Appendix: Summary of Public Involvement Activities
Colfax Corridor Connections Public Meeting Summary
At each study phase, the same information and opportunities for public involvement were provided at dual meetings in Denver and Aurora. Public meetings were conducted on the following dates:

Monday, October 1, 2012: Study Kickoff/Public Scoping – Aurora Public Meeting #1
5:30 p.m. to 7:30 p.m.
The University of Colorado Anschutz Medical Campus
Tri-Visible Conference Room, Research Building 2, 2nd floor
12700 East 19th Avenue, Aurora, CO 80045
Approximately 21 attendees

Thursday, October 4, 2012: Study Kickoff/Public Scoping – Denver Public Meeting #1
5:30 p.m. to 7:30 p.m.
Knights of Columbus Hall
1555 Grant Street, Denver, CO 80203
Approximately 58 attendees

Wednesday, February 27, 2013: Alternatives Analysis – Denver Public Meeting #2
6 p.m. to 8 p.m.
Knights of Columbus Hall
1555 Grant Street, Denver, CO 80203
Approximately 56 attendees

Thursday, February 28, 2013: Alternatives Analysis – Aurora Public Meeting #2
6 p.m. to 8 p.m.
North Middle School
12095 Montview Boulevard, Aurora, CO 80010
Approximately 46 attendees

Tuesday, August 26, 2014: Preliminary Locally Preferred Alternative – Denver Public Meeting #3
5:30 p.m. to 7:30 p.m.
Knights of Columbus Hall
1555 Grant Street, Denver, CO 80203
Approximately 71 attendees

Wednesday, August 27, 2014: Preliminary Locally Preferred Alternative – Aurora Public Meeting #3
5:30 p.m. to 7:30 p.m.
North Middle School
12095 Montview Boulevard, Aurora, CO 80010
Approximately 33 attendees
Meeting Summary  
Colfax Corridor Connections Community Task Force Meeting #1  

Thursday, September 27, 2012  
5:30 – 7:30 p.m.  
Johnson & Wales University  
President’s Boardroom  
7150 Montview Boulevard  
Denver, CO  80220  

MEETING GOALS  
• Overview of the Colfax Corridor Connections study  
• Understanding roles/expectations for the Task Force  
• Begin identifying mobility issues in the study area  

AGENDA  
1. Welcome  
2. Introductions  
3. Community Task Force roles/expectations  
4. Project overview  
   a. Presentation  
   b. Q&A  
5. Mobility issues exercise  
6. Public comment period  
7. Wrap-up and next steps  
   a. Public Meetings October 1 (in Aurora) and 4 (in Denver)  
   b. Next Task Force meeting will be in November 2012  

HANDOUTS  
• Meeting agenda  
• Colfax Corridor Connections fact sheet  
• Colfax Corridor Connections FAQ  
• Colfax Corridor Connections Purpose and Need statement  
• Colfax Corridor Connections Evaluation Criteria handout  
• Colfax Corridor Connections Task Force charter agreement  
• Presentation handout
MEETING OVERVIEW

Community Task Force roles and expectations:
Terry Ruiter, Colfax Corridor Connections project manager, presented the project overview, including background information and a high-level overview of the study process and objectives.

Michele Ames, public involvement consultant, initiated the presentation, outlined the roles and responsibilities of the Community Task Force and introduced the components of the charter agreement that was completed by participants and submitted to the project team.

Project overview:
Tim Baldwin, consultant project manager, presented the project overview, including background information, the project’s purpose and need, schedule and the kickoff/public notification process. A summary of the Alternatives Analysis/Environmental Assessment and National Environmental Policy Act (NEPA) process was provided, along with an overview of the Colfax Corridor Connections evaluation criteria, methodology and key issues.

Tim Baldwin provided a description of the Colfax Corridor Connections study area and the current and projected demographics within the study area. It was also noted that the East Colfax corridor has the highest ridership of entire RTD system – 30,000/day (total boardings) and projected to be 39,000/day by 2035 (Streetcar Feasibility Study).

Question & Answer session:
Following the project overview presentation, Task Force representatives asked the following questions to the project team:

- Question: What’s driving the large increase in the projected RTD ridership? (Hilarie Portell, The Fax Partnership)
  
  Answer: The projected increase in ridership is primarily driven by economic development and growth, but overall population growth continues to increase ridership as well.

- Question: When will there be discussion of the project’s Evaluation Criteria? (Joel Nobel, Inter-Neighborhood Cooperation)
  
  Answer: Evaluation Criteria will be reviewed and discussed during the current (Scoping) phase.

Mobility issues exercise:
Task Force representatives and the project team gathered around a large (12’) roll-plot map to identify and document transportation challenges and opportunities that exist within the East Colfax corridor.

The following themes/concerns emerged during the discussion:

- Pedestrian mobility needs to be a priority because areas of the corridor have poor pedestrian accessibility, e.g. sidewalks on Colfax are often too narrow and increased bike capacity is needed.
• Accessibility and safety were identified as important components for each segment of the corridor – visibility and safety issues exist throughout the corridor and it can be difficult to get to/from the study area.

• Bus stops and the buses themselves need to be attractive, safe, clean, comfortable and properly maintained – perception of existing transit experience creates challenges to increased ridership.

• All bus and bike routes and route maps should be complete and up-to-date to emphasize connectivity and how the system interacts – several areas of the corridor are isolated by physical/geographic and social factors.

• Clarification that Colfax Corridor Connections is a study and not a project (including construction) will continuously need to be emphasized; along with a clear message about the implementation plan and funding options.

• Although the study area is an urban environment, Colfax Corridor Connections should consider environmental factors, such as trees, water and air quality.

• Many related projects and other studies have been conducted in the area and should be integrated with Colfax Corridor Connections.

• Don’t want to lose strengths and character of Colfax – great grid streets, street character and bus service.

• Challenge of Main Street Zoning with Federal Highway and commuter corridor – consider declassification of Colfax as a federal highway.

Public comment period:
All Community Task Force meetings are open to the public; however, no members of the general public were present at the Task Force meeting on Thursday, September 27, 2012.

Wrap-up and next steps:
Michele Ames outlined the Public Involvement process for the project with an emphasis on the first/scoping phase, including the Community Task Force and public meetings that will be held in Aurora on October 1st and in Denver on October 4th.
ATTENDEES

Project Team:
- Terry Ruiter: City and County of Denver
- Tim Baldwin: Steer, Davies, Gleave
- Shari Frank: Steer, Davies, Gleave
- Genevieve Hutchison: RTD
- Huiliang Liu: City of Aurora
- Melissa Rosas: Apex Design
- Scott Epstein: Pinyon Environmental
- Anna Jones: PUMA
- Deana Swetlik: Entelechy
- Andy Mountain: GBSM
- Michele Ames: GBSM
- Miles Graham: GBSM

Community Task Force Representatives:
- Andy Mendelsberg: East High School
- Anne Lindsey: Golden Triangle Association
- Aylene McCallum: Downtown Denver Partnership
- Dave Walstrom: Colfax on the Hill
- Hilarie Portell: The Fax Partnership
- Joel Noble: Inter-Neighborhood Cooperation
- Lisa Shusko: La Alma/Lincoln Park Neighborhood Organization
- Margie Valdez: Cultural Arts Residential Organization
- Rich Maginn: Curtis Park Neighbors
- Shannon O’Connell: Greater Park Hill Community, Inc.
- Veronica Barela (*alternate in attendance*): Santa Fe Drive Redevelopment Corp./NEWSED
Meeting Summary
Colfax Corridor Connections – Community Task Force Meeting #2

Thursday, November 8
5:30 p.m. – 7:30 p.m.
Johnson & Wales University
President’s Boardroom
1900 Olive Street, Denver, CO 80220

Meeting Goals
• Understand public input to date
• Hear results of and provide input on initial screening of technologies
• Learn about next steps in evaluation process

Agenda
• Welcome & Introductions
• Overview of public meeting feedback
• Reminder of project overview and process
• Presentation of initial technology screening results
  • Evaluation criteria and process
  • Technologies evaluated
  • Routes assessed
  • Screening results
• Overview of next steps in screening process
• Public comment period (3 minutes per speaker)
• Wrap-up and next steps
  • Next Task Force meeting and Public Meetings in January-February timeframe

Handouts
• Meeting agenda
• Colfax Corridor Connections Evaluation Framework Fact Sheet
• Colfax Corridor Connections Vehicle Technology Fact Sheet
• Presentation handout
Meeting Overview

Overview of public meeting feedback
Michele Ames, Colfax Corridor Connections public involvement consultant, provided a high-level overview of the community input received throughout the Public Scoping phase. Public workshops were held on October 1 and 4, 2012, with nearly 100 participants providing more than 125 comments over the course of two evenings. Some common themes identified by the public at the initial meetings were:

- The East Colfax corridor is increasingly congested for all modes (bus, vehicle, pedestrian, etc.) and this project is needed.
- Transit stations and vehicles should be safe, clean, comfortable and easy to access.
- Although the study area is an urban environment, the study should consider environmental factors, such as trees, water and air quality.
- Many related projects and studies have been conducted in the area and Colfax Corridor Connections should consider and build off them.
- It is important to maintain the unique character of Colfax and consider how transit users, pedestrians, bicyclists and drivers access the corridor and move within it.

Reminder of project overview and process
Tim Baldwin, Colfax Corridor Connections consultant project manager, presented a high-level summary of the study to remind participants of the project purpose, process and schedule.

Presentation of initial technology screening results
Tim Baldwin provided information regarding the initial analysis of potential alternatives, referred to as “Screen 1.” The presentation included an overview of the evaluation process and criteria, technologies evaluated, routes assessed and the results of Screen 1.

- **Evaluation criteria and process**
  Tim Baldwin provided a summary of the Evaluation Criteria and pass/fail approach applied to the Screen 1 evaluation process.

- **Technologies evaluated**
  Tim Baldwin provided a summary of the types of technologies evaluated during Screen 1. This portion of the presentation included summaries of technology options that could be applied in congested urban roadway corridors such as Colfax. Specific examples were given for traditional and non-traditional mode/technology options, as well as alternative transportation strategies.

- **Routes assessed**
  Tim Baldwin provided a summary of all the routes considered during the Alternatives Analysis. This portion of the presentation provided maps of all route and alignment options. An overview for each route/alignment option was also provided for each technology option.
**Screening results**

Tim Baldwin provided the findings of Screen 1. The analysis was presented using the Screen 1 evaluation matrix that reflects the results for each technology. A description of the reasoning and decision methodology for each pass/fail selection was provided for all evaluated technologies. Example cites and transportation systems were also referenced for specific technologies.

The technologies that will be carried forward are:
- Enhanced Bus
- Bus Rapid Transit (BRT)
- Light Rail
- Modern Streetcar

The technologies not carried forward include:
- Roadway Expansion
- Commuter Rail
- Heavy Rail
- MagLev
- Monorail
- Automated Guideway Transit
- Personal Rapid Transit
- Gondola

The technologies that will be carried forward were then evaluated with potential route options to develop 18 technology-route packages. These preliminary recommendations are identified in the table below:

<table>
<thead>
<tr>
<th></th>
<th>Colfax</th>
<th>17th</th>
<th>20th/Montview</th>
<th>13th/14th entire corridor</th>
<th>13th/14th – Colfax east of Quebec</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enhanced Bus</td>
<td>✔</td>
<td>✔</td>
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<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Bus Rapid Transit</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Modern Streetcar</td>
<td>✔</td>
<td>✔</td>
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<tr>
<td>Light Rail</td>
<td>✔</td>
<td>✔</td>
<td>✗</td>
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<td>✔</td>
</tr>
</tbody>
</table>
Overview of next steps in screening process
Tim Baldwin provided an overview of the next steps in the screening process. The goal for the upcoming Screen 2 analysis is to get from the 18 current packages in Screen 1, to 4 packages in Screen 2. The Screen 2 analysis includes evaluation of the full packages of options that includes bike/pedestrian improvements, signal prioritization and other components.

Question, comment & response session:
Throughout the presentation, Task Force representatives asked the following questions and discussed these issues with the Colfax Corridor Connections project team:

- **Comment:** The lines for light rail and streetcar tend to be easily blurred, what is the difference in the Colfax Corridor Connections definition between light rail and streetcar? (John Fernandez, City of Aurora)
  - **Response:** The primary difference is that shared roadway, as well as semi-exclusive and exclusive right of way is common for streetcar and much more uncommon for light rail, which mainly utilizes only semi-exclusive and exclusive right of way. Additionally, streetcar vehicles tend to operate independently, whereas three to four light rail cars are commonly linked together.

- **Comment:** The Streetcar Feasibility Study included significant analysis of considerations such as quality of life and business development. That type analysis was powerful and those factors are important and should be considered. Also, there is much more certainty regarding route destinations for rail options, whereas buses have routes that go all over the city and are difficult to track. Will Colfax Corridor Connections evaluate the same factors as the Streetcar Study? (Joyce Reitman, Bellevue-Hale Neighborhood Association)
  - **Response:** The primary focus of this study is to identify solutions that will improve transit and mobility to meet the forecasted transportation demand within the corridor. That said, Colfax Corridor Connections will certainly consider economic factors as it relates to the Alternatives Analysis.

- **Comment:** It is alarming to see mass transit routes taken off the city’s main streets, so for the record, economic development must be considered for all transportation projects. (Hilarie Portell, The Fax Partnership)
  - **Response:** Correct. Transportation improvements and economic development will be evaluated together. That is part of the process and the Task Force’s interest in this issue is why Technical Working Group members like David Gaspers from the City and County of Denver’s Community Planning and Development department are involved and attending this meeting.

- **Comment:** Colfax runs right through the heart of both Denver and Aurora and the route identified directly on Colfax seems to make the most sense. (Stephanie Salazar, Colfax Business Improvement District)
  - **Response:** The study must look at all reasonable alternatives to meet Federal Transit Administration (FTA) criteria. These early phases of the study must consider all viable routes and it doesn’t mean they will or will not be part of the ultimately preferred alternative. Additionally, consideration of all the route options allows for package
solutions to be developed that include various modes, such as bus/rail on Colfax and bike/pedestrian improvements on 16th/17th. In fact, the project team expects the solution will ultimately be a combination of options to create the preferred alternative.

• Comment: I agree with the concept that the ultimate preferred alternative should and will include various routes and technologies in a complete package. (Joel Noble, Curtis Park Neighbors/Inter-Neighborhood Cooperation)
  o Response: Although this is a complex process, this type of Alternative Analysis project usually does ultimately identify a package of options as the Locally Preferred Alternative. In fact, the next public meeting won’t be scheduled until after the Screen 2 analysis so that some packages can be evaluated and presented in early 2013.

• Comment: A methodology question, does the scope of this study allow you to conduct traffic engineering and integrate it with the capacity improvements that will be identified? Using the Lincoln/Broadway couplet example for Bus Rapid Transit (BRT), have any comparable combinations of roadway changes been identified? (John Fernandez, City of Aurora)
  o Response: Colfax Corridor Connections will look at options like the Broadway/Lincoln BRT, but nothing like that has been fully evaluated yet for the Colfax corridor. Lots of public input identified the 15/15L as being great because of the frequency, but those lines can be slowed down by traffic, fare transactions and other delays. The 13th and 14th couplet has been looked at and will continue to be evaluated along with various travel management strategies, such as signal prioritization.

• Comment: It is important to include the dotted lines on the route option maps because it reflects the flexible and comprehensive nature of the study. Additionally, a Golden Triangle neighborhood plan is being developed and it should be integrated in the Colfax Corridor Connections study. (Anne Lindsay, Golden Triangle Association)
  o Response: This analysis reflects the FTA criteria that require all route (and technology) options be thoroughly considered. Please notify the project team when the Golden Triangle work is complete and the team will follow up on the neighborhood plan.

• Comment: Will the evaluation take into consideration the non-technical or psychological aspects of various technologies? Examples include perceived transit experience, beautification and general biases. (Joyce Reitman, Bellevue-Hale Neighborhood Association)
  o Response: Those psychological factors, such as the perceived preferences of rail have been historically identified and the analysis does attempt to factor it in although qualitative measures can be difficult to measure. In Denver, a good example is the effect on Santa Fe bus ridership in comparison to light rail service. Data has shown a preference to the light rail experience. However, the problem within the Colfax corridor isn’t increasing ridership – because the bus routes are already full – but providing increased capacity. The focus of this study is to identify the best solution for meeting the forecasted travel demands.

• Comment: There are certain criteria that go beyond the basic psychological factors. For example, ride quality, in that riders who could otherwise drive are willing to pack light rail cars
because the ride is smoother than bus with fewer stops. (Joel Noble, Curtis Park Neighbors/Inter-Neighborhood Cooperation)
  o Response: Absolutely, and those factors are certainly considered as the differences between technologies are evaluated.

• Comment: Have there been case studies that look at increasing transit frequency versus adding new technology to provide more capacity? Initial capital investments will obviously be considered for new modes, but long-term maintenance and operating costs should also be considered. For example, over time will streetcar have a longer life than buses? (Stephanie Salazar, Colfax Business Improvement District)
  o Response: The frequency of service isn’t as relevant as mode because of financial limits. Buses generally have 15 year life spans and light rail/streetcar have roughly 30 year life. With operating cost at roughly 80% of total cost. This life cycle analysis is definitely factored in during the more detailed analysis phase of the project to determine where the balance points are for initial investment versus operations. The study won’t unduly focus on this, but it absolutely is considered.

• Comment: Given the highly technical nature of certain aspects of this analysis, whenever possible, the terminology should be presented in lay-person terms or include clear definitions up front. Also, including trip length with the technology-route packages would help to provide a frame of reference. It would be helpful to start each meeting with a high-level summary of Purpose and Need, project schedule, status and next steps. (Anne Lindsay, Golden Triangle Association) (Hilarie Portell, The Fax Partnership)
  o Response: Those are terrific points and exactly the type of feedback that helps the project team develop materials for the public meetings. This very detailed level of technical analysis is not intended for the general public, but presented to the Task Force to provide a deeper understanding of the study. All the evaluation information will be made available in the technical report for Colfax Corridor Connections.

• Comment: Some urban environments (such as New York City and Washington DC) have subway/heavy rail and we should be careful when explaining why it works there and is not carried forward here. Those technologies will certainly fail in Screen 1, but care should be taken to show it doesn’t fail in the wrong area. (Huiliang Liu, City of Aurora)
  o Response: Certainly, subway could be done, but the Purpose & Need dictates certain decisions, such as environmental impacts, frequency of stops, cost, etc. The subway example is a good one because the impacts of implementation quickly identify heavy rail as infeasible for the Colfax corridor.

• Comment: How far ahead are the growth and capacity forecasts used for Colfax Corridor Connections based on? (Lisa Shusko, La Alma/Lincoln Park Neighborhood Association)
  o Response: The DRCOG modeling used for this study uses forecasts for 2035, which is about as far forward as can be accurately evaluated.

• Comment: Including forecast ranges for high growth and low growth scenarios might also help to define viability of various technologies in terms of how this complex information is presented. (Anne Lindsay, Golden Triangle Association)
Response: The FTA modeling process requires strict adherence to certain quantitative guidelines, but there are various adaptations that can be made in presenting that information to make it easier to understand.

Public comment period (3 minutes per speaker)
All Community Task Force meetings are open to the public; however, no members of the general public were present at the Task Force meeting on Thursday, November 8, 2012.

Wrap-up and next steps
The next Task Force meeting will be scheduled in advance of the Phase 2 public meetings in early 2013 (January-February). Materials from this Task Force meeting will be made available on the project website: www.ColfaxCorridorConnections.com.

ATTENDEES

Project Team:
- Terry Ruiter: City and County of Denver
- Tim Baldwin: Steer, Davies, Gleave
- Genevieve Hutchison: RTD
- Huiliang Liu: City of Aurora
- John Fernandez: City of Aurora
- Michele Ames: GBSM
- Miles Graham: GBSM

Community Task Force Representatives:
- Anne Lindsey: Golden Triangle Association
- Bill Gondrez: Stapleton Foundation Be Well Initiative
- Dave Walstrom: Colfax on the Hill
- Hilarie Portell: The Fax Partnership
- Joel Noble: Curtis Park Neighbors/Inter-Neighborhood Cooperation
- Joyce Reitman: Bellevue-Hale Neighborhood Association
- Lisa Shusko: La Alma/Lincoln Park Neighborhood Organization
- Margie Valdez: Cultural Arts Residential Organization
- Paula Kauffman: Neighbors and Friends for Cheesman Park
- Patricia Wells: Aurora Fox
- Stephanie Salazar: Colfax Business Improvement District

Technical Working Group and Elected Officials:
- David Gaspers: City and County of Denver Community Planning and Development
- Sally Mounier: Aurora City Council, Ward 1
Meeting Summary
Colfax Corridor Connections Community Task Force Meeting #3

Wednesday, February 20, 2013
5:30 p.m. to 7:30 p.m.
Johnson & Wales University, President’s Boardroom
Academic Center, Second Floor
1900 Olive Street, Denver, CO 80220

Meeting Goals

• Update on the Colfax Corridor Connections study progress to-date
• Overview of the alternatives analysis process and results to-date
• Preview of the environmental assessment process and next steps

Agenda

1. Welcome
2. Introductions and task force roles
3. Study overview and Screen 1 reminder
4. Technology overview
5. Screen 2 (Routes) overview
6. Screen 2 (Technologies) overview and considerations
7. Other transit and mobility improvements
8. Next steps
9. Summary and upcoming activities

Handouts

• Meeting agenda
• Presentation handout
**Meeting Overview**

**Task Force Roles and Responsibilities**
Michele Ames, public involvement consultant, outlined the roles and responsibilities of the Task Force members as project representatives for their organizations and communities. A refresher on the project objectives of identifying and providing a package of multi-modal transportation improvements in the East Colfax corridor was provided. The project goal of meeting transportation needs of the corridor over the next 25 years while complying with NEPA requirements was also provided.

**Study Overview and Screen 1 (Public Scoping) Reminder**
Tim Baldwin, consultant project manager, reviewed the Screen 1 (public scoping) evaluation process/criteria and the project schedule to refresh meeting participants on what has been accomplished to date. The six evaluation categories used during the screening process were identified: mobility, environmental (social/community), environmental (natural), fiscal (costs), urban form and deliverability.

Tim Baldwin reminded participants that the Screen 1 (public scoping) process was a fatal flaw analysis that considered traditional and non-traditional options for an urban corridor. Definitions and examples of traditional (streetcar, light rail, enhanced bus, bus rapid transit, etc.) and non-traditional modes/technologies (maglev, gondola, personal rapid transit, etc.) were reviewed.

Tim Baldwin reviewed the results of the fatal flaw analysis for technologies and routes/alignment. Most non-traditional options encountered problems due to incompatibility with an urban corridor, excess cost compared to capacity requirements, environmental impacts and incompatibility with neighborhood plans and character (urban form).

The following Screen 1 (public scoping) route/technology results were carried forward into Screen 2:

<table>
<thead>
<tr>
<th></th>
<th>13th/14th</th>
<th>Colfax</th>
<th>17th</th>
<th>20th/ Montview</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enhanced Bus</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td></td>
</tr>
<tr>
<td>Bus Rapid Transit</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Modern Streetcar</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Light Rail</td>
<td>✔️</td>
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</tr>
</tbody>
</table>
Technology Overview
Before reviewing the next phase of analysis (Screen 2), Jean Sanson, technical consultant for Steer Davies Gleave, provided a review of the four technologies considered during Screen 2: Modern Streetcar, Enhanced Bus, Bus Rapid Transit and Light Rail.

The elements common to all technologies were reviewed before providing a description of each technology individually. Improving system efficiency and reliability is the primary goal for the elements common to all technologies. Common elements include:

- Enhanced stop infrastructure
- Off board ticketing
- Real-time passenger information
- Multiple-door boarding
- System branding
- Vehicle maintenance/storage

Screen 2 (Routes) Overview
Jean Sanson provided a summary of the routes evaluated during the Screen 2 process: 20th and Montview, 17th, Colfax, and 13th/14th. It was explained that the evaluation criteria became more specific in this phase to narrow down what alternatives provide the best high capacity improvement for a major transit investment. The considerations of each alignment were reviewed, along with the key differentiators for whether a route was carried forward or recommended for removal from the study. Colfax Avenue was the only route recommended to advance due to many key differentiators. It was noted that no single criterion led to the ultimate recommendation; rather, it is a collective review of all criteria.

Screen 2 (Technologies) Overview and Considerations
Chris Proud, technical consultant for Steer Davies Gleave, provided a review of the four technologies considered for a major transit improvement on Colfax Avenue during Screen 2: Modern Streetcar, Enhanced Bus, Bus Rapid Transit and Light rail. It was noted that the that light rail technology was screened out during Screen 2 because it had major impacts to on street parking, vehicle movement, turning impacts, reducing access to driveways and alleys and limited potential for economic development (given the substantial impacts).

The key components of the three technologies still being evaluated for a major transit improvement on Colfax Avenue were presented -- Enhanced Bus, Bus Rapid Transit and Modern Streetcar.

The key factors of Enhanced Bus are:

- $1-5 million/mile estimated cost depending on amenities
- Shares a lane with traffic
- Service expansion coupled with mixture of roadway and boarding improvements
- Capacity: 70+/- people per vehicle

The key factors of Bus Rapid Transit are:

- $2-20 million/mile estimated cost depending on extent of construction and amenities
- Semi-exclusive or exclusive lane for some portion of route
- Exclusive lane during peak commute hours (similar to Broadway/Lincoln)
- Capacity: 70+/- people per vehicle
The key factors of Modern Streetcar are:

- $30-60 million/mile estimated cost depending on extent of construction and amenities
- Shared roadway, semi-exclusive or exclusive lane
- Can operate as urban circulator and longer-distance commuter route if needed
- Generally tracks located in the curb lane (side running), maintains parking
- Overhead catenary and sub-stations
- Capacity: 100/200+ people per vehicle

The following Screen 2 route/technology results were presented for the recommended alternatives to be carried forward:

<table>
<thead>
<tr>
<th></th>
<th>13th/14th</th>
<th>Colfax</th>
<th>17th</th>
<th>20th/ Montview</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enhanced Bus</td>
<td>x</td>
<td>✓</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Bus Rapid Transit</td>
<td>x</td>
<td>✓</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Modern Streetcar</td>
<td>x</td>
<td>✓</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Light Rail</td>
<td>x</td>
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<td>x</td>
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</tbody>
</table>

Enhanced Bus, BRT and Streetcar on Colfax Avenue are advanced into the next study phase (Screen 3). It was noted that a more detailed analysis will be conducted for all remaining technologies during Screen 3, including continued refinement of the cost estimates for each technology.

**Other Transit and Mobility Improvements**

Regardless of which major transit improvement is ultimately recommended on Colfax, a package of other improvements will be developed for the entire study area. The other improvements will be designed to optimize the major transit improvement and improve overall mobility in the corridor. Other transportation improvements include:

- Existing bus service improvements
- Roadway operational improvements
- Improved bicycle/pedestrian facilities
- Signage/wayfinding

Michele Ames noted that a team working group has been formed to review and develop other improvements.
Next steps
The project team noted that the following series of community meetings will be conducted next week. A comment form will be developed and distributed to Task Force members along with an electronic version of the meeting presentation.

- Public meetings: February 27 (in Denver) and February 28 (in Aurora)
  - Wednesday, 2/27, 6p.m., Knights of Columbus Hall (1555 Grant St, Denver, CO 80203)
  - Thursday, 2/28, 6p.m., North Middle School (12095 Montview Blvd, Aurora, CO 80010)

The next Task Force meeting is tentatively scheduled for May/June 2013.

Comments and Responses
Throughout the presentation, Task Force members asked the following questions and discussed these issues with the Colfax Corridor Connections project team:

- COMMENT: The 15 and 15L serve two needs today, a short trip and longer trip audience; does this evaluation consider the varied needs of different audiences? (Joel Noble: Inter-Neighborhood Cooperation, INC)
  - RESPONSE: Yes, the number of stops, travel time and other ridership information is considered, along with how the major transit investment will interact with existing bus services. The next phases of this study will explore those issues further and identify other improvements that will optimize the major transit investment. It’s also important to consider how the major transit investment will interact within the local community and use those considerations to identify other improvements that complement and enhance the overall system.

- COMMENT: How is Enhanced Bus different than the bus service on Colfax today, just branding? Would the existing buses be removed if a rail alternative was selected? How will federal funding be identified? (Aylene McCallum: Downtown Denver Partnership)
  - RESPONSE: Enhanced Bus is more than just branding. It includes off board ticketing, signal priority, semi-exclusive lanes, real time schedule info and many other improvements to make the system operate more efficiently. If a rail option is selected, the current bus system would not necessarily disappear from the study area – there are a lot of potential scenarios that could optimize the transit system as whole and that will be looked at during the next phase of this study. No federal funding is currently identified. Once this study is complete, the region will have to decide if and how to fund improved transit on Colfax. The next (Screen 3) analysis will look at cost effectiveness that not only provides a more detailed cost estimate, but also look at what alternative will best meet the region’s forecasted future need. The decision of this study needs to be based on the best system for this corridor for the next 30 years.
• COMMENT: Will the Enhanced Bus system prevent buses from bunching up, like they do today on Colfax? Police on East Colfax are having RTD minimize station amenities currently to mitigate crime, what other approaches could be used? (Ed Wasserman, East Montclair Neighborhood Association)

  o RESPONSE: Some aspects common to all technologies, such as off board ticketing, multiple-door boarding and low floor access, will improve operations and prevent bus bunching. However, congestion and other external factors also impact those types of operational situations. Driver training and schedule adherence is also a constant effort by RTD. Most urban stations will be built with crime mitigation measures, such as clear sight-lines, improved lighting, etc. Having more transit use and increased activity in an area also improves safety.

• COMMENT: Was drainage considered when evaluating the curb bulb-outs? Why is streetcar operation in mixed traffic considered a drawback in this analysis, could it be evaluated with an exclusive lane? (Aylene McCallum: Downtown Denver Partnership)

  o RESPONSE: The study has not gotten to the level of detail that evaluates drainage yet, but it certainly will consider it and potentially present an opportunity to improve drainage within the corridor. Traditionally, streetcar operates with traffic, but there is no reason why it can’t be evaluated with an exclusive lane. Streetcar traditionally isn’t considered for a corridor this long either, but this project could be a groundbreaking application of streetcar.

• COMMENT: How is economic development considered for various options? What type of limitations does the Locally Preferred Alternative (LPA) for this project put on local policy makers? (Joel Noble: Inter-Neighborhood Cooperation, INC)

  o RESPONSE: Other projects across the country are considered when evaluating economic development, but Bus Rapid Transit and streetcar are the two with the greatest potential economic benefits. The LPA does have implications on policy decisions if federal funding is pursued, but the Denver City Council asked for this project to identify the best solution for the corridor – the LPA. Local elected officials are at the table and being updated and brought along throughout the process so that there are no surprises.

• COMMENT: Are certain technologies generally considered to be more preferable for federal funding? (Huiliang Liu: City of Aurora)

  o RESPONSE: There isn’t any official technology preference for federal funding. Another important consideration is that the federally required funding match from local governments is changing. Currently, the federal government requires federally funded projects to have a 50% local funding match (above and beyond the statutory minimum requirement of 20%).

• COMMENT: Shouldn’t light rail being anchored at both ends of the corridor be considered a positive? (Bill Gondrez: Stapleton Foundation)

  o RESPONSE: The common technology was actually a positive for this analysis, but there
are a variety of significant parking, property and traffic impacts associated with the application of light rail in an urban corridor. These significant impacts and the fact that other technologies are better suited for this corridor are why light rail is recommended for elimination from further consideration.

- **COMMENT:** How many stops are we talking about in this corridor? Also, there is a perception problem with the 15 and 15L – in terms of the user’s experience – it would be unfortunate if people also don’t ride the new system following a major transit investment. (Patricia Wells: Aurora Fox)

  o **RESPONSE:** The number of stops for each technology will be determined in Screen 3. The challenges facing the 15/15L service, along with the projected increase in travel through the corridor, are why this study is being conducted – to identify the best solution and improve overall mobility in the corridor.

- **COMMENT:** I like how the information has been presented and agree with the decisions to recommend the three remaining technologies on the Colfax route. (Nadine Caldwell, Northwest Aurora Neighborhood Association)

### Attendees

**Project Team:**

- Terry Ruiter: City and County of Denver
- Tykus Holloway: City and County of Denver
- Tim Baldwin: Steer Davies Gleave
- Chris Proud: Steer Davies Gleave
- Jean Sanson: Steer Davies Gleave
- Huiliang Liu: City of Aurora
- Andy Mountain: GBSM
- Michele Ames: GBSM
- Miles Graham: GBSM

**Community Task Force Representatives:**

- Andrea Furness: Capitol Hill United Neighbors
- Aylene McCallum: Downtown Denver Partnership
- Bill Gondrez: Stapleton Foundation Be Well Initiative
- Dave Walstrom: Colfax on the Hill
- Ed Wasserman: East Montclair Neighborhood Association
- Joel Noble: Curtis Park Neighbors/Inter-Neighborhood Cooperation
- Nadine Caldwell, Northwest Aurora Neighborhood Association
- Patricia Wells: Aurora Fox
Meeting Summary
Colfax Corridor Connections Community Task Force/Leadership Summit -- Meeting #4

Thursday, August 14, 2014
5:30 to 7:30 p.m.
Johnson & Wales University, President’s Boardroom (Academic Center, Second Floor)
1900 Olive Street, Denver, CO 80220

Meeting Goals
- Update on the Colfax Corridor Connections study progress to-date
- Overview of technical analysis on the three remaining alternatives (Enhanced Bus, Bus Rapid Transit and Modern Streetcar)
- Provide recommendations coming out of the analysis and gather input
- Present next steps on the path forward

Agenda
1. Welcome
2. Introductions and participant roles/expectations
3. Project update and recap of study results to-date
4. Overview of technical analysis on remaining alternatives
   - Enhanced Bus
   - Bus Rapid Transit (BRT)
   - Modern Streetcar
5. Preliminary Locally Preferred Alternative and next steps
6. Group Q&A on technical analysis and results to-date
7. Upcoming Public Meetings: August 26 (in Denver) and August 27 (in Aurora)
   - Tuesday, 8/26, 5:30p.m., Knights of Columbus Hall (1555 Grant St, Denver, CO 80203)
   - Wednesday, 8/27, 5:30p.m., North Middle School (12095 Montview Blvd, Aurora, CO 80010)

Handouts
- Meeting agenda
Meeting Overview

Task Force Roles and Expectations
The project team provided a refresher on the Colfax Corridor Connections objectives of identifying and providing a recommendation for multi-modal transportation improvements in the East Colfax corridor was provided. The project goal of meeting transportation needs of the corridor over the next 25 years while complying with environmental requirements was also provided.

Project update and recap of study results to-date
Tim Baldwin, consultant team manager with Steer Davies Gleave, provided a summary of the Screen 1 and 2 processes and results in two parts: routes and technologies. It was explained that the evaluation criteria became more specific in this phase to narrow down what alternatives provide the best high capacity improvement for a major capital transit investment. The considerations of each alignment were reviewed, along with the key differentiators for whether a route was carried forward or recommended for removal from the study. Colfax Avenue was the only route recommended to advance due to many key differentiators. It was noted that no single criterion led to the ultimate recommendation; rather, it is a collective review of all criteria.

Overview of technical analysis on three remaining alternatives
Tim Baldwin also provided a review of the three technologies considered for a major transit improvement on Colfax Avenue during Screen 3: Enhanced Bus, Bus Rapid Transit (BRT) and Modern Streetcar. The elements common to all technologies (off board ticketing, real-time info, multiple-door boarding, etc.) were reviewed before providing a description of each technology individually. Improving system efficiency and reliability is the primary goal for the elements common to all technologies.

The following Screen 2 route/technology results were presented for the recommended alternatives to be carried forward:

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Preliminary Locally Preferred Alternative (LPA) and next steps
The Screen 3 analysis evaluated and ranked the three remaining alternatives – Enhanced Bus, BRT and Modern Streetcar – based on criteria in five categories: Mobility, Environmental, Fiscal, Urban Character and Deliverability measures. Of the three technologies undergoing the final Screen 3 evaluation for a major transit improvement on Colfax Avenue, **BRT in exclusive lanes during peak periods was identified as the City and County of Denver’s preliminary Locally Preferred Alternative (LPA).**

The differentiating factors for BRT technology are as follows:

- Excellent cost effectiveness
  - BRT capital cost: $115M
  - Enhanced Bus capital cost: $90M
  - Modern Streetcar capital cost: $400M

- High ridership
  - BRT daily transit ridership: 43,000 – 44,000
  - Enhanced Bus capital cost: 33,000
  - Modern Streetcar capital cost: 42,000 – 45,000

- Improved end-to-end travel time (compared to no action)
  - BRT saves 10+ minutes
  - Enhanced Bus saves 3 minutes
  - Modern Streetcar saves 8-13 minutes

- Good economic benefit and high return on civic investment
  - BRT projected economic growth: $125-346M
  - Enhanced Bus projected economic growth: $45-136M
  - Modern Streetcar projected economic growth: $275-664M

Next Steps
- Community/agency review
- Request to Federal Transit Administration (FTA) to enter project development
- Conduct environmental clearance
- Secure federal funding
- Complete design and implementation

Comments and Responses
Throughout the presentation, Task Force members asked the following questions and discussed these issues with the Colfax Corridor Connections project team:

- Question: Why didn’t we look at electric buses? Overhead electric wires provide sense of security and confidence in routes.
  - Response: Overhead electric is used for steep grades (e.g., San Francisco). It is not necessary and adds cost in a flat corridor without greater operational benefit.
• Question: Were the eliminated routes discussed with the public? Previous meetings seemed to suggest that RTD wouldn’t consider any projects on Colfax.
  ○ Response: Yes. During Screen 1 and Screen 2 of outreach this information was presented with general agreement that investment should be on Colfax.

• Question: Looks like stations are raised to create level boarding? Is this an investment being looked into?
  ○ Response: Yes. We are looking into raised stations, but other buses may still use the stations so level boarding may not be optimal. Modern wheelchair ramps have automatic deployment so driver doesn’t have to get out of vehicle. Colfax constraints won’t necessarily allow for level boarding at EVERY stop, but the goal is to get as close as possible and to provide faster on/off times.

• Question: The Colfax corridor is cut off from all the cool things happening with light rail and I’m disappointed it came off the table last year. How will this project be connected to Downtown?
  ○ Response: Streetcar has less impact and made a little more sense than light rail as a rail option in this corridor. We did focus on how we connect with what else is going on in regards to Civic Center, Anschutz, Auraria, etc. Light rail needs its own alignment and that’s not feasible on Colfax.

• Question: In streetcar vs BRT, are you modeling limited stops for streetcar? Is there a sweet spot for frequency in stops on BRT?
  ○ Response: Further evaluation of potential stop locations, as well as current stops (currently about a mile between 15L stops), will be assessed during the next level of study. We are assuming that existing connections to local bus services will remain.

• Question: What is the potential impact of spill-over traffic on parallel streets?
  ○ Response: A more detailed analysis will be conducted during the next environmental assessment/clearance phase, but thus far we didn’t’ see any overwhelming congestion on side streets as a result of BRT.

• Question: Capacity vs demand. If we do BRT or streetcar in exclusive lanes, are we providing more capacity? How much? 15%? 75%?
  ○ Response: There is currently more transit demand than capacity in the corridor. This study is identifying the best option for meeting future demand. Exclusive lane operations provide much more frequency and efficiency.

• Question: Is there a difference in vehicle length between BRT and streetcar?
  ○ Response: Yes, but depends on the vehicle. There are constraints on Colfax due to block length and intersections. Generally streetcar vehicles are slightly larger than BRT.
• Question: Do exclusive vs non-exclusive lanes impact reliability?
  o Response: Generally exclusive lanes will absolutely be more reliable than shared lanes.

• Question: Limitations on economic development are generally the same with any mode, but why are the numbers for streetcar higher?
  o Response: Streetcar’s ability to fundamentally change the streetscape accounts for this difference, as well as slightly higher projected ridership.

• Question: Has there been any thought on how to pull in people from Stapleton and Lowry?
  o Response: Existing buses will still operate on and offer those connections, but more detailed modeling on will be conducted in the next environmental assessment/clearance phase.

• Question: Would BRT operate only during peak hours?
  o Response: No. The BRT will run in exclusive lanes only during the AM and PM weekday peaks, but those buses would still function during off peak hours with all the same enhanced station amenities.

• Question: Having narrowed down to BRT, what factors have you considered regarding peak hour exclusive lanes vs. all day exclusive lanes?
  o Response: The modeling done to-date does not reflect enough of a ridership gain to warrant BRT in exclusive lanes all day. The LPA will function like BRT on Broadway and Lincoln.

• Question: Who will run the system? RTD? Who gets paid when I pay bus fair?
  o Response: The operational and organizational structure still has many different options and scenarios to be explored. Further evaluation regarding operations will also be conducted in the next environmental assessment/clearance phase.

Meeting Attendees

Community Task Force Representatives:
• John Desmond: Downtown Denver Partnership
• Will Gondrez: Stapleton Foundation
• Bob Hagedorn: Aurora Chamber of Commerce/FAX Aurora
• Anne Lindsey: Golden Triangle Association
• Frank Locantore: Uptown on the Hill
• Wayne New: District 10 Denver City Council Candidate
• Joel Noble: Inter-Neighborhood Cooperation
• Joyce Reitman: Bellevue-Hale Neighborhood Association
• Stephanie Salazar: Colfax Business Improvement District
• Myles Tangalin: Congress Park Neighbors, Inc.
• Margie Valdez: Cultural Arts Residential Organization
• Dave Walstrom: Colfax on the Hill
• Ed Wasserman: East Montclair Neighborhood Association
• Patricia Wells: Aurora Fox

Project Team:
• Tykus Holloway: City and County of Denver
• Crissy Fanganello: City and County of Denver
• Emily Silverman: City and County of Denver
• David Gaspers: City and County of Denver
• Ryan Billings: City and County of Denver
• Genevieve Hutchison: Regional Transportation District
• Lee Cryer: Regional Transportation District
• Tim Baldwin: Steer Davies Gleave
• Bart Przbyl: Apex Design
• Brad Segal: PUMA
• Andy Mountain: GBSM
• Miles Graham: GBSM
• Olivia Moffett: GBSM
Meeting Summary  
Colfax Corridor Connections Technical Working Group (TWG) Meeting #1

Thursday, September 27, 2012  
9:30 – 11:30 a.m.  
Wellington Webb Building  
201 W. Colfax Avenue  
4th Floor Conference Room 4.1.4  
Denver, CO 80202

MEETING GOALS

- Overview of the Colfax Corridor Connections study  
- Overview of the alternatives analysis process  
- Overview of the environmental assessment process  
- Overview of roles/expectations for the Technical Working Group

AGENDA

1. Welcome
2. Introductions
3. Technical Working Group roles/expectations
4. Project overview  
   a. Alternatives analysis process  
   b. NEPA process  
   c. Evaluation criteria and methodology
5. Related Studies
6. Summary and next steps  
   a. Community Taskforce Meeting tonight at 5:30 p.m. (Johnson & Wales University)  
   b. Public Meetings October 1 (in Aurora) and 4 (in Denver)  
   c. Next Technical Working Group meeting will be in early 2013

HANDOUTS

- Meeting agenda
- Colfax Corridor Connections fact sheet
- Colfax Corridor Connections FAQ
- Colfax Corridor Connections Purpose and Need statement
- Colfax Corridor Connections Evaluation Criteria handout
- TWG comment form
- Presentation handout
MEETING OVERVIEW

TWG roles and expectations:
Andy Mountain, public involvement consultant, outlined the roles and responsibilities of TWG participants. Responsibilities include developing scoping comments and the submitting those comments to the project team in two weeks. An electronic comment form will also be emailed to participants to allow time for internal agency coordination.

Project overview:
Tim Baldwin, consultant project manager, presented the project overview, including background information, the project’s purpose and need, schedule and the kickoff/public notification process. A summary of the Alternatives Analysis and National Environmental Policy Act (NEPA) process was provided, along with an overview of the Colfax Corridor Connections evaluation criteria, methodology and key issues.

Tim Baldwin also provided a description of the Colfax Corridor Connections study area and the current and projected demographics within the study area. It was noted that the East Colfax corridor has the highest ridership of entire RTD system – 30,000/day (total boardings) and projected to increase to 39,000/day by 2035 (Streetcar Feasibility Study).

Scott Epstein, technical lead for Pinyon Environmental, presented a summary of the environmental resources considered within an urban study area such as the East Colfax corridor. In this corridor, human, community and social resources will be given higher priority than biological, wetlands, wildlife or endangered species. However, this does not mean issues such as air and water quality will not be considered.

Related studies:
Melissa Rosas, technical lead for Apex Design, presented findings of previous studies that identified the need for transportation improvements in the East Colfax corridor. The identified studies included the Denver Strategic Transportation Plan, which was completed in 2008 and identified 20-30% increased person-trip demand in the corridor by 2025, and emphasizes the need for alternative modes of travel. The Streetcar Feasibility Study, completed in 2010, was also presented. The study found that streetcar may not be the best option, but is not infeasible, and all transit routes in corridor running at capacity.

Public Involvement (PI) and next steps:
Andy Mountain outlined the PI process for the project with an emphasis on the first/scoping phase, including the Community Task Force, public meetings and the TWG. Participants were encouraged again to submit comments to the project team that focus on three key areas (Purpose and Need, Evaluation Criteria, Related Projects). The importance of providing details and supplemental information about related projects in scoping comments was reinforced.

COMMON THEMES

The following themes/concerns emerged from the previous discussion:

- Interest about how congestion is defined in relation to the project’s Purpose and Need.
- Accessibility and safety were identified as important components for each segment of the corridor, especially for north/south travel. “Reliability” was referred to as a good way to universally refer to all critical components.
• Alignment and route options are limited due to corridor constraints, but all bus and bike route maps should be complete and up-to-date to emphasize connectivity and how the system interacts.

• Although all vehicle/technology options should be considered, certain options are better suited to urban environments (BRT, streetcar) than those which generally require exclusive right-of-way (commuter rail, heavy rail (subway)).

• Alternative transportation strategies, demand and supply management strategies, and service and facilities improvements need to be consistent with I-70 incident management plan because it is an established plan and Colfax is designated as an alternate route.

• Pedestrian mobility needs to be a priority because areas of the corridor have poor pedestrian accessibility, e.g. west end near Auraria.

• Clarification that Colfax Corridor Connections is a study and not a project (including construction) will continuously need to be emphasized. Also, a clear message about the implementation plan and funding options will be important for managing expectations.

• Once a Locally Preferred Alternative is identified, the implementation/funding plan will be determined. Federal and local funding will be considered and the private sector will be involved.

• The project will need to conform to the Federal Transit Administration’s (FTA’s) long-term plan to be considered for an Environmental Assessment (EA) FONSI, but doesn’t guarantee FTA funding. A preliminary EA will be completed at the conclusion of this study.

• Although the study area is an urban environment, Colfax Corridor Connections will consider and evaluate the “built environment,” including trees, water quality and existing resources.

• Many related projects and additional studies have been conducted, and the findings will be pertinent to Colfax Corridor Connections. Participants were encouraged to submit detailed comments to the project team including this information.

ATTENDEES

Project Team:
• Terry Ruiter: City and County of Denver
• Emily Silverman, City and County of Denver
• Genevieve Hutchison: RTD
• Tim Baldwin: Steer, Davies, Gleave
• Shari Frank: Steer, Davies, Gleave
• Melissa Rosas: Apex Design
• Scott Epstein: Pinyon Environmental
• Andy Mountain: GBSM
• Michele Ames: GBSM
• Miles Graham: GBSM
Technical Working Group Representatives:

- Michael Delgiudice: Anschutz Medical Campus
- Andre Vite: Anschutz Medical Campus
- Jill Jennings-Golich: Auraria Higher Education Center
- Jess Ortiz: City and County of Denver
- David Gaspers: City and County of Denver
- Huiliang Liu: City of Aurora
- Jim DiLeo: Colorado Department of Public Health and Environment
- Amy Schmaltz: Colorado Department of Transportation
- Jacob Riger: Denver Regional Council of Governments
- Scott Ramming: Denver Regional Council of Governments
- David Beckhouse: Federal Transit Administration
- Geri Reinardy: National Jewish Health
- John Shonsey: Regional Transportation District
- Jeff Dunning: Regional Transportation District
- Kiel Downing: U.S. Army Corps of Engineers
- Shayne Brady: U.S. Department of Housing and Urban Development, Region Eight

Other Participants

- Nora Kimball: Office of Councilwoman Jeanne Robb
Meeting Summary
Colfax Corridor Connections Technical Working Group (TWG) Meeting #2

Wednesday, February 20, 2013
2 p.m. – 4 p.m.
SDG Offices (Dominion Towers)
600 17th Street, 23rd Floor Conference Room, South Tower
Denver, CO 80202

Meeting Goals
• Update on the Colfax Corridor Connections study progress to-date
• Overview of the alternatives analysis process and results to-date
• Preview of the environmental assessment process and next steps

Agenda
1. Welcome
2. Introductions and TWG roles/expectations
3. Project overview and scoping summary
4. Screen 1 (Fatal flaw) Process and results
5. Screen 2 (Routes and technologies) Process and results
6. Next Steps
7. Summary and upcoming activities

• Community task force meeting tonight (2/20) at 5:30 p.m. (Johnson & Wales University)
• Public meetings: February 27 (in Denver) and February 28 (in Aurora)
  o Wednesday, 2/27, 6p.m., Knights of Columbus Hall (1555 Grant St, Denver, CO 80203)
  o Thursday, 2/28, 6p.m., North Middle School (12095 Montview Blvd, Aurora, CO 80010)
• Next Technical Working Group meeting will be in May/June 2013

Handouts
• Meeting agenda
• Presentation handout
Meeting Overview

TWG Roles and Expectations
Andy Mountain, public involvement consultant, outlined the roles and responsibilities of TWG members as project representatives for their organizations. A refresher on the project objectives of identifying and providing a package of multi-modal transportation improvements in the East Colfax corridor was provided. The project goal of meeting transportation needs of the corridor over the next 25 years while complying with NEPA requirements was also provided.

Project Overview and Scoping Summary
Andy Mountain provided a summary of the common themes identified in the roughly 125 comments submitted during the public scoping period last fall:

- The East Colfax corridor is increasingly congested for all modes (bus, vehicle, pedestrian, etc.) and this project is needed.
- Transit stations and vehicles should be safe, clean, comfortable and easy to access.
- Although the study area is an urban environment, the study should consider environmental factors, such as trees, water and air quality.
- Many related projects and studies have been conducted in the area and should be considered by this study.
- It is important to maintain the unique character of Colfax and consider how transit users, pedestrians, bicyclists and drivers access the corridor and move within it.

Screen 1 (Fatal flaw) Process and Results
Tim Baldwin, consultant project manager, reviewed the Screen 1 (public scoping) evaluation process/criteria and reviewed the project schedule. The six evaluation categories used during screening were identified: mobility, environmental (social/community), environmental (natural), fiscal (costs), urban form and deliverability.

Tim Baldwin explained that Screen 1 (public scoping) was a fatal flaw analysis that considered traditional and non-traditional options for an urban corridor. Definitions and examples of traditional (streetcar, light rail, enhanced bus, bus rapid transit, etc.) and non-traditional modes/technologies (maglev, gondola, personal rapid transit, etc.) were reviewed.

Tim Baldwin presented the summary results of the fatal flaw analysis for each technology. Most non-traditional options encountered problems due to incompatibility with an urban corridor, excess cost compared to capacity requirements, environmental impacts and incompatibility with neighborhood plans and character (urban form). The route/alignment options considered in Screen 1 (public scoping) noted all route options use Colfax at some point, but included other street combinations to the north and south of Colfax Ave.

The following Screen 1 (public scoping) route/technology results were carried forward into Screen 2:
Jean Sanson, technical consultant for Steer Davies Gleave, provided a summary of the Screen 2 process and results in two parts: routes and technologies. It was explained that the evaluation criteria became more specific in this phase to narrow down what alternatives provide the best high capacity improvement for a major capital transit investment. The considerations of each alignment were reviewed, along with the key differentiators for whether a route was carried forward or recommended for removal from the study. Colfax Avenue was the only route recommended to advance due to many key differentiators. It was noted that no single criterion led to the ultimate recommendation; rather, it is a collective review of all criteria.

Chris Proud, technical consultant for Steer Davies Gleave, provided a review of the four technologies considered for a major transit improvement on Colfax Avenue during Screen 2: Modern Streetcar, Enhanced Bus, Bus Rapid Transit and Light Rail. The elements common to all technologies (off board ticketing, real-time info, multiple-door boarding, etc.) were reviewed before providing a description of each technology individually. Improving system efficiency and reliability is the primary goal for the elements common to all technologies.

Chris Proud then presented the unique characteristics of each technology. It was noted that the estimated costs provided will continue to be refined during the next study phase (Screen 3). The cost estimates also assume the total cost of each technology with all new vehicles (no reuse of existing buses). Capacity and size comparisons of each technology were also presented.

Jean Sanson presented that light rail technology was screened out during Screen 2 because it had major impacts to on street parking, vehicle movement, turning impacts, reducing access to driveways and alleys and limited potential for economic development (given the substantial impacts).
The following Screen 2 route/technology results were presented for the recommended alternatives to be carried forward:

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**Technology Descriptions**

Enhanced Bus, BRT and Streetcar on Colfax Avenue are advanced into the Screen 3 evaluation. The key components of the three technologies still being evaluated for a major transit improvement on Colfax Avenue were presented — Enhanced Bus, Bus Rapid Transit and Modern Streetcar.

The key factors of Enhanced Bus are:
- $1-5 million/mile estimated cost depending on amenities
- Shares a lane with traffic
- Service expansion coupled with mixture of roadway and boarding improvements
- Capacity: 70+- people per vehicle

The key factors of Bus Rapid Transit are:
- $2-20 million/mile estimated cost depending on extent of construction and amenities
- Semi-exclusive or exclusive lane for some portion of route
- Exclusive lane during peak commute hours (similar to Broadway/Lincoln)
- Capacity: 70+- people per vehicle

The key factors of Modern Streetcar are:
- $30-60 million/mile estimated cost depending on extent of construction and amenities
- Shared roadway, semi-exclusive or exclusive lane
- Can operate as urban circulator and longer-distance commuter route if needed
- Generally tracks located in the curb lane (side running), maintains parking
- Overhead catenary and sub-stations
- Capacity: 100/200+ people per vehicle
Other Improvements
Regardless of which major transit improvement is ultimately recommended on Colfax, a package of other improvements will be developed for the entire study area. The other improvements will be designed to optimize the major transit improvement and improve overall mobility in the corridor. Other transportation improvements include:

- Existing bus service improvements
- Roadway operational improvements
- Improved bicycle/pedestrian facilities
- Signage/wayfinding

Upcoming Activities and Next Steps
The project team will conduct the following series of community meetings and develop a TWG comment form and distribute it to TWG members along with an electronic version of the presentation.

- Community Task Force Meeting: February 20 at 5:30 p.m. (Johnson & Wales University)
- Public meetings: February 27 (in Denver) and February 28 (in Aurora)
  - Wednesday, 2/27, 6p.m., Knights of Columbus Hall (1555 Grant St, Denver, CO 80203)
  - Thursday, 2/28, 6p.m., North Middle School (12095 Montview Blvd, Aurora, CO 80010)

The next Technical Working Group meeting is tentatively scheduled for May/June 2013.

Comments and Responses
Throughout the presentation, TWG members asked the following questions and discussed these issues with the Colfax Corridor Connections project team:

- Comment: Did feedback from the Scoping Phase on the initial evaluation criteria and other project aspects influence the final purpose and need? (Jill Jennings-Golich: Auraria Higher Education Center)
  - Response: Yes – the original purpose and need statement was revised and has been posted to the project website.

- Comment: Do cyclists actually use Colfax Ave. or other streets in the corridor? (Jim DiLeo, Colorado Department of Public Health and Environment)
  - Response: Generally not on Colfax proper, but a very vocal and active cycling community exists within the study area – especially in Denver.
• Comment: In terms of buses, would electrified buses be an option? (Jim DiLeo, Colorado Department of Public Health and Environment)

  o Response: Electric vehicles could be considered under enhanced bus or BRT technology, but the need for electric vehicles is typically driven by steep and changing topography. Electrified buses probably aren’t needed in this corridor. However, most federally funded BRT/enhanced bus projects are using diesel/electric hybrids.

• Comment: Was the Screen 1 evaluation mostly qualitative? (Jacob Riger, Denver Regional Council of Governments)

  o Response: Yes, the evaluation criteria provided the system for identifying fatal flaws in the initial large group of technologies.

• Comment: Does a “high capacity” transit alternative have a capacity definition? Is frequency considered at this point? (Jim DiLeo, Colorado Department of Public Health and Environment)

  o Response: Generally speaking systems that can carry +/- 40,000 passengers a day are considered “high capacity transit” because that is the minimum transit capacity need anticipated in the study area by 2035. Frequency isn’t yet considered, but it will be and all alternatives in this study will be evaluated so that they can be optimized for maximum frequency to meet projected travel demand.

• Comment: What does Denver Moves identify as primary bike paths in the corridor? (David Beckhouse, Federal Transit Administration)

  o Response: There are a number of defined and highly used bike routes in the corridor. For example, 12th and 16th have highly used bike lanes.

• Comment: How is on street parking defined and why is it considered? Will transit improvements and economic development be considered together because it seems very appropriate in this corridor? What is the representation of the Community Task Force? (Shayne Brady, U.S. Department of Housing and Urban Development, Region Eight)

  o Response: All existing on street parking is inventoried because all alternatives could have some parking impacts, which range from minor to severe (light rail). The relationship between the transit alternatives and economic development are considered and will be explored further as station areas and frequency are defined in the next phases of this study. A major transit investment also shows a commitment to the corridor and that permanence can also stimulate economic development. The Community Task Force is comprised of neighborhood organizations, business associations and community groups from throughout the corridor.

• Comment: Are the Screen 2 findings final or does the TWG have the opportunity to comment on the findings? Did you look at transit that exists today for these route evaluations? Were existing roadway capacities looked at, because Colfax seems congested all the time? Will there be a
comment period for this info? (Jill Jennings-Golich, Auraria Higher Education Center)

- Response: The TWG absolutely can and should provide feedback on the Screen 2 findings at this point in the process. Current transit operations and connections were considered in addition to bike and pedestrian connections for each route. A number of potential improvements will need to be made throughout the study area and not all will be on Colfax. Roadway capacity was looked at and included transportation modeling to identify potential improvements to traffic flow. There will be a two week comment period for TWG members to submit comments.

- Comment: How is ‘fewest roadway intersections’ calculated? Suggested Screen 3 findings are presented in terms of detailed operations and design, including how the major investment alternative interacts with existing services and blends some of the other improvements. (Jacob Riger, Denver Regional Council of Governments)

  - Response: Roadway intersections are physically counted and inventoried for each alignment so that comparisons and assumptions can be made for each route. Suggestion for Screen 3 presentation format is noted.

- Comment: Why assume the ticketing will be on the sidewalk? Auraria sidewalks are very narrow. Is there also a commitment to sidewalk improvements? If bus was chosen, would existing bus maintenance facilities be able to serve this system? Will the final selection be branded? Understanding whether 15/15L goes away is an important factor that needs to be communicated via this study. (Jill Jennings-Golich, Auraria Higher Education Center)

  - Response: Off board ticketing speeds boarding process, but the sidewalks will need to be looked at in certain areas. For maintenance, it is possible that existing RTD facilities may be able to accommodate some maintenance for this system but that is not confirmed at this phase in the study. The intent with the bulb-out passenger loading areas is that the off-board ticketing would usually be accommodated in those ‘new’ spaces. The next screening evaluation will provide more detailed information on system maintenance. System branding is an element common to all technologies.

- Comment: Does RTD know how many projected users have annual passes? Will implementation be phased in? Why can’t they make a longer bus? Would buses be removed if a rail alternative was selected and how would it impact the fare structure? (Jim DiLeo, Colorado Department of Public Health and Environment)

  - Response: RTD does have pass holder data/demographic info available. It is possible to consider some phased implementation, for example, starting with Enhanced Bus and progressing to BRT. Longer buses are in development by other countries, but there are limitations to axle length and structure issues. If a rail option is selected, the current bus system would not necessarily disappear from the study area – there are a lot of potential scenarios that could optimize the transit system as whole and that will be looked at during the next phase of this study. Similarly, the fare system needs to be evaluated to optimize system performance.
• Comment: It seems like the common components are all being packaged as a transportation management system. What assumptions are being made about different maintenance requirements? Could streetcar have an exclusive alignment/route like BRT? (David Beckhouse, Federal Transit Administration)
  o Response: Improving the system efficiency and reliability is a common goal for the elements common to all technologies. For maintenance, the assumption is that it will be needed regardless of technology, but not the same type of maintenance for each. It is possible that Streetcar could have its own exclusive lane and be refined further during Screen 3.

• Comment: Some light rail does have low floor boarding, why is it excluded from the common elements? (Pamela Fischhaber, Public Utilities Commission)
  o Response: This study assumes the same light rail vehicles as RTD currently uses.

Meeting Attendees

Project Team:
• Terry Ruiter: City and County of Denver
• Tykus Holloway, City and County of Denver
• Tim Baldwin: Steer Davies Gleave
• Chris Proud: Steer Davies Gleave
• Jean Sanson: Steer Davies Gleave
• Shari Frank: Steer Davies Gleave
• Melissa Rosas: Apex Design
• Andy Mountain: GBSM
• Michele Ames: GBSM
• Miles Graham: GBSM

Technical Working Group Representatives:
• Jill Jennings-Golich: Auraria Higher Education Center
• David Gaspers: City and County of Denver
• Honah Tran: City of Aurora
• Jim DiLeo: Colorado Department of Public Health and Environment
• Amy Schmaltz: Colorado Department of Transportation
• Nicole Portee, Denver Public Schools
• Jacob Riger: Denver Regional Council of Governments
• David Beckhouse: Federal Transit Administration
• Pamela Fischhaber: Public Utilities Commission
• Jeff Dunning: Regional Transportation District
• Shayne Brady: U.S. Department of Housing and Urban Development, Region Eight
Meeting Summary
Colfax Corridor Connections Technical Working Group (TWG) Meeting #3

Thursday, August 7, 2014
9:30 a.m. to 11:30 a.m.
City and County of Denver Wellington Webb Building
4th Floor Conference Room 4.F.6
201 W. Colfax Avenue, Denver, CO 80202

Meeting Goals

• Update on the Colfax Corridor Connections study progress to-date

• Overview of technical analysis on the three remaining alternatives (Enhanced Bus, Bus Rapid Transit and Modern Streetcar)

• Recommendations coming out of the analysis and next steps on the path forward

Agenda

1. Welcome

2. Introductions and TWG roles/expectations

3. Project update and recap of Screen 1 and Screen 2

4. Overview of technical analysis on three remaining alternatives
   • Enhanced Bus
   • Bus Rapid Transit (BRT)
   • Modern Streetcar

5. Q&A on technical analysis and results to-date

6. Next Steps and upcoming activities
   • Community Leadership Summit/Working Group: August 14, 2014
   • Public Meetings: Denver, August 26, 2014 / Aurora, August 27, 2014

Handouts

• Meeting agenda
**Meeting Overview**

**TWG Roles and Expectations**
Andy Mountain, public involvement consultant, outlined the roles and responsibilities of TWG members as project representatives for their organizations. A refresher on the Colfax Corridor Connections objectives of identifying and providing a recommendation for multi-modal transportation improvements in the East Colfax corridor was provided. The project goal of meeting transportation needs of the corridor over the next 25 years while complying with NEPA requirements was also provided.

**Project update and recap of Screen 1 and Screen 2**
Tim Baldwin, consultant team manager with Steer Davies Gleave, provided a summary of the Screen 1 and 2 processes and results in two parts: routes and technologies. It was explained that the evaluation criteria became more specific in this phase to narrow down what alternatives provide the best high capacity improvement for a major capital transit investment. The considerations of each alignment were reviewed, along with the key differentiators for whether a route was carried forward or recommended for removal from the study. Colfax Avenue was the only route recommended to advance due to many key differentiators. It was noted that no single criterion led to the ultimate recommendation; rather, it is a collective review of all criteria.

**Overview of technical analysis on three remaining alternatives**
Tim Baldwin also provided a review of the three technologies considered for a major transit improvement on Colfax Avenue during Screen 3: Enhanced Bus, Bus Rapid Transit (BRT) and Modern Streetcar. The elements common to all technologies (off board ticketing, real-time info, multiple-door boarding, etc.) were reviewed before providing a description of each technology individually. Improving system efficiency and reliability is the primary goal for the elements common to all technologies.

The following Screen 2 route/technology results were presented for the recommended alternatives to be carried forward:

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Screen 3 and the preliminary Locally Preferred Alternative (LPA)
The Screen 3 analysis evaluated and ranked the three remaining alternatives – Enhanced Bus, BRT and Modern Streetcar – based on criteria in five categories: Mobility, Environmental, Fiscal, Urban Character and Deliverability measures.

Of the three technologies undergoing the final Screen 3 evaluation for a major transit improvement on Colfax Avenue, *BRT in exclusive lanes during peak periods was identified as the City and County of Denver’s preliminary Locally Preferred Alternative (LPA)*.

The differentiating factors for BRT technology are as follows:

- Excellent cost effectiveness
  - BRT capital cost: $115M
  - Enhanced Bus capital cost: $90M
  - Modern Streetcar capital cost: $400M

- High ridership
  - BRT daily transit ridership: 43,000 – 44,000
  - Enhanced Bus capital cost: 33,000
  - Modern Streetcar capital cost: 42,000 – 45,000

- Improved end-to-end travel time (compared to no action)
  - BRT saves 10+ minutes
  - Enhanced Bus saves 3 minutes
  - Modern Streetcar saves 8-13 minutes

- Good economic benefit and high return on civic investment
  - BRT projected economic growth: $125-346M
  - Enhanced Bus projected economic growth: $45-136M
  - Modern Streetcar projected economic growth: $275-664M

Next Steps
- Community/agency review
- Request to FTA to Enter Project Development
- Conduct Environmental Clearance
- Secure Federal Funding
- Complete Design and Implementation

Comments and Responses
Throughout the presentation, TWG members asked the following questions and discussed these issues with the Colfax Corridor Connections project team:

- Jim DiLeo (CDPHE): What type of traffic model will be used? Is it a more complex process? What parking impacts are projected?
Response: As part of this study, RTD and DRCOG, in coordination with the City and County of Denver, have developed a new travel forecasting model (often referred to as the “FOCUS model”) that is a more detailed prediction tool for the region. One of the biggest benefits of the new model is its ability to more accurately account for the role walking and bicycle trips (either exclusively or as part of a trip that includes transit or vehicular travel) play in travel behavior. Given the strong role that walking and bicycling has in the Colfax Avenue Corridor, the new model is a valuable addition to this project. Regarding parking, the identified impacts are minimal and consent with the study goal.

- Jess Ortiz (CCD): How does the exclusive lane impact operations and vehicle traffic?
  - Response: During the dedicated, transit-only lane hours of operation, right-turns from the exclusive lanes and access to/from parking will still be permitted. This is similar to how the exclusive lanes work along Broadway/Lincoln in downtown Denver. On weekends and at all other times during the weekdays, approximately 18 hours daily, vehicular traffic on Colfax Avenue and the adjacent roadways would most likely not change due to the LPA. Additional detailed analysis of potential roadway and other impacts along Colfax Avenue, and the adjacent roadways, will be performed this fall/winter during the environmental (NEPA) phase of the project. This will identify issues and/or potential mitigation measures associated with the preliminary LPA.

- Larry Squires (FTA): Was traffic impact analysis done on other routes/alignments in the corridor?
  - Response: The alternate alignments that were screened out in favor of Colfax have not been extensively evaluated. Additional detailed analysis of potential roadway and other impacts along Colfax Avenue, and the adjacent roadways, will be performed this fall/winter during the environmental (NEPA) phase of the project. This will identify issues and/or potential mitigation measures associated with the preliminary LPA.

- Jim DiLeo (CDPHE): Did the Ridership projections distinguish between demographics (e.g., commuters, recreation, etc.)?
  - Response: No differentiation between demographics was made, but some travel behavior was evaluated. For example, we know the corridor doesn’t have lots of end to end trips and there is a lot of local travel, which is one important factor in uninterrupted service of the 15 bus. That level of ridership detail is available, but would takes a lot more work. (Important data for Jim/CDPHE).

- Jess Ortiz (CCD): Does modeling consider ADA access and boarding?
  - Response: The modeling doesn’t specifically consider ADA issues, but the BRT design with low floor boarding and raised curbs makes this technology much more accessible for disabled persons.

- Jim DiLeo (CDPHE): Vehicle Miles Traveled (VMT) is an important result with potentially significant implications on congestion, air quality, etc. Will more evaluation be done in this area?
- Response: Further evaluation of VMT and all traffic issues will be conducted during the NEPA/environmental clearance phase. The Focus model works well for comparison but the NEPA process goes into much more detail.

- Follow up – Dave Beckhouse (FTA): Some VMT difference between BRT and Streetcar makes sense but the significant discrepancy shown here is interesting and highlights the need for further study.

- Jim DiLeo (CDPHE): Are diesel, gas, electric modes compared here or in the Environmental Assessment (EA)? Also, Emission reduction on Colfax with use of exclusive lane alternatives reduces VMT and is a good message to share.

- Response: That evaluation would be at the EA level for the LPA. It’s also important to consider the point source as well as vehicle type. For example, the electricity for streetcar comes from somewhere and that source generally produces emissions. It’s also worth noting that bus technologies are becoming increasingly efficient and many utilize hybrid/electric technologies.

- John Yu (CCD): How much impact will the extra volume pushed to side streets and traffic impacts on Colfax have when doubling rider? Key traffic element also missing, ridership doesn’t show mode shift.

- Response: The current level of study shows there will be some diversion, but that it will be minimal. There also is some diversion that exists with congestion today. That said, additional detailed analysis of potential roadway and other impacts along Colfax Avenue, and the adjacent roadways, will be performed this fall/winter during the environmental (NEPA) phase of the project. This will identify issues and/or potential mitigation measures associated with the preliminary LPA.

- Kevin Osborne (FTA): Is the formal definition of BRT used for this study?

- Response: Assumptions are 10 miles of exclusive BRT lanes during peak periods. The FTA is still working on specific guidance for BRT definition, but this study intends to comply on those definitions.

- Follow up -- Dave Beckhouse (FTA): BRT and other bus guidance is still changing and the timeline for a formal decision is TBD.

- Jim DiLeo (CDPHE): Was private investment/development considered in economic analysis?

- Response: Private investment was considered, along with case studies from peer cities, local/national developer and private-investor interviews, as well as an inventory of development potential for all parcels along Colfax Avenue within the study area. The economic analysis provided the following key findings:
- Shallow lot depth along Colfax Avenue limits the scope and scale of new development opportunities
- Investing in transit along Colfax Avenue will improve property values
- Developers indicate the quality of transit investment (e.g., station amenities, aesthetics, transit priority, and other improvements) was important to their future (re)development and investment considerations along Colfax Avenue

- Jim DiLeo (CDPHE): Does BRT as the LPA provide flexibility for streetcar as the long-term solution. Does this recommendation require Denver City Council Approval?
  - Response: Implementing BRT along Colfax Avenue does not preclude the long-term vision of having streetcars operating along Colfax Avenue and/or in other areas. The City and County of Denver intends to undertake a transit master plan to help better define the future vision of mobility for all users within and to/from Denver, which will be conducted with extensive public involvement.

- Jim DiLeo (CDPHE): Does this recommendation require Denver City Council Approval?
  - Response: The study documents don’t require Council approval, but elected are briefed and must be presented to council committees. The implementation phase would need Council approval for project approval and budget allocation.

- Carl Meese (Auraria): How would this recommendation integrate with Auraria?
  - Response: More detailed analysis on the operational level will come at the next phase, but 7th and Colfax (Auraria West) would most likely be where any alternative turns around and goes back the other way.

**Meeting Attendees**

**Technical Working Group Representatives:**
- Carl Meese: Auraria Higher Education Center
- David Gaspers: City and County of Denver, Community Planning and Development
- John Yu: City and County of Denver, Public Works Traffic Engineering Services
- Jess Ortiz: City and County of Denver Capital Projects Management
- Jim DiLeo: Colorado Department of Public Health and Environment
- Matthew Helfant: Denver Regional Council of Governments
- David Beckhouse: Federal Transit Administration
- Kevin Osborn: Federal Transit Administration
- Larry Squires: Federal Transit Administration
- Jeff Dunning: Regional Transportation District
- Lee Cryer: Regional Transportation District
**Project Team:**

- Tykus Holloway: City and County of Denver
- Crissy Fangelello: City and County of Denver
- Genevieve Hutchison: Regional Transportation District
- Tim Baldwin: Steer Davies Gleave
- Chris Proud: Steer Davies Gleave
- Scott Epstein: Pinyon
- Bart Przbyl: Apex Design
- Brad Segal: PUMA
- Andy Mountain: GBSM
- Miles Graham: GBSM
- Olivia Moffett: GBSM