NORTH I-25 EIS COMMUTER RAIL UPDATE

APPENDICES

MAY, 2015

PARSONS BRINCKERHOFF

COLORADO Department of Transportation

Appendix A

Stakeholder One-on-One Interviews

North I-25 EIS Commuter Rail Update Study

Summary of One-on-One Stakeholder Meetings

August 21 – October 21, 2014

This study is led by the Colorado Department of Transportation and is comprised of updating commuter rail component of the North I-25 Environmental Impact Statement (EIS).

The goals of this North I-25 EIS study are to update three items of the commuter rail element in the document.

- Capital costs will be updated to reflect 2014 dollars and FTA/FRA standard cost categories.
- The Operational Plan will be updated based on identified changes, compared to prior assumptions/findings, for track, intersections, and right-of-way (ROW).
- A new corridor wide ROW analysis.

This study will **not** be re-opening the project alternatives and intends on keeping the preferred commuter rail alternative mentioned above. The following are **not** included in the scope of the study:

- Create an implementation plan and implementation schedule,
- Provide travel forecasting,
- Estimate ridership,
- Provide a financial analysis, or
- Hold formal public meetings.

New funding sources will be needed to create an implementation plan and a financial plan.

During the 2009 EIS, there were many projects that were assumed to be carried through. Some of these projects have been completed, others have been invalidated. Since the completion of the 2009 EIS, the following conditions/assumptions have changed that will affect this current study:

- The Colorado Rail Relocation Study looked at the possibility of the State of Colorado acquiring the existing BNSF track along U.S. Highway 287. The plan was to assist BNSF moving their freight system to the Eastern Plains and turn the existing track into commuter rail. We now know that proposed Eastern Freight rail Bypass has been declared "inactive" by CDOT and that BNSF will continue to use the existing line for through freight movements.
- The City of Fort Collins has constructed the MAX Bus Rapid Transit (BRT) line running north and south along North College Avenue from Harmony Road to Laporte Avenue. This system is now in service.
- The FLEX bus service is a regional bus route service between Fort Collins, Loveland, Berthoud, and Longmont and is now in service.
- Issues arose during the planning/design of the RTD's North Metro Line. It has since been decided to place single track instead of double track, which will lead to increased travel times in that corridor.

This current study is intended to keep the North I-25 EIS current with the State Rail Plan and stay poised to stay in position for eligibility for any federal funding that may come along. In the last month the project team has met with various stakeholders who are interested in the efforts of this study. The

goals of the one-on-one stakeholder meetings were to inform those affected of the purposes of the study and to discuss the changes since the 2009 EIS. Also, input into the scope of work for the study was solicited. The project team had good discussions at each of the one-on-one meetings. Below is a brief summary of the themes or major points of discussion at each of the meetings:

RTD One-on-One Stakeholder Meeting (August 21)

The project team met with five representatives with RTD at their downtown office. The conversation was focused on the North Metro Line that is currently being constructed from Downtown Union Station to 162nd Avenue. The system is being designed to be single track utilizing electric multiple units (EMU).

In order to minimize cost, the commuter rail system proposes to share track with the RTD North Metro line. RTD verbally indicated they agreed with this concept; however, factors such as additional maintenance, minimal Denver Union Station capacity, and maintaining headways could impact cost. RTD also informed us that there is additional right-of-way within some portions the North Metro corridor that could allow for placement of a second track.

RTD is okay with allowing the diesel multiple unit (DMU) rail cars from the commuter rail if they are FRA compliant. With the North Metro bridges being designed for lighter EMU vehicles, DMU cars would need to be purchased for the North I-25 Commuter Rail that meet the current designed weight restrictions.

North Front Range Metropolitan Planning Organization (August 22)

The project team met with two representatives from the NFRMPO in Fort Collins. They have heard excitement for passenger rail more so in Larimer County than in Weld County. Due to development along the proposed corridor, land use will need to be re-visited. Especially, through towns and along the Weld County Road 7 section. The commuter rail element will be modeled in the 2040 Regional Transportation Plan. The MPO asked the project team to keep them informed on status and updates as the study moves forward.

Additionally, the MPO provided the project team with rough numbers on how the MAX BRT in Fort Collins was performing. During the initial opening phase, when the service was free of charge, ridership was approximately 3,500 persons a day. With the projected ridership number being 1,500 persons per day, this shows us how beneficial more public transportation in this region can be.

