Street Parkway and Yosemite Street. Pedestrian mobility concerns were found throughout the travel shed where sidewalks are missing or are deficient in width, where pedestrian crossing of roadways is difficult, and where pedestrian amenities such as bus stops are not well defined or connected to a sidewalk system. Missing sidewalks and connections near schools and along transit routes were identified as higher priority concerns. Through the task force, community input, and meetings with City staff and other agency stakeholders, mobility issues and potential improvement recommendations were generated.
Figure 3. Person-Trip Capacity
Figure 4. Major Mobility Gaps
3.0 TRANSPORTATION NEEDS AND RECOMMENDATIONS

3.1 Transit

Transit service in Denver and the surrounding areas, including light rail and public buses, is managed by RTD. Existing transit service in the East Side travel shed consists of several bus routes. Planned transit service includes RTD’s East Corridor Commuter Rail line which is expected to be complete by 2016. The City has also completed a feasibility study of a potential streetcar on an east-west alignment in the Colfax Avenue corridor. The east-west Colfax Avenue corridor is a very heavily used transit linkage and transit alternatives, including a streetcar, will be analyzed in a more detailed study, as funding is identified.

3.1.1 Existing and Planned Transit Conditions

Bus Transit

Numerous bus routes operate throughout the travel shed as shown in Figure 5. The bus routes include Local, Limited, Express and Regional operations. Data from the July 2009 RTD ridership report estimates that the north-south routes in the travel shed have an average weekday ridership of 9,151, while the east-west routes have an average weekday ridership of 52,670.

Local routes provide service in higher density/urban areas and stop an average of every 600 feet, or every one to two blocks. Limited routes provide service in higher density/urban areas but make only selected stops, usually at high-volume transfer points or major traffic intersections. This allows faster running times. Express routes provide service from high-transfer or high-density ridership locations such as park-n-Rides to other points of high ridership. These routes only make selected stops on the outer parts of their route and continue without stopping until their final destination. Regional routes provide service from one urban area to another and run the majority of their route on major traffic corridors such as highways or interstates.

High frequency bus service currently runs through the travel shed along Smith Road, Colfax Avenue, and Alameda Avenue to serve the higher volume of ridership for travel in the east-west directions. There are no high frequency transit lines traveling north-south within the travel shed.

No significant eliminations of bus routes are planned with the implementation of the East Corridor Commuter Rail Transit line. Combined with the East Corridor line, the current transit system offers a system of routes that provides many opportunities for transit users. With the implementation of the East Corridor, service will change on routes 28, 38, 44, and 45. These routes will converge at the proposed new rail/bus transit transfer station in the Stapleton area.
**Figure 5. Existing and Planned Transit Route Map**

- **Existing Transit Routes**
- **Transit Route Number**
- **Existing Stapleton Transfer Station**
- **Future Planned Transit Route**
- **Future East Corridor Commuter Rail**
- **Future East Corridor Station**
- **Travel Shed Boundary**

Source: RTD, City and County of Denver
East Side Mobility Plan

Rail Transit

East Corridor
As part of the RTD FasTracks program, the East Corridor will include 22.8 miles of electrified commuter rail service from Denver Union Station in downtown Denver to Denver International Airport. The corridor has five intermediate stations, including the Central Park Station in the East Side Travel shed south of Smith Road and just east of Ulster Street. In addition to the commuter rail stop, the station is designed to have 1,500 parking spaces and a bus transfer center. The location of the future Central Park Station and the alignment of the commuter rail are shown in Figure 6. There is no existing or planned light rail service within the travel shed.

Colfax Streetcar Feasibility Study
The City has completed a feasibility study for development of a modern streetcar line on the Colfax corridor. Only a segment of the streetcar study area is within the East Side Travel Shed. The streetcar study limits are 19th Avenue on the north, 12th Avenue on the south, Syracuse Street on the east, and I-25 on the west. The City currently does not have plans to develop and implement streetcar service.

3.1.2 Transit Issues and Ideas
Issues were identified related to specific transit routes as well as issues related to the amenities associated with transit. These included adding or improving sidewalks along transit routes and bus stop waiting areas and improving intersections, roadway pavement surface and drivability to allow buses to travel through intersections without damaging the vehicles. Transit mobility improvement ideas to address these issues are shown in Figure 6.

Two roadways were identified as having distinct gaps in transit mobility: Quebec Street and Yosemite Street. Transit Route 73 travels north-south on Quebec Street, turns east on 11th Avenue and Lowry Boulevard to connect to Yosemite Street serving Aurora Community College and Community College of Denver. Route 6 only serves Quebec Street from 6th Avenue to Lowry Boulevard causing a gap in service from 11th Avenue to 6th Avenue. Yosemite Street has a gap in service between Montview Boulevard and 11th Avenue. Transit Route 105 serves Yosemite Street to the north from Montview Boulevard to Martin Luther King Jr. Boulevard. Transit Route 73 serves Yosemite Street to the south from 11th Avenue to Lowry Boulevard. The geometric design of the roadway will not allow buses to safely serve Yosemite Street from 11th Ave to Montview Boulevard without damage to both the road and the vehicle. Many sections of Quebec Street either have no sidewalk or narrow Hollywood-type sidewalks. At some intersections, there are no crosswalks or curb ramps that provide pedestrian refuge away from the roadway. There also is poor access to transit stops along Quebec Street.
Figure 6. Transit Mobility Improvement Ideas
3.1.3 Transit Mobility Recommendations

Transit mobility recommendations focus on improving access and safety to existing routes, improving service on existing routes, adjusting existing routes, and identifying potential for adding routes in the long-term. It is also important to recognize that the future East Corridor commuter rail and bus transfer station in the Stapleton area will greatly increase transit service to the travel shed. By improving accessibility and efficiency of existing bus routes that flow into the transfer station, more Denver residents will make use of this new facility.

The transit mobility improvements enhance north-south transit mobility along Quebec Street and Yosemite Street and provide amenities to maximize transit accessibility. Transit recommendations include improving bus frequency and transfers with crossing routes, and more direct routing of buses along Quebec Street. Improved public amenities include adding or improving sidewalks along transit routes and near bus stop waiting areas.

Specific transit mobility recommendations are shown in Figure 7 and include:

- Improve sidewalks, bus stops and pavement surface on Quebec Street from 26th Avenue to 6th Avenue
- Improve bus stops and pedestrian crossings of Quebec Street from Alameda Avenue to Leetsdale Drive
- Improve north-south transit mobility with a more direct Route 73 and provide buses every 15 minutes on Quebec Street from 11th Avenue to 6th Avenue
- Improve north-south transit mobility with a new bus route along the Dayton Street alignment

Bus Stop on Quebec Street north of 17th Avenue
Figure 7. Transit Mobility Recommendations

Improve north-south Transit Mobility with more direct Route 73 and Buses every 15 min on Quebec St from 6th Ave to 11th Ave

Improve Bus Stops and Pedestrian Crossings of Quebec St from Leetsdale Dr to Alameda Ave

Improve north-south Transit Mobility with new Bus Route along Dayton St Alignment

Improve Sidewalks, Drainage, Bus Stops and Pavement Surface on Quebec St from 6th Ave to 26th Ave

Future Bus and Commuter Rail Transfer Station (2015)
All existing routes will be connected to new transfer station
3.2 Bicycle Facilities

3.2.1 Existing and Planned Bicycle Facility Conditions

There are numerous bike facilities within the travel shed. These facilities include on-street bike routes, off-street bike routes, and roadways with designated bike lanes. The existing and planned bicycle routes within the travel shed are shown in Figure 8.

The on-street grid bike system is based on the idea that a person anywhere in the City will be no more than 0.5 mile from a designated route. On-street grid bike routes share the street with cars and do not have a designated bike lane. These routes usually are designated to less busy or commercial streets. They provide a bike route along a street that is not wide enough to stripe a designated bike lane.

Neighborhood bike routes share the street with cars and do not have a designated bike lane. These routes are identified along residential streets with lower traffic volumes.

3.2.2 Bicycle Facility Issues and Ideas

Lack of north-south bike route connectivity was a reoccurring topic during the development of this Plan. While there are designated north-south bike routes, no routes fully connect the northern and southern regions of the travel shed. The closest complete north-south connection is just west of the travel shed along Kearney Street. Bicycle facility improvement ideas are shown in Figure 9.

North-south bike routes include Syracuse Street, Central Park Boulevard/Yosemite Street, and Quebec Street. Syracuse Street is a designated bike route from 33rd Avenue to 11th Avenue where the route turns east and follows Westerly Creek. Central Park Boulevard/Yosemite Street begins as a designated bike route at 35th Avenue but ends as Yosemite Street crosses Lowry Boulevard. Quebec Street is a designated bike route only from Alameda Avenue to Mississippi Avenue.

Travel shed improvement ideas include adding signs directing bikes toward designated routes and improving the bike flow by adjusting street signage to favor the bike routes. Bike routes could be added as on-street bike lanes or off-street paths. Improvements should also be made to mid-block crossings and at all roundabouts on Lowry Boulevard and 6th Avenue. The roundabouts in the Lowry redevelopment area were perceived as unsafe and difficult to cross.
Figure 8. Existing and Planned Bicycle Routes
Figure 9. Bicycle Facility Improvement Ideas
3.2.3 Bicycle Mobility Recommendations

Bicycle recommendations include improved connections of existing routes, making existing routes more continuous and uniform, and adding new routes in areas with gaps. The general theme of bike mobility improvements is to provide continuous north-south bicycle corridors. Specific bike mobility recommendations are shown in Figure 10 and include:

- Extend the bike route on Martin Luther King Jr. Boulevard to Syracuse Street or Central Park Boulevard
- Add bike route improvements along Quebec Street or Syracuse Street alignment depending on preferred roadway solution
- Add bike lanes or path on Yosemite Street to complete the D-21 Bike Route
- Add sharrows on Yosemite Street from 11th Avenue to Colfax Avenue
- Add on-street bike lanes or widen the sidewalk on Quebec Street from Mississippi Avenue to Alameda Avenue
- Add a bike path or sidewalk connection through the Buckley Annex Redevelopment
- Add a bike path or sidewalk on the west side of Fairmount Drive between Valentia Street and Alameda Avenue
- Add a bike route connection on Valentia Street between Parker Road and Highline Canal
- Add bike lanes or path on Yosemite Way from 1st Avenue to Lowry Boulevard
- Add bike route on Oneida Street from 6th Avenue to Martin Luther King Jr. Boulevard
Evaluate Bike Lanes on street or widen Sidewalk on Quebec St from Leetsdale Dr to Alameda Ave

Add Bike Facility on Yosemite St from 11th Ave to Montview Blvd to complete D-21 Route

Mid-Block Signalized Crossing installed Spring 2010

Add Bike Route on Oneida St from 6th Ave to MLK Blvd

Evaluate Bike Lanes on street or widen Sidewalk on Quebec St from Leetsdale Dr to Alameda Ave

Evaluate Bike Path/Sidewalk Connection through Buckley Annex

Add Bike Path/Sidewalk on west side of Fairmount Dr between Valentia St to Alameda Ave

Add Bike Route Connection on Valentia St between Mississippi Ave and Highline Canal

Add Bike Lanes/Path on Yosemite Way from 1st Ave to Lowry Blvd

On-Street Bike Route
Off-Street Bike Route
Road with Dedicated Bike Lane
Planned On-Street Bike Route
Planned Off-Street Bike Route
Planned Road with Dedicated Bike Lane

Travel Shed Boundary

Figure 10. Bicycle Mobility Recommendations
3.3 Pedestrian Facilities

3.3.1 Existing and Planned Pedestrian Facility Conditions

There are three types of sidewalks in the travel shed. Detached sidewalks are offset from the roadway providing a barrier between vehicles and pedestrians. Some detached sidewalks have a large enough offset for trees and shrubs to grow. Attached sidewalks are directly adjacent to the curb and street with no buffer in between. Hollywood curb style sidewalks are narrow attached sidewalks, no more than 3 feet wide, with a rolling/mountable curb.

Roadways in the travel shed that do not have any sidewalks are shown in Figure 11. Roadways in the northern part of the travel shed, roughly from Montview Boulevard to I-70, have sidewalks on both sides of the road, either detached or attached. The majority of the roadways in the southern part of the travel shed, roughly 6th Avenue to Mississippi Avenue, also have some form of sidewalk. Many roadways in the central section of the travel shed are missing sidewalks completely.
Figure 11. Missing Sidewalks and Existing Schools Map

Source: City and County of Denver; Denver Public Schools
Existing Schools
The travel shed contains 24 schools that encompass preschool, elementary, K-8, charter, high school, higher education, and alternative schools including a school for the blind. Some of the schools are located along streets where sidewalks are missing, making it difficult and potentially unsafe for students to walk to school. The locations of existing schools can be seen on Figure 11.

The Safe Routes to School (SRTS) program is being used all across the country by community leaders, parents and schools to encourage and enable more children to safely walk and bike to school. SRTS programs use a variety of education, engineering and enforcement strategies to improve the ability to walk and bike to school and encouragement strategies to entice more to walk and bike. Denver City Council established the Denver Safe Routes to School Coalition on March 27, 2007 with the plan to develop a Denver Safe Routes to School Action Plan. The City has received funding to construct sidewalks in the East Side Travel Shed along Montview Boulevard east of Quebec under the SRTS program.

City Sidewalk Policy and Funding
Current City sidewalk policy is that construction and maintenance of sidewalks are the responsibility of the property owner adjacent to the existing roadway. When a major street reconstruction project is undertaken by the City, the improvements will often include construction of sidewalks and American with Disabilities Act (ADA) compliant intersection curb ramps. With scarce City resources, and critical maintenance of infrastructure a priority use of available local funding, it is unrealistic for the City to program funding at levels adequate to add sidewalks throughout the travel shed. Opportunities for sidewalk funding, such as the SRTS program and the Community Development Block Grant (CDBG) program, do not provide the level of funding necessary to make systematic improvements to the sidewalks.

3.3.2 Pedestrian Facility Issues and Ideas
Large areas in the travel shed are missing or have inadequate sidewalks. Improving pedestrian infrastructure is a recurring need identified during the plan development. Many of the areas missing sidewalks are in established residential neighborhoods with nearby schools. Connecting schools with pedestrian infrastructure is a strong desire throughout the travel shed. Pedestrian mobility improvement ideas are shown in Figure 12.

The lack of adequate curbs, gutters and sidewalks along major transit routes makes using the transit system difficult. The issue is particularly difficult during inclement weather when drainage from the roadway ponds on the route pedestrians take to a transit stop or near the transit stop itself. Roadside drainage along Quebec Street, specifically in the area around Johnson & Wales University where no curb and gutter exist, should be improved to allow a
Improve Intersection
Upgrade Signal Equipment
Add Safe Zones/Refuge
Improve Lighting

Modify Operation of 3 Intersections to Reduce Conflicts
Improve Roundabout Crossings
Modify Operation of 3 Intersections to Reduce Conflicts

Add/Improve Sidewalks Near Schools
Add/Improve Sidewalks on Transit Routes

Citywide Policy for Missing Sidewalks
Add/Improve Sidewalks Near Schools
Reduce Conflicts for North-South Crossings
Improve Signals
Center Medians/Access Control

Missing Sidewalks
Recently Installed Signal Crossing

Preschool (2)
Elementary School or K-8 (11)
Charter School (2)
High School (3)
Higher Education School (2)
Alternative/Other School (4)

Travel Shed Boundary

Figure 12. Pedestrian Mobility Improvement Ideas
clear path for pedestrians to the transit stops. Roadside drainage is discussed in more detail in the next section.

Intersection and mid-block crossings are a safety concern. Specific locations include:

- Crossing Colfax Avenue (one potential improved crossing location would be along the Westerly Creek alignment)
- Crossing Quebec Street
- Crossings of roundabouts on Lowry Boulevard and 6th Avenue Parkway
- Underpass crossing of I-70 via Quebec Street
- Crossing Alameda Avenue east of Monaco Street Parkway
- Intersection crossings of Leetsdale Drive and Monaco Street Parkway

Pedestrian Crossing of Quebec St at 12th Avenue

Crossings of Colfax Avenue between Signalized Pedestrian Crossings

Roundabout Crossings at Lowry Boulevard
3.3.3 Pedestrian Mobility Recommendations

Recommendations include adding new sidewalks, improving connectivity, and improving safety. Emphasis was placed on improvements that would most support multimodal behavior change around schools and along transit routes. Specific pedestrian mobility recommendations are shown in Figure 13 and include:

- Add or improve sidewalks on transit routes to facilitate easier use of the transit system on Quebec Street from 1st Avenue to 36th Avenue, 11th Avenue from Monaco Street Parkway to Yosemite Street, 23rd Avenue from Monaco Street Parkway to Quebec Street, Monaco Street Parkway from 1st Avenue to Martin Luther King Jr. Boulevard (focusing on connections and intersection crossings connecting transit stops along Monaco Street Parkway to crossing streets).
- Add sidewalks near schools as a priority to promote and encourage more students to walk to and from school.
- Improve bus stops and pedestrian crossings of Quebec Street from Leetsdale Drive to Alameda Avenue.
- Widen sidewalks on Montview Boulevard from Quebec Street to Syracuse Street (to be completed in Fall 2010 as a Safe Route to School project).
- Improve pedestrian crossings by enhancing the pedestrian facilities (median refuges, curb ramps, ADA-compliant facilities) on Colfax Avenue at Syracuse Street and Yosemite Street; Quebec Street at 12th Avenue, 13th Avenue and 14 Avenue; Alameda Avenue at Monaco Street Parkway with a pedestrian refuge; and Monaco Street Parkway at Leetsdale Drive.
- Improve north-south pedestrian mobility across Colfax Avenue from Monaco Street Parkway to Yosemite Street (i.e. median refuges).
- Continue to coordinate with a potential Westerly Creek project and define potential pedestrian crossing alternatives across Colfax Avenue along the Westerly Creek alignment.
- Improve pedestrian mobility and safety with the operations of intersections with Leetsdale Drive, Monaco Street Parkway and Exposition Avenue to reduce conflicts and improve pedestrian refuge areas, roadway grades, sight distances, and signal equipment at the intersections.
- Improve pedestrian mobility and safety at the roundabouts along Lowry Boulevard by studying the placement of pedestrian crosswalks relative to the roundabout vehicle entry and exit or adding warning signs.
- Improve Smith Road bridge crossing of Quebec Street to include wider sidewalks, bike facilities and ADA-improved curb ramps and signal equipment.
Improve Pedestrian Crossings:
• Colfax Ave/Syracuse St
• Colfax Ave/Yosemite St
• Quebec St/12th Ave
• Quebec St/13th Ave
• Quebec St/14th Ave
• Alameda Ave/Monaco Pkwy
• Monaco Pkwy/Leetsdale Dr
• Quebec St/Leetsdale Dr

Improve Pedestrian Mobility
by modifying operation of 3 intersections to reduce conflicts

Improve north-south Pedestrian Mobility across Colfax Ave from Monaco Pkwy to Yosemite St

Add/Improve Sidewalks near schools

Add/Improve Sidewalks along Transit Routes:
• 11th Ave from Monaco Pkwy to Yosemite St
• 23rd Ave from Monaco Pkwy to Quebec St
• Monaco Pkwy from 1st Ave to MLK Blvd

Widen Sidewalk on Montview Blvd from Quebec St to Syracuse St
* To be completed Fall 2010 as ‘Safe Route To School’ project

Improve Pedestrian Crossings:
• Colfax Ave/Syracuse St
• Colfax Ave/Yosemite St
• Quebec St/12th Ave
• Quebec St/13th Ave
• Quebec St/14th Ave
• Alameda Ave/Monaco Pkwy
• Monaco Pkwy/Leetsdale Dr
• Quebec St/Leetsdale Dr

Improve Bus Stops and Pedestrian Crossings of Quebec St from Leetsdale Dr to Alameda Ave

Add Sidewalks on Quebec St from 1st Ave to 36th Ave

Add Sidewalks along Yosemite Way

Add Sidewalks near schools

Add/Improve Sidewalks on Quebec St from 1st Ave to 36th Ave

Add/Improve Sidewalks along Montana Pkwy from Quebec St to Yosemite St

Add Sidewalks along Quebec St

Recently Installed Signalized Crossing, Spring 2010

Figure 13. Pedestrian Mobility Recommendations
3.4 Drainage Facilities

3.4.1 Existing and Planned Drainage Facility Conditions

Streets with curb and gutter are critical components of the City’s drainage infrastructure. They collect and convey storm runoff to storm drain inlets which are connected to an underground storm drain which carries the runoff to a creek or gulch and will be empty after a storm. When storm runoff depths reach or exceed City drainage criteria, construction of new or upgraded storm drains is warranted. Fiscal and logistical constraints have not allowed many of the City’s storm drains to be extended into the basin to intercept runoff at Quebec.

Siphons are used to convey runoff across and beneath intersections at several locations within the travel shed. Siphons look the same as storm drain inlets on the surface but function differently. There are over 800 siphons citywide. Siphons collect small flows and dry-weather flows or overwatering and move them under the street and “burp” the water out on the other side and remain full after the flow has stopped. When water is continually flowing, it goes in the upstream inlet, flows under the street in a 12-inch or 15-inch pipe and “burps” out of the inlet on the downstream side. When water stops flowing, what is left in the inlet and pipe remains and can become stagnant. Concerns with siphons include smells from the stagnant water and the potential for mosquito breeding. Currently Public Works Wastewater Management Division removes stagnant water from siphons at regular intervals from spring through fall. An EPA-approved larvicide tablet is also placed in the siphon after each visit to restrict mosquito breeding.

3.4.2 Drainage Facility Issues

The main drainage issues affecting mobility are along Quebec Street. There are no existing storm drains crossing or along Quebec Street from 26th Avenue to Colfax Avenue, and stormwater is managed by surface flow in gutters. In some locations in this area, there is no curb and gutter, allowing water to pond in the roadway shoulder. Storm sewers are at several locations between 6th Avenue and Colfax Avenue. In the section of Quebec Street adjacent to Lowry between 6th Avenue and Alameda Avenue, drainage has been improved significantly. Storm drainage improvements were constructed in 2003 and 2004 along Quebec from Alameda Avenue to Exposition Avenue and a storm sewer was installed in 2009 to drain the east side of Quebec Street between Exposition Avenue and Kentucky Lane, just north of Leetsdale Drive.

Drainage was identified as a major issue along Quebec Street from 14th Avenue to Montview Boulevard. Quebec Street is located along a drainage basin ridgeline near the top of several drainage basins, resulting in little stormwater flowing onto Quebec Street. Major drainage flows away from Quebec. Drainage problems relate to puddles of standing water in roadway shoulder areas lacking curb and gutter and nuisance ponding during and after rainstorms, rather than major flooding. In many cases, the amount of depth of drainage runoff does not meet the City’s criteria for installing or extending a storm drain, hence few
underground storm sewers are in the area to intercept runoff from the roadway. Some areas along Quebec Street, such as 17th Avenue to Montview Boulevard, do not have curb and gutter to efficiently route stormwater away from the road. In other areas along Quebec Street with curb and gutter, asphalt overlays have diminished the capacity to convey stormwater runoff. Quebec Street also lacks sidewalks in this area making mobility difficult for pedestrians, including those walking to transit stops.

Ponding at intersections along Quebec Street results from difficulties moving stormwater runoff from one side of the street to the other. In some locations, inverted siphons intercept the water, convey it underground and bubble it out on the opposite side. Current locations of siphons are not completely clearing the ponding. The ultimate solution is to extend the underground network of storm pipes to these problem areas, when warranted by drainage criteria or as noted in the Denver Storm Drainage Master Plan 2009 which identified $1 billion in storm infrastructure needs throughout Denver.

![Flooding of Quebec Street near Montview Boulevard](image)

### 3.4.3 Drainage Facility Recommendations

The basic drainage facility improvement options involve removing stormwater from the streets and pedestrian facilities. This improvement would benefit facilities along Quebec Street specifically in the area around Johnson & Wales University between 17th Avenue and Montview Boulevard. Four options to address the drainage issues on Quebec Street include:

- Upgrade and extend the City storm pipe upstream into Quebec Street
- Detention/retention system
- Infiltration chambers
- Inverted siphons (bubblers)
Extend the City storm pipe upstream into Quebec Street

Extending storm drains into the upper reaches of the drainage basin is proposed in the Denver Storm Drainage Master Plan 2009. One pipe is proposed to run parallel to Quebec Street. The City is actively pursuing opportunities to extend the storm drains, but these capital improvement projects are very expensive and are long-term efforts to retrofit existing streets with miles of new pipeline. There is no defined timeline for storm pipe extensions to Quebec Street.

Detention/Retention system

This option stores the stormwater runoff in a dedicated pond on the surface or in an underground vault. It is challenging to convey the stormwater to a centrally located pond. The pond must be located on public property or have a public easement and be located downstream of the problem area. No locations have been identified for detention or retention at this time.

Infiltration Chambers

This method is similar to detention or retention ponds where underground chambers are installed to promote infiltration into the soil for groundwater recharge. Infiltration areas usually include a gravel pack over sandy soils. The concept is to create enough voids to hold the storm water for eventual infiltration into the soil. Some soils in Denver contain too much clay for infiltration to keep up with the heavy precipitation events and the systems are overwhelmed and do not function properly. Installing linear infiltration chambers along Quebec Street would provide limited capacity but would have diminished capacity over time due to clogging. They also require public land.

Inverted Siphons (Bubblers)

The inverted siphons convey stormwater underground from one side of the roadway to the other. The outlets are lower in elevation than the inlets and the siphons function by gravity. Inverted siphons have been used by Denver Public Works to manage stormwater where it is impractical to connect to a storm pipe outfall. Curbs and gutters help direct flows to the inverted siphons. Placement of inverted siphon inlets and outlets should be away from intersections and pedestrian crossing areas to reduce the effects of ponding in the pedestrian walk areas.

During the public involvement stages of this project, representatives for Johnson & Wales University showed interest in partnering with the City to improve the drainage issues adjacent to the University. Johnson & Wales University is located along Quebec Street between 17th Avenue and Montview Boulevard.

Further coordination with surrounding land owners and regional drainage planning is needed before any drainage facility options are designed and implemented. Drainage improvements along Quebec Street should be packaged with other improvements, including addition of sidewalks and accessibility to transit stops.
In Denver, property owners are responsible for constructing curbs, gutters and sidewalks along roadways adjacent to their property. This is achieved either individually by the landowner, as part of an improvement district of several landowners, or as part of new subdivisions by the developer. When constructed to City standards, the curbs and gutters are transferred to the City for subsequent maintenance following a warranty period. Sidewalks and areas behind the curb remain the responsibility of the property owner to maintain.

Quebec Street along Johnson & Wales University

3.5 Roadway Facilities

3.5.1 Existing and Planned Roadway Conditions

Roadway Network
The City classifies streets based on their adjacent land uses and their function for pedestrians, bicyclists, and transit. This plan does not refer to the street classifications of the roadways within the travel shed; rather the multimodal system gaps are evaluated based on the number of travel lanes throughout the travel shed. The number of lanes, which includes the total of all lanes from both travel directions, on each roadway can be seen in Figure 14. One-way couplets and parkways are special street types because of their nature and relevance within the travel shed.

One-way Couplets
One-way couplets are pairs of one-way streets that function as a single higher-capacity street. They are usually separated by one city block but may be separated by more. One-way couplets are designed to have a higher transportation capacity than an equivalent two-way street with fewer movements at intersections and better synchronization of traffic.
Figure 14. Existing and Planned Roadways
signals. Three one-way couplets are within the East Side travel shed: Syracuse Street/Roslyn Street, 13\textsuperscript{th} Avenue/14\textsuperscript{th} Avenue, and 17\textsuperscript{th} Avenue/18\textsuperscript{th} Avenue.

\textbf{Parkways}

Parkways were developed to connect major City parks, to serve as components of a system of pleasure drives, and as settings for fine homes, important public and private institutions, and recreational amenities. Projects affecting a parkway must be implemented with sensitivity to the historic character of the street. They are also important components for the City’s bicycle and pedestrian systems.

Parkway management is the responsibility of the Denver Department of Parks and Recreation and Denver Department of Public Works. Parks and Recreation maintains the landscaping while Public Works maintains the roadway. Parkways usually have a tree lawn between the curb and edge of a detached sidewalk which contain colorful flower beds and shade trees. Medians are typically landscaped adding to the park-like setting of the roadway. Some medians are wide enough to be used as linear parks for recreational uses.

Existing designated parkways within the travel shed are shown in Figure 15 and include Martin Luther King Jr. Boulevard, Montview Boulevard, Monaco Street Parkway, 6\textsuperscript{th} Avenue Parkway, Alameda Avenue, and Richthofen Place.

\begin{center}
\includegraphics[width=\textwidth]{monaco-street-parkway}
\end{center}

\textbf{Monaco Street Parkway in the East Side travel shed}

\textbf{Planned Roadway Projects}

Planned changes in the travel shed include additional roadways in the Lowry and Stapleton redevelopment areas and the addition of an interchange at I-70 and Central Park Boulevard. The Central Park Boulevard Interchange Project is located within Stapleton and will provide
Figure 15. Existing Parkways
additional access to I-70 and access to Northfield by a connection to Central Park Boulevard. Construction of the new interchange began June 2010 and is anticipated to be operational by November 2011. The planned location of the Central Park Boulevard Interchange is shown in Figure 16.

The I-70 East Environmental Impact Statement (EIS) is an environmental study to identify highway improvements along I-70 between I-25 and Tower Road that would alleviate safety, access, mobility and congestion issues. A segment of the EIS study area falls within the East Side travel shed. Alternatives for I-70 include adding general purpose lanes and tolled express lanes. The preferred alternative is scheduled to be recommended by early 2011.

3.5.2 Roadway Issues and Ideas

Quebec Street and Yosemite Street were identified as major north-south challenges for roadway mobility. Monaco Street Parkway was also identified as having challenges. Roadway mobility improvement ideas are shown in Figure 16.

Quebec Street is six lanes north of Martin Luther King Jr. Boulevard then drops to four lanes until reaching Montview Boulevard. Quebec Street then is reduced to two lanes between Montview Boulevard and 11th Avenue. A two-way-left-turn lane is added on Quebec Street from 11th Avenue to 6th Avenue Parkway. South of 6th Avenue Parkway, Quebec Street is increased to four lanes. The adding and dropping of lanes creates a bottleneck along Quebec Street for the entire length of the travel shed.

Yosemite Street also has a bottleneck between Montview Boulevard and 11th Avenue with two travel lanes. Both north and south of this area, Yosemite Street has four travel lanes.

The northbound and southbound travel lanes of Monaco Street Parkway are separated by approximately 75 feet of landscaped median. With the large median, Monaco Street Parkway has individual traffic signals for both the northbound and southbound traffic. Left turning vehicles can be stranded between the signals and queue into the through-travel lanes. This causes back-ups and inefficient operation of intersections.

3.5.3 Roadway Mobility Recommendations

Roadway recommendations include completing planned connections, and improving bottleneck areas on Quebec Street and Yosemite Street. Quebec Street is the most severe current vehicle mobility issue in the travel shed. Vehicle mobility improvement on Yosemite is a more long term consideration that would involve collaboration with the City of Aurora. Both corridors will require more in-depth assessment of alternatives.
Figure 16. Roadway Mobility Improvement Ideas

- Option: • Couplet System
- Options: • Widen Intersections • Reconfigure Roadway • Widen Roadway
- Improve Signals and Timing
- Improve Multimodal Connection

Local Roadway
2 - Lane Roadway
3 - Lane Roadway
4 - Lane Roadway
5+ Lane Roadway
Future Roadway
Future Interchange
Travel Shed Boundary
The basic ideas for the roadway system include improving signals and signal timing at intersections, improving multimodal north-south connections, and creating multimodal connections in developing areas. Recommendations for improving roadway mobility are shown in Figure 17 and include:

- Create a multimodal connection on Lowry Boulevard through Buckley Annex Redevelopment
- Continual monitoring of Monaco Street Parkway signal retiming, initially completed by CCD in Spring 2010 to improve efficiency
- Complete a multimodal connection on Yosemite Way from 1st Avenue to Lowry Boulevard
- Improve drainage on Quebec Street and Montview Boulevard
- Reconfigure Quebec Street between Leetsdale Drive and Alamed Avenue

Roadway reconfiguration options for Quebec Street, Syracuse Street and Yosemite Street were explored in the area in the middle of the travel shed. This area suffers from poor traffic flow and safety concerns stemming from constant congestion. Three generalized options were identified that may alleviate the traffic congestion, mainly in the north-south travel directions. These options include widening intersections, reconfiguring roadways, and widening roadways. These options would require significant study and design to implement.

Reconfigure Quebec Street between Alameda Avenue and Leetsdale Drive
Currently, Quebec Street between Leetsdale Drive and Alameda Avenue has one northbound and one southbound vehicle lane with an attached sidewalk along the west side of Quebec Street. The existing pavement is 36 feet wide, resulting in wider than typical 10-12 foot lanes. The existing pavement could be reconfigured to have one southbound vehicle lane and two northbound vehicle lanes with the inside lane being an optional left-through lane. Minor widening may be required in some areas and, therefore, may require small amounts of right-of-way acquisition. Improvements to the pedestrian and transit modes include construction of a sidewalk and bus waiting areas on the east side of Quebec Street, and adding crosswalks at bus waiting areas to access the sidewalk and neighborhoods on the west side of Quebec Street. The roadway cross-section is shown in Figure 18.
Create Yosemite Way Multimodal Connection

Improve Drainage on:
- Quebec St from 14th Ave to Montview Blvd
- Montview Blvd near Quebec St

Reconfigure Quebec St to 2-NB lanes and 1-SB lane from Leetsdale Dr to Alameda Ave

Improve Mobility on Colfax Ave from Monaco Pkwy to Yosemite St

Figure 17. Roadway Mobility Recommendations
Existing Quebec St

- Add Northbound Thru/Left Turn Lane
- Add Waiting Area at Bus Stops
- Add Crosswalks at Bus Stops
- Minor Widening Required in Some Areas
- Small Areas of ROW Acquisition Required

Option

Note: Perspectives Looking North.
3.6 Middle East Side Travel Shed

A subarea in the center of the travel shed was identified as having challenges with every mode of transportation being studied. The area is bordered by Montview Boulevard to the north, 11th Avenue to the south, Monaco Street Parkway to the west and Yosemite Street to the east.

3.6.1 Improvement Ideas

Preliminary solutions were identified that could improve mobility for multiple modes. Attention was given to improving the mobility on either Quebec Street, Syracuse Street, or Yosemite Street within the area of 11th Avenue to Montview Boulevard. Five possible solutions were evaluated:

- Widen nodes, not roads
- Maximize improvement within existing pavement
- Maximize improvements within existing right-of-way
- Improvements outside existing right-of-way
- One-way couplet

All potential options in the area require additional study and design before implementation.

Widen Nodes, Not Roads

The concept of widening nodes, not roads is based on the desire to add capacity to the roadways without requiring major purchases of right-of-way for roadway widening. Currently, left- and right-turning vehicles waiting for openings in cross directional traffic block the through lanes at intersections. Adding or extending turn lanes would remove the idling turning vehicles and allow through movements to continue. More vehicles would be served by the signal without needing drastic signal timing changes. The widen nodes, not roads areas are shown on Figure 19. Intersections believed to benefit from the concept of widening the nodes are shown on the map with adding or improving either the left turn lanes on one street, left turn lanes on both streets, or right and left turn lanes on both streets.

Maximize Improvements within Existing Pavement

The concept of maximizing improvements within existing pavement includes modifications to use the roadway pavement that already exists. This would involve restriping the roadway to create an alternative lane configuration. Minimal construction and right-of-way may be required for building sidewalks or multi-use paths only. Possible roadway cross-sections are discussed for each of the major north-south roadways and shown in Figure 20.

Quebec Street

Quebec Street, with an existing pavement width of 30 feet does not have any feasible options for reconfiguring the existing roadway. There is not enough pavement width to restripe the road to safely add bike lanes or a center two-way-left-turn lane. The only options would be to construct sidewalks on either side of the roadway, which would require minor construction.
Add Left Turn Lanes, One Street

Add Left Turn Lanes, Both Streets

Add Right and Left Turn Lanes, Both Streets

- Add Left Turn Lanes on Major Street
- Improve Pedestrian Crossings

- Add or Increase Length of Turn Lanes
- Improve Pedestrian Crossing

- Add or Increase Length of Turn Lanes
- Improve Pedestrian Crossing

Figure 19. Widen Nodes, Not Roads
Figure 20. Maximize Improvements within Existing Pavement

**Existing Quebec**

- 60' Right-of-Way

No Options for Quebec Street (except One-Way Couplet- see couplet concept)

- Could Add Sidewalks or Multi-Use Path Outside of Existing Pavement

**Existing Yosemite**

- 60' Right-of-Way

**Yosemite Options**

**Option 1**

- Add Center Turn Lane
- Remove On-Street Parking on Both Sides
- Add Wider Sidewalks

**Option 2**

- Remove On-Street Parking on One Side
- Add Wider Sidewalk and Multi-Use Path

**Existing Syracuse**

- 95' Right-of-Way

**Syracuse Options**

**Option 1**

- Add Bike Lanes on Both Sides
- Remove On-Street Parking on Both Sides

**Option 2**

- Add Bike Lanes on Both Sides
- Remove On-Street Parking on One Side

**Option 3**

- Add Center Turn Lane
- Remove On-Street Parking on Both Sides

Legend

- QUEBEC ST
- MONTVIEW BLVD
- YOSEMITE ST
- SYRACUSE ST
- MONACO ST PKWY
- 11TH AVE
- 14TH AVE
- 13TH AVE
- 17TH AVE

- Widen Nodes (add intersection turn lanes)

No Options for Quebec Street (except One-Way Couplet- see couplet concept)

- Could Add Sidewalks or Multi-Use Path Outside of Existing Pavement

- Remove On-Street Parking on Both Sides

- Add Bike Lanes on Both Sides

- Add Center Turn Lane
- Remove On-Street Parking on One Side
- Add Wider Sidewalk and Multi-Use Path

- Add Wider Sidewalks
- Remove On-Street Parking on One Side
- Add Wider Sidewalk and Multi-Use Path
**Syracuse Street**
Syracuse Street has an existing pavement width of 42 feet with on-street parking along both sides. Options for Syracuse Street could include reconfiguring the existing pavement to accommodate bikes or a center two-way-left-turn lane.

**Yosemite Street**
Yosemite Street has an existing pavement width of 42 feet with on-street parking along both sides. Yosemite Street could be reconfigured by removing parking on one side to accommodate a center two-way-left-turn lane, or a multi-use path could be added by reconstructing the existing narrow sidewalk.

**Maximize Improvements within Existing Right-of-Way**
The concept of maximizing improvements within existing right-of-way would use the right-of-way already owned by the City to construct a new roadway cross-section. Additional right-of-way would not be required but construction could temporarily impact access and, in some cases, could result in the roadway shifting closer to existing private residences and commercial buildings. Examples of possible roadway cross-sections are discussed for each of the major north-south roadways and shown in Figure 21.

**Quebec Street**
The existing right-of-way along Quebec Street is currently 60 feet wide with the pavement only 30 feet wide. Many options could be constructed within the right-of-way including adding a center two-way-left-turn lane, bike lanes, wider sidewalks, tree lawns or multi-use paths.

**Syracuse Street**
The existing right-of-way on Syracuse Street is 95 feet with the existing roadway pavement width of 42 feet. Multiple modal uses can be added to this segment of roadway including bike lanes, a center two-way-left-turn lane, or additional northbound and southbound vehicular travel lanes.

**Yosemite Street**
The existing right-of-way on Yosemite Street is 60 feet with the existing pavement width of 42 feet. Within this extra right-of-way, additions to the roadway could include larger sidewalks, bike lanes, or a center two-way left-turn lane.
Figure 21. Maximize Improvements within Existing Right-of-Way

**Quebec Options**

- **Option 1**
  - Add Bike Lanes on Both Sides
  - Add Center Turn Lane
  - Add Sidewalks on Both Sides

- **Option 2**
  - Add Center Turn Lane
  - Add Sidewalks on Both Sides with Tree Lawn

- **Option 3**
  - Add Center Turn Lane
  - Add Sidewalk on One Side
  - Add Multi-Use Path on One Side with Tree Lawn

**Syracuse Options**

- **Option 1**
  - Add Bike Lanes on Both Sides
  - Remove On-Street Parking on One Side
  - Add One Travel Lane in Each Direction
  - Add Center Turn Lane

- **Option 2**
  - Add Center Turn Lane
  - Add Sidewalk on One Side
  - Add Multi-Use Path on One Side with Tree Lawn

**Yosemite Options**

- **Option 1**
  - Add Bike Lanes on Both Sides
  - Remove On-Street Parking on One Side
  - Add Wider Sidewalks on Both Sides with Tree Lawn on Non-Parking Side

- **Option 2**
  - Add Center Turn Lane
  - Remove On-Street Parking on One Side
  - Add Wider Sidewalks on Both Sides

*All Options Shown for Quebec and Yosemite Could Also Fit Within Syracuse Right-Of-Way*

*All Options Shown for Quebec Could Also Fit Within Yosemite Right-Of-Way*
Improvements Outside Existing Right-of-Way

The concept behind improvements outside existing right-of-way involves widening the roadway outside of the existing right-of-way owned by the City. It would require the purchase of additional land adjacent to the roadway. If given the opportunity to use areas outside the existing right-of-way, many options for each Quebec Street, Syracuse Street and Yosemite Street are available. Some possible cross-sections are shown in Figure 22. All mobility mode challenges could be addressed with widening the roadway outside of the existing right-of-way. Property acquisitions would be required. The specifics were not determined since other issues must be researched in more detail, such as environmental issues and cost. These are all hypothetical cross-sections that were introduced for the purpose of alternative comparisons.

One-Way Couplet

As discussed earlier, one-way couplets are pairs of one-way streets that function as a single higher-capacity street. They are usually separated by one city block but may be separated by more. One-way couplets are designed to have a higher transportation capacity than an equivalent two-way street with fewer movements at intersections and better synchronization of traffic signals. The concept behind the one-way couplet is to maintain the existing pavement and to minimize additional right-of-way needs. The pair of roadways would be reconfigured within existing pavement. Minimal right-of-way and construction may be needed at the intersections of the entries and exits of the couplet system.

By converting an existing two-way street into a one-way street improved mobility is achieved allowing vehicles to pass slower moving or turning vehicles and pass buses stopped at transit stops. The number of conflicts for pedestrians, bicycles and vehicles at intersections is reduced. The amount of effective green time for each direction of travel can also be increased, thus allowing more vehicles to pass through intersections and reducing the queue of waiting vehicles. Vehicles making a left turn would not need to wait for a gap in opposing traffic to make the turning movement.

Both options discussed below would require modifications to the intersections to allow smooth flow into and out of the one-way couplet system. The eastbound and westbound roadways beginning and ending the couplet system may need reconfiguring. This would allow for easy transitions in and out of the couplet system and reduced potential for driver confusion.

Quebec Street and Syracuse Street

A possible one-way couplet system could be applied to Quebec Street and Syracuse Street, with Quebec Street taking southbound traffic and Syracuse Street taking northbound traffic. Possible roadway cross-sections for the Quebec Street and Syracuse Street couplet system can be seen in Figure 23.
Figure 22. Improvements Outside Existing Right-of-Way

Existing Syracuse

Option 1
- Add One Travel Lane in Each Direction
- Add Raised Median/Left Turn Lane
- Add Bike Lanes on Both Sides

Option 2
- Add One Travel Lane in Each Direction
- Add Raised Median/Left Turn Lane
- Add Frontage Road with Parking
- Add Multi-Use Paths on Both Sides with Tree Lawn on Non-Frontage Road Side

Option 3
- Add One Travel Lane in Each Direction
- Add Raised Median/Left Turn Lane
- Add Frontage Road with Parking
- Add Multi-Use Paths on Both Sides with Tree Lawn on Non-Frontage Road Side

Existing Quebec

Option 1
- Add One Travel Lane in Each Direction
- Add Raised Median/Left Turn Lane
- Add Multi-Use Paths on Both Sides with Tree Lawns

Option 2
- Add One Travel Lane in Each Direction
- Add Raised Median/Left Turn Lane
- Add Frontage Road with Parking
- Add Multi-Use Paths on Both Sides with Tree Lawn on Non-Frontage Road Side

Option 3
- Add One Travel Lane in Each Direction
- Add Raised Median/Left Turn Lane
- Add Frontage Road with Parking
- Add Multi-Use Paths on Both Sides with Tree Lawn on Non-Frontage Road Side

Existing Yosemite

Option 1
- Add One Travel Lane in Each Direction
- Add Raised Median/Left Turn Lane
- Add Bike Lanes on Both Sides
- Remove On-Street Parking on One Side
- Add Wider Sidewalks on Both Sides

Option 2
- Add One Travel Lane in Each Direction
- Add Raised Median/Left Turn Lane
- Add Frontage Road with Parking
- Add Multi-Use Paths on Both Sides with Tree Lawn on Non-Frontage Road Side

Option 3
- Add One Travel Lane in Each Direction
- Add Raised Median/Left Turn Lane
- Add Frontage Road with Parking
- Add Multi-Use Paths on Both Sides with Tree Lawn on Non-Frontage Road Side

NOTE: Additional Turn Lanes at Intersections would be provided with all Options
NOTE: All perspectives looking North.

Pavement widening may be needed north of 23rd Ave, south of 11th Ave, at intersections and along 23rd Ave and 11th Ave.

Option 1
- Add SB Vehicle Lane
- Add SB Bike Lane
- Add Wider Sidewalks on Both Sides
- Remove NB Vehicle Lane

Option 2
- Add NB Vehicle Lane
- Add NB Bike Lane
- Remove SB Vehicle Lane
- Remove On-Street Parking on One Side

Option 3
- Add NB Vehicle Lane
- Remove On-Street Parking on Both Sides

Option 1
- Add NB Vehicle Lane
- Add NB Bike Lane
- Remove On-Street Parking on One Side

Option 2
- Add NB Vehicle Lane
- Add NB Bike Lane
- Remove On-Street Parking on Both Sides

Option 3
- Add NB Vehicle Lane
- Remove SB Vehicle Lane

One-way couplet option added for NB Quebec St/SB Oneida St.
All Syracuse Options apply to Oneida.

Legend
- Intersection Reconstruction Required to Improve Traffic Flow
- Roadway Reconfiguration Required
- Roadway Widening May Be Required

NOTE: All perspectives looking North.
Pavement widening may be needed north of 23rd Ave, south of 11th Ave, at intersections and along 23rd Ave and 11th Ave.
**Oneida Street and Quebec Street**

Oneida Street and Quebec Street with Oneida Street taking southbound traffic and Quebec Street taking northbound traffic. The Oneida Street and Quebec Street couplet option was added in response to the comments received during the public involvement process.

### 3.6.2 Alternative Screening

With the numerous options that could be applied to the roadways a two-tier screening process was conducted. This allowed options with fatal flaws to be eliminated and focus could be directed to options that are more feasible. With the input from the community, a set of screening themes was created. These were only applied to the options for the area in the middle of the travel shed.

**Tier 1 Screening**

The major themes for Tier 1 Screening include:

1. No on-street bikes on Quebec Street (unless a one-way couplet is implemented)
2. Bike improvements on Yosemite Street and Syracuse Street should be included to fill a system gap
3. Parking on Yosemite Street and Syracuse Street should be retained, at minimum on one side
4. Adding capacity to Syracuse Street alone does not fulfill system connectivity
5. Widen nodes, not roads concept should be packaged with the other options
6. One-way couplet options should be carried farther north to 23rd Avenue

Two options were combined based on the major themes for Tier 1:

- Widen nodes, not roads was combined with all remaining improvements within existing pavement and improvements within existing right-of-way options
- The one-way couplet options for were extended farther north to 23rd Avenue

As part of the screening process additional options were added in response to community input:

**One-Way Couplet**

- Add Quebec Street/Oneida Street one-way couplet

**Improvements Outside Right-of-Way**

- Quebec Street option to widen roadway only to the west
- Yosemite Street option to widen roadway only to the west

The following cross-section options have been removed on the Tier 1 major screening themes listed above:

- Maximize improvements within existing pavement
  - Syracuse options in conflict with Tier 1 Screening, criterion 3
  - Yosemite option in conflict with Tier 1 Screening, criterion 3
One-Way Couplet

- Syracuse option that conflicted with Tier 1 Screening, criterion 3
- Syracuse option in conflict with Tier 1 Screening, criterion 2

Maximize Improvements within existing right-of-way

- Quebec option in conflict with Tier 1 Screening, criterion 1
- Syracuse option in conflict with Tier 1 Screening, criterion 4
- Yosemite option in conflict with Tier 1 Screening, criterion 2

Improvements Outside Right-of-Way

- Syracuse option in conflict with Tier 1 Screening, criterion 4

Tier 2 Screening

The Tier 2 Screening involved ranking the remaining options. Options were given a ranking from 'least desirable' (1) to 'most desirable' (5). Options were ranked against each other by corridor (Quebec, Syracuse, and Yosemite) using five categories: right-of-way, capital cost, capacity, connectivity, and environmental issues.

Right-of-Way Area and Number of Parcels

The right-of-way screening considered the amount of area and number of parcels. Options were given a more desirable ranking for those that required less land area and fewer parcels to be acquired. The ranking scores were then averaged for each option.

Cost

The elements considered under the cost screening category were construction and right-of-way costs. The rankings were not based on actual costs but on an order of magnitude. Options that required large-scale roadway construction for implementation received a least desirable ranking. Options that required more expensive right-of-way acquisition costs were also given a least desirable ranking. Right-of-way costs are discussed in more detail below. The ranking scores were then averaged for each option.

The right-of-way cost options were evaluated based on property values of adjacent land which may potentially be acquired for each option. The property values were estimated based on Denver, Arapahoe and Adams counties 2010 assessor property information. Options with improvements to Syracuse Street and Oneida Street assume improvements would be within existing right-of-way and not require right-of-way acquisitions. Single family parcels were assumed to be fully acquired during the preliminary right-of-way cost calculations.

For this preliminary cost calculation, it was assumed that a 120-foot right-of-way boundary was needed along both Quebec Street and Yosemite Street. Based on readily available information from City land use maps, average value of land was determined on each sides of the roadway. This analysis did not include a detailed appraisal of property values, but provided a high level of analysis.
Quebec Street - Between 6th Avenue and Montview Boulevard:
- The west side of Quebec Street has an estimated average value of $34 per square foot of land
- The east side of Quebec Street has an estimated average value of $18 per square foot of land

Yosemite Street - Between 11th Avenue and Montview Boulevard:
- The west side of Yosemite Street has an estimated average value of $22 per square foot of land
- The east side of Yosemite Street has an estimated average value of $15 per square foot of land

**Capacity Benefit**
The capacity benefit screening category was used to compare how options would increase capacity for all modes of transportation including vehicles, transit, bicycles, and pedestrian. Options that added the most capacity for each mode received a 'most desirable' ranking. The ranking scores for capacity benefit were then averaged for each option.

**Connectivity**
The connectivity screening compared four elements: bike, pedestrian, vehicle, and transit. Options were ranked based on improvements of connectivity to the existing transportation system, including existing bike lanes, sidewalks, transit routes and roadway system. Options that created or continued a connection for a more complete system received a 'most desirable' ranking. The ranking scores were averaged for each option.

**Environmental**
The potential environmental conflict assessments used a high-level fatal flaw evaluation. This provides compliance with National Environmental Policy Act (NEPA) requirements to consider environmental effects early in the planning process. NEPA compliance is required where a federal action is requested. No federal actions have been identified for East Side projects, but ensuring compliance as the project continues will eliminate or minimize any work to be redone. The results of the evaluation indicate that the scenarios with improvements located within existing pavement scored highest with a 'most desirable' ranking. Improvements outside existing pavement but within existing right-of-way, scored slightly lower. The scenarios where improvements would be located outside existing pavement and right-of-way scored as 'least desirable.' Some resources are less likely to be affected by the possible options than others. Paleontological, wildlife, vegetation, wetlands and waters of the US, floodplains, geology/soils and farmland resources are unlikely to be significantly affected by any of the options. Socioeconomics, environmental justice, land use, historic preservation, parks and open space, air quality and noise were more likely to be affected by the options. As a result, the improvements that extended beyond existing right-of-way were rated as 'less desirable.'
Removed Options

As a result of the Tier 2 Screening process, the following cross-section options were removed:

Maximize Improvements within Existing Right-of-Way
- Quebec option under Tier 2 screening, higher cost and property impacts
- Yosemite option under Tier 2 Screening, higher cost and property impacts

Improvements Outside Right-of-Way
- Quebec Option under Tier 2 Screening, higher cost and property impacts
- Quebec Option under Tier 2 Screening, higher cost, environmental and property impacts
- Yosemite option under Tier 2 Screening, higher cost and property impacts

3.6.3 Retained Options

Potential roadway cross-sections that were not eliminated during the screening process were retained and presented to both the task force and the community during the third public workshop for comments.

Retained Options for Quebec Street

Three options were retained for Quebec Street. Possible roadway cross-sections for Quebec Street are shown in Figure 24.

Quebec Option for One-Way Couplet (see Retained Options for One-Way Couplet)
The first option involves a lower footprint and lower cost option of converting Quebec Street to a one-way couplet system with Syracuse Street and is discussed below in the Retained Options for One-Way Couplet subsection.

Quebec for Lower Footprint and Cost Option
The second option for Quebec Street involves a lower footprint and lower cost option where the pavement of Quebec Street is widened within the existing right-of-way. The purchase of right-of-way will not be needed but sections of front yards along Quebec Street would be impacted. This option adds a center two-way-left-turn lane, curb and gutter, and sidewalks on both sides of the street. Intersections would be widened at major crossings to add turn lanes where needed and pedestrian crossings would be improved, therefore likely requiring purchase of right-of-way near the intersections.

Quebec Option for Higher Footprint and Cost Option
The third option for Quebec Street is a higher footprint and higher cost option. This would involve a full widening of Quebec Street to the east side, and would require acquisition of right-of-way along the entire length of the widening. There are numerous cross-section possibilities including adding vehicle travel lanes, raised center medians, off-street multi-use paths for pedestrians and bikes with tree lawns buffers, or even a frontage road with parking.
**Option 1, Lower Footprint and Cost Option**

- Add Center Turn Lane
- Add Sidewalks on Both Sides
- Widen Intersections at Major Crossings, including Improved Pedestrian Crossings

**Option 2, Higher Footprint and Cost Option**

- Add One Travel Lane in Each Direction
- Add Raised Median/Left Turn Lane
- Add Frontage Road with Parking
- Add Multi-Use Paths on Both Sides with Tree Lawn on Non-Frontage Road Side

*Note: Perspectives Looking North. Also Refer to One-Way Couplet Option.*

**Figure 24. Retained Options for Quebec Street**
Retained Options for Syracuse Street

Two options were retained for Syracuse Street. One possible roadway cross-section for Syracuse Street is shown in Figure 25.

Syracuse Option for One Way Couplet (see Retained Options for One-Way Couplet)
The first option for Syracuse Street is converting to a one-way couplet system with Quebec Street. This option is discussed below in the Retained Options for One-Way Couplet subsection.

Syracuse Option for Low Footprint and Cost Option
The second option is a relatively low footprint and low cost option. The retained option for Syracuse Street involves reconfiguring the existing pavement on Syracuse Street, so right-of-way acquisition is not needed except at intersections. The option removes on-street parking from one side of the roadway and uses the additional roadway to add bike lanes in both directions. Intersections would be widened at major crossings to add turn lanes where needed and pedestrian crossings would be improved.

Retained Options for One-Way Couplet: Quebec Street and Syracuse Street

The roadway cross-sections for both southbound Quebec Street and northbound Syracuse Street are shown in Figure 26.

The one-way couplet option uses the existing pavement of Quebec Street and Syracuse Street and converts both two-directional streets into separate one-directional streets. Quebec Street would become southbound only from 23rd Avenue to 11th Avenue and Syracuse Street would become northbound only from 11th Avenue to Montview Boulevard. Intersections at the beginning and end of the couplet system would require reconstruction to offer a smooth transition in and out of the couplet and to eliminate any driver confusion. Acquisition of right-of-way may be needed at these intersections. Existing Quebec Street pavement would be reconfigured to provide two southbound vehicle lanes, one southbound on-street bike lane and sidewalks on both sides of the road. Existing Syracuse Street would be reconfigured. On-street parking would be removed from one side only, two northbound vehicle lanes and a northbound on-street bike lane would be added.
• Add Bike Lanes on Both Sides
• Remove On-Street Parking on One Side
• Widen Intersections at Major Crossings, including Improved Pedestrian Crossings

Note: Also Refer to One-Way Couplet Option.

Figure 25. Retained Options for Syracuse Street
Figure 26. Retained Options for One-Way Couplet: Quebec Street and Syracuse Street

**Existing Quebec Street**
- 2 SB Vehicle Lanes
- 1 SB Bike Lane
- Wider Sidewalks on Both Sides
- 23rd Ave to 11th Ave

**Option 1 (southbound)**
- Existing Pavement

**Existing Syracuse Street**

**Option 1 (northbound)**
- 2 NB Vehicle Lanes
- 1 NB Bike Lane
- Remove On-Street Parking on One Side
- 11th Ave to Montview Blvd

**Note:** Perspectives Looking North.
Retained Options for Yosemite Street

Two options were retained for Yosemite Street. Possible roadway cross-sections for Yosemite Street are shown in Figure 27. Improvements on Yosemite Street would require agreements with the City of Aurora.

Yosemite Option for Lower Footprint and Cost Option
The first option is a lower footprint and lower cost option. All improvements are completed within the existing right-of-way. On-street parking is removed on one side only and the space is converted to a multi-use path. A wider sidewalk is added to the other side. Intersections would be widened at major crossings to add turn lanes where needed and pedestrian crossings would be improved. Minor right-of-way acquisition may be required for intersection improvements.

Yosemite Option for Higher Footprint and Cost Option
The second option is a higher footprint and higher cost option. This option widens Yosemite Street to the west and would include right-of-way acquisition along the length of the widening. Addition of vehicle lanes, raised medians, multi-use paths or sidewalks, tree lawns, or a frontage road with parking are all options for the cross-section.
• Remove On-Street Parking on One Side
• Add Wider Sidewalk on One Side and Multi-Use Path on Other Side
• Widen Intersections at Major Crossings, including Improved Pedestrian Crossings

- Building and Full Property Acquisition Required

Option 2, Higher Footprint and Cost Option

• Add One Travel Lane in Each Direction
• Add Raised Median/Left Turn Lane
• Add Frontage Road with Parking
• Add Multi-Use Paths on Both Sides with Tree Lawn on Non-Frontage Road Side

Figure 27. Retained Options for Yosemite Street
4.0 NEXT STEPS

The results of the East Side Mobility Plan are defined in two tiers:

1) Recommendation for mobility improvements throughout the travel shed
2) Defined next step for additional study of mobility improvement options in the area between 11th and 23rd Avenues

Throughout Travel Shed

The East Side Mobility Plan presents the opportunity for a wide range of improvements. Implementation of improvements depends on many considerations. These considerations include whether the recommendation can be implemented as a stand-alone project or should be packaged with other improvements, relative cost, intensity of design, and potential funding opportunities. Less intensive and lower cost improvements could be funded through the City’s annual maintenance program, while others may require programming in the City’s capital improvement program. Outside funding sources may also be required. Some recommendations include more in-depth regulatory review, permitting and compliance.

Middle East Side Travel Shed

The East Side Mobility Plan provides a framework for further assessment of options for improving safety and efficiency of multimodal transportation in this sub-area. Further assessment will provide more in-depth schematic planning of potential options and will allow more comprehensive comparison of estimated costs, impacts, and mobility benefits. This next step study will include additional community outreach and collaboration with the City of Aurora, the Colorado Department of Transportation and the Federal Highway Administration.

Project Funding, Design and Construction

The improvements defined in the East Side Mobility Plan will be evaluated, prioritized and scheduled as funding becomes available through existing City and County budgeting processes and as other sources of funding are identified and secured. Future funding will cover the costs to refine the proposed projects, obtain the required clearances and permits needed for each project, prepare final design and construction bid documents for the projects, and to construct and maintain the improvements. Many projects may be implemented early, simply, and inexpensively, but others may not be implemented for several years. Every year, project funding availability, project costs, and the need for specific projects will be analyzed in a project priority process implemented by the City and County of Denver.