Boulder County, City of Longmont, and North Area Transportation Alliance (August 25)

The project team met with a total of four representatives from the three stakeholder agencies. Longmont serves as the approximate central point of the proposed North I-25 commuter rail. RTD also has its Northwest Rail line proposed to run diagonally along State Highway 119 from Boulder to Longmont. It was suggested that the North I-25 commuter rail study analyze how all the passenger and freight lines meet in Longmont. Boulder County suggested it would be good to have an alternative route for either line, in case of emergencies, closures, etc.

Another good recommendation received during this meeting was while updating the operating plan, it would be a good idea to compare proposed commuter rail operating schedules from station to station with the MAX BRT and the FLEX bus services.

Weld County Public Works and Southwest Weld County Communities Meetings (2) (August 27 and September 11)

The project team met with a total of four representatives from three stakeholder agencies (Weld County Public Works, Dacono and Meade) at two meetings at the Weld County Southwest Service Center. The preservation of ROW was the main topic of this meeting. Weld County Public Works staff recommended that it would be helpful to have a detailed graphic showing the ROW of the proposed North I-25 commuter rail. This would give the region a better understanding to future development plans and would allow the various cities and towns to better plan their development projects and reserve key parcels so ROW acquisition for commuter rail is possible at reasonable costs in the future.

The attendees provided a list of their top priorities in terms of transportation. They would like to see the I-25 corridor expanded to three general purpose lanes and a fourth managed lane before rail is implemented. They recommended going forward that there be such a prioritization discussion with other stakeholders throughout the North Front Range.

Town of Berthoud (September 2)

The project team met with two representatives from the Town of Berthoud. The town indicated that if a new double tracked line were constructed through Berthoud that it would best located to the west of the existing track since there are industrial sidings to the east of the existing main track.

In the EIS there was a station location included north of Bunyan Avenue. At this time there is a 60-65 acre field for sale in this location. Also, there is currently an opportunity for Berthoud to purchase a lease of the Historic Depot, currently owned by the Lions Club, using State Historic Funding. Since Berthoud is in the "Center" of the corridor, it was suggested that it might make sense to locate the maintenance facility in the Berthoud vicinity.

Growth in Berthoud, population-wise, is not increasing. Business opportunities within the town seem to be decreasing and it's a concern among town representatives. To further this concern, the town indicated that they had been told by a BNSF representative that there would be no more industrial siding access provided in the Berthoud vicinity.

BNSF (September 3)

The project team met with two representatives from BNSF. The discussion focused on the use and functionality of the BNSF freight system. The BNSF tracks within the study area are rated class 4 capable of operating at 79 miles per hour. If the commuter service desires to exceed 90 miles per hour, separate track must be constructed. Also, with the desire to operate up to 55 passenger trains per day, double tracking would be required in addition to the separate BNSF freight line. However, there is enough ROW to have both systems in the same corridor. The spacing between the tracks needs to be a minimum of 20 feet between track centers. There would also need to be a continuous maintenance road.

It was mentioned to the BNSF personnel that the town of Berthoud was under the impression that there would be no more industrial siding activity in the town. BNSF was surprised with this and asked for the town's contact information to follow up regarding this issue.

Regarding the Technical Advisory Committee, consisting of individual persons for each stakeholder agency, BNSF had the position that they would not be actual members of the TAC. However, they would be more than happy to be available to provide information and input as needed.

City of Loveland (September 11)

The project team met with four representatives from the City of Loveland. The City of Loveland was excited about commuter rail; however they made it clear that the number one priority is getting the third lane of I-25 completed. In their opinion the third lane should have been completed five years ago. They do see rail as a necessity because it is not feasible to keep expanding I-25 to take care of the travel needs of the project population in the North Front Range

The City wanted to know if there was a statewide vision for passenger rail. They agreed that it should be a local effort from town to town to do land use planning and acquire rights of way, but CDOT should be the facilitator and provide leadership. Loveland has been developing a downtown development authority. This presents an opportunity to start investigating potential ROW for a commuter rail station located within downtown.

Larimer County (September 11)

The project team met with one representative from Larimer County. It was mentioned that currently it is the County's focus to get North I-25 widened to three lanes working from the north to south. They anticipate the County will not have much input when it comes to corridor development, due to much of Larimer County within the study area being open space. Development will be more of an individual community effort along the northern portion of the corridor.

City of Fort Collins (September 24)

The project team met with five representatives from the City of Fort Collins. The City recommended NOT penetrating the downtown area with Commuter rail since MAX BRT has been implemented. The proposed commuter northern terminus recommended in the EIS was the Downtown Transit Center. Fort Collins wants the northern commuter rail station to now the South Fort Collins Transit Center.

Fort Collins believes that the City may grow from 155,000 people today to 250,000 by 2040. They believe passenger rail will be necessary with the next 10 to 12 years to ease travel congestion even if I-25 is expanded to 3 general purpose lanes; which happens to be Fort Collins' top transportation priority.

Town of Frederick (October 21)

The project team met with two representatives from Frederick. The Town representatives agreed with the proposal to move the commuter rail away from weld County Road 7 and either into themI-25 median or on the east side of I-25. They also recommended a station be located in the northeast quadrant of SH 52 and I-25 interchange. It was noted that southwest Weld County communities voted down possible membership into RTD in the 2001/2002 timeframe.

North I-25 Commuter Rail EIS Update
One-on-One Meeting
Town of Berthoud, Parsons Brinckerhoff, CDOT
9 a.m. – September 2, 2014
Town of Berthoud

Attendees: Michael Hart (Berthoud Town Administrator), Stephanie Brothers (Berthoud Public Works Director), David Krutsinger (CDOT), Randy Grauberger (Parsons Brinckerhoff), and Carol Parr (CDOT)

Project Overview:

This study is intended to keep the North I-25 EIS current with the State Rail Plan and stay poised in regards to eligibility for any federal funding that may come along.

The goal of these one-on-one meetings is to inform all stakeholders that may be affected by the Commuter Rail Line of intentions and changes. Stakeholder comments related to the Draft Scope of Work and other input are welcome throughout this process.

These three items of the Commuter Rail element of the North I-25 EIS will be updated during this study:

- Capital costs will be updated to reflect 2014 dollars and standard cost category format.
- Operational plan will be updated based on identified changes, compared to prior assumptions/findings, for track, intersections, and right-of-way.
- A new right-of-way (ROW) analysis will be conducted.

What we know since the 2009 EIS:

Conditions / assumptions that have changed since the EIS was completed:

- Eastern freight rail bypass is now inactive. We can assume the freight rail will continue to use existing BNSF track. To accommodate the proposed commuter rail, it is anticipated that a second track parallel to the exiting BNSF track will be required due to the level of service being discussed.
- The MAX BRT is now in service.
- The FLEX bus service is now in service.
- Due to funding issues that RTD has been facing for the whole FasTracks program, on the North Metro RTD line it has been decided to place single track instead of double track for much of the length of the corridor. This could increase total travel time for the North I-25 Commuter Rail from Fort Collins to Denver Union Station by 5 minutes.

The capital cost update will use the standard cost category (SCC) format, which is an FTA and FRA cost format.

There are currently four options that will be evaluated in the capital cost update in the Fort Collins area due to the recent implementation of MAX BRT:

- The commuter rail replaces BRT. This may mean returning money back to the FTA.
- The commuter rail will take up roadway lanes, parking, and/or sidewalks instead of buying property.

- The commuter rail will require the purchase of property and buildings.
- The commuter rail will terminate at the South Fort Collins Transit Station.

The ROW analysis and operating plan will also have impacts to the cost analysis.

What is not included in the study?

The study will not be re-opening the project alternatives. The preferred alternative studied in the EIS will remain. The following are **not** included in the scope of the study:

- Create an implementation plan or implementation schedule,
- Provide travel forecasting or estimate ridership,
- Provide a financial analysis, or
- Hold formal public meetings.

A new funding source will be needed to create an implementation plan and financial plan.

Technical Advisory Committee:

The role of the TAC will be planning level and could consist of providing: staff and/or policy guidance, review documents and strategy guidance, land use or demographic data, and review of any draft documents.

Stephanie Brothers will represent the Town of Berthoud on the Technical Advisory Committee (TAC). Jan Dowker can serve as an alternate if needed.

There is expected to be another Front Summit meeting the week after the November election; either November 12 or 13.

The scope of this study is intended to be a flexible one. All stakeholders are welcome and urged to provide input. This will allow for any potential issues to be raised early in the process.

Other Discussion:

Michael indicated that the BNSF has informed the Town that there will be no more industrial siding activity in Berthoud. The community approached BNSF about locating an intermodal facility in the area but didn't receive a positive response from BNSF. Randy speculated that the BNSF may consider the line too busy with existing freight traffic as has occurred in the past on the BNSF's Brush subdivision in the Fort Morgan area. Stephanie suggested that there are 10 – 15 trains per day moving through Berthoud.

Michael suggested that the new track (if the line is double tracked) through Berthoud would probably be better on the west of the existing track since there are industrial sidings to the east of the main track in Berthoud.

The North I-25 EIS included a station north of Bunyan Ave. There is a vacant field currently for sale in this location; approximately 60-65 acres; to the east of the tracks.

The historic passenger depot has been owned by the Lions Club; however, the Town of Berthoud has an opportunity at this time to purchase or lease the Depot possibly using State Historic Funding. There is a real opportunity for the Town to acquire this Depot at this current time!

Michael noted that the Town of Berthoud is triangulated by Boulder, Fort Collins, and Greeley. It also serves as the midway point between Colorado State University and University of Colorado-Boulder. Commuter rail would serve these students well!

Ames University is looking at the northeast corner of I-25/SH56 interchange area as a possible location for a new facility. The Town would like them to consider the southeast quadrant of that interchange.

Transportation Alternatives in Berthoud:

- The Berthoud Area Transportation Service (BATS) is the local transit system. It provides on-demand service with at least a days' notice around Berthoud and/or to the nearby towns of Loveland and Longmont. This service is having some financial trouble. If the I-25/SH 56 interchange area develops, this BATS service could provide connections to travel options along I-25.
- The FLEX bus service is a regional service serving Fort Collins, Loveland, Berthoud, and Longmont. This service has been quite successful charging fares of $1.25
- The Rural Alternative Transportation (RAFT) is a volunteer service for senior and disabled persons to and from Loveland.

Michael noted that the job market has been shifting to Longmont and communities to the north, rather than Boulder/Longmont, as was anticipated in the North I-25 EIS.

Randy mentioned Bus Rapid Transit (BRT) is being pursued by RTD (TIGER grants) on the SH 119 diagonal between Longmont and Boulder and also US 287 between Longmont and Broomfield. This could be an interim solution in advance of Northwest Rail or could eventually become a final solution.

The Berthoud Comprehensive Plan is currently available on-line. The Berthoud Transportation Plan is due to be completed this fall. Stephanie will e-mail a Draft of the document to David and Randy.

Michael indicated that Berthoud is a bedroom community and has not seen much growth in recent years.

Michael suggested that it might make sense to locate a commuter rail maintenance facility in the Berthoud vicinity due to its central location within the corridor.

There are no rail served customers in Berthoud south of SH 56. Two customers north of SH 56 (Mountain Avenue) are Lehman Printing Center and Sonoco Products Co.

BNSF was able to replace the Little Thompson Bridge in one week after the September 2013 flooding.

Information from the various communities about their station plans, etc. will be sought during the technical Advisory Committee process.

Carol Parr described the upcoming meetings for the Regional Coordinating Council (RCC). That group is made up of local elected officials discussing transportation issues in the North I-25 Corridor. The design for I-25 improvements is at the 30% level.

Berthoud does not support turning existing third lanes into toll lanes or having private companies get the revenue. This is something CDOT should do. Also, a south bound I-25 climbing lane near the dirt

bike track and north bound climbing lane north of SH56 with trucks restricted to traveling in the right lane are desired.

North I-25 Commuter Rail EIS Update
One-on-One Meeting
BNSF Railway, CDOT and Parsons Brinckerhoff
1 p.m. – September 3, 2014
CDOT Aspen Conference Room

Attendees: Mark Imhoff (CDOT), David Krutsinger (CDOT), DJ Mitchell (BNSF), Cathy Norris (BNSF), Randy Grauberger (Parsons Brinckerhoff (PB) Project Team), Pete Rickershauser (PB Project Team)

Project Overview:

This study is intended to keep the North I-25 EIS current with the State Rail Plan and stay poised in regards to eligibility for any federal funding that may come along.

The goal of these one-on-one meetings is to inform all stakeholders that may be affected by the Commuter Rail Line of intentions and changes. Stakeholder comments related to the Draft Scope of Work and other input are welcome throughout this process.

These three items of the Commuter Rail element of the North I-25 EIS will be updated during this study:

- Capital costs will be updated to reflect 2014 dollars and FRA/FTA standard cost categories.
- Operational plan will be updated based on identified changes, compared to prior assumptions/findings, for track, intersections, and right-of-way.
- A new right-of-way (ROW) analysis will be conducted.

What we know since the 2009 EIS:

Conditions / assumptions that have changed since the EIS was completed:

- Eastern freight rail bypass is now inactive. We can assume the freight rail will continue to use existing BNSF track. It is expected that a second track parallel to the existing BNSF track will be required due to the level of service being discussed.
- The MAX BRT is now in service.
- The FLEX bus service is now in service.
- Due to issues on the North Metro RTD line, it has been decided to construct and begin operations with single track instead of double track. This could increase total travel time for the North I-25 Commuter Rail from Fort Collins to Denver Union Station by 5 minutes.

The capital cost update will use the standard FTA and FRA cost format.

There are currently four options that will be evaluated in the capital cost update in the Fort Collins area due to the recent implementation of MAX BRT:

- The commuter rail replaces BRT. This may mean returning money back to the FTA.
- The commuter rail will take up roadway lanes, parking, and/or sidewalks instead of buying property.
- The commuter rail will require the purchase of property.
- The commuter rail will terminate at the South Fort Collins Transit Station.

The ROW analysis and operating plan will also have impacts to the cost analysis.

What is not included in the study?

The study will not be re-opening the project alternatives. The preferred alternative studied in the EIS will remain. The following are **not** included in the scope of the study:

- Create an implementation plan or implementation schedule,
- Provide travel forecasting or estimation of ridership,
- Provide a financial analysis, or
- Hold formal public meetings.

A new funding source will be needed to create an implementation plan and financial plan.

Technical Advisory Committee:

The role of the TAC will be planning level and could consist of providing: staff and/or policy guidance, review documents and strategy guidance, land use or demographic data, and review of any draft documents.

There is expected to be another Front Summit meeting the week after the November election; either November 12 or 13. Mark indicated he would be unable to attend if it is on the 12th. Randy will advise Joan Shaffer of this.

The scope of this study is intended to be a flexible one. All stakeholders are welcome and urged to provide input. This will allow for any potential issues to be raised early in the process.

Other Discussion:

DJ Mitchell asked if there would be a formal Revised Record of Decision. David stated there would not; this project is not being taken to 30% design. David noted that the ridership for commuter rail in the North I-25 EIS was 3,000 riders per day. This is a conceptual framework for an eventual Tier 2 EIS.

David described the new Intercity Express (IX) bus service being implemented by CDOT. It will connect the six largest transit services in the state. An example fare will be $10 each way from Fort Collins to Denver Union Station. A FLEX service is being operated between Fort Collins and Longmont along US 287. The fare is $1.25 per ride. The FLEX seems to be more of a "local" operating in the North Front Range Area.

The next item was to discuss the "BNSF Discussion Topics" that had been provided to DJ earlier.

- DJ Mitchell suggested that the stakeholder/public information process for this Study seemed adequate for "updating" an element of an EIS.
- DJ Mitchell suggested that it was not BNSF's policy to be an "official" member of the Technical Advisory Committee (TAC) or a Study such as this. DJ Mitchell indicated he would come to Colorado to meet with the TAC whenever the TAC needed him, provided he was given adequate notice for scheduling purposes.
- DJ Mitchell believes there are many benefits for the railroads and the State and its various stakeholders in creating a single passenger rail vision for the entire Front Range.
- DJ Mitchell stated that the greatly increasing volume of automobile traffic is more of an issue in the Front Range than the increase in rail traffic as it relates to grade crossing safety. Also, the elimination of grade crossings or the building of grade separations reduces the noise impacts of

train horns in communities. The City of Loveland may be coordinating an effort to inventory Quiet Zones with the Front Range. Action Item: Follow-up with Loveland.

- The BNSF tracks within the Study area are Class 4 track; capable of operating at 79 miles per hour. If a service desires to exceed 90 miles per hour, it must provide its own track.
- If there are to be 55 passenger trains per day, a double track is necessary to operate these commuter trains and also BNSF's freight trains in the same corridor.
- Positive Train Control (PTC) will be required if there are more than 6 passenger trains per day. The cost of PTC is somewhere between $3 million and $7 million per mile.
- The project corridor is currently carrying between 23 and 26 trains per day. BNSF's busiest commuter route in Hinsdale, Illinois carries 150 trains per day.
- BNSF's freight trains in this corridor do not exceed 45 mph. Some passenger speeds in the corridor may be limited to 60 instead of 79.
- DJ Mitchell suggested that the Update to the State Rail Plan should contain community guidelines for at-grade rail/highway crossings. Guidelines help to inform decisions and anticipate the interrelationships of safety, auto and train traffic movements, pedestrian/bike movements, and long-term economic development needs.
- For the level of operations being proposed for this service, DJ Mitchell suggested that double track with additional passing sidings every 5 – 6 miles would be required. The spacing between the tracks would be at a minimum 20 feet between track centers. A continuous maintenance road would also be required to ensure tracks can be repaired to minimize service impacts/delays.
- A commuter rail program such as this must be prepared to pay for the capital costs and ongoing operations and maintenance costs necessary to provide the desired service.
- Randy noted the when he and David met with Town of Berthoud, the Town's Michael Hart indicated that a BNSF representative has informed the Town that there will be no more industrial sidings constructed to permit additional freight rail customers to be served in Berthoud. Both DJ Mitchell and Cathy Norris were surprised to hear this, and Cathy asked that Randy provide her with Michael's contact information so that she could contact him in regard to this issue.
- DJ Mitchell indicated he would not be able to attend the TAC meeting proposed for September 25. Pete Rickershauser will provide the BNSF related PowerPoint presentation to the TAC.

Mark asked Randy to inform Joan Shaffer that he would not be able to attend the Front Summit if it is held on November 12.

North I-25 Commuter Rail EIS Update

One-on-One Meeting

Boulder County, City of Longmont, North Area Transportation Alliance, CDOT, Parsons Brinckerhoff

11 a.m. - August 25, 2014

Attendees: George Gerstle (Boulder), Phil Greenwald (Longmont), Jeanne Shreve (NATA), Karen Stuart (NATA), David Krutsinger (CDOT), Randy Grauberger (PB), Lukas Schroeder (PB)

Project Overview:

Three items of the Commuter Rail element of the North I-25 EIS will be updated during this study:

- Capital costs will be updated to reflect 2014 dollars.
- Operational plan will be updated based on identified changes, compared to prior assumptions/findings, for track, intersections, and right-of-way.
- A new right-of-way analysis will be conducted.

What we know since the 2009 EIS:

Conditions / assumptions that have changed since the EIS was completed:

- Eastern freight rail bypass is now inactive. We can assume the freight rail will continue to use existing BNSF track. For commuter rail to operate in this corridor it is now anticipated that a second track parallel to the exiting BNSF track would be needed.
- The MAX BRT is now in service.
- The FLEX bus service is now in service.

The capital cost update will use the standard FTA cost format. There are currently four options that are proposed to be evaluated in the capital cost update:

- The commuter rail replaces BRT. This may mean returning money back to the FTA.
- The commuter rail will take up roadway lanes, parking, and/or sidewalks instead of buying property.
- The commuter rail will require the purchase of property.
- The commuter rail will terminate at the South Fort Collins Transit Station.

When updating the Operating Plan, it was recommended to re-visit the time schedules from station to station using the MAX BRT and the FLEX bus service as examples.

What is not included in the study?

The study will not be re-opening the project alternatives. The preferred alternative studied in the EIS will remain. The following are **not** included in the scope of the study:

- Create an implementation plan or implementation schedule,
- Provide travel forecasting or estimate ridership,
- Provide a financial analysis, or
- Hold formal public meetings.

Technical Advisory Committee:

The role of the TAC will be focused at the planning level and could consist of providing: staff and/or policy guidance, reviewing documents and strategy guidance, land use or demographic data, and reviewing of the draft document.

Phil Greenwald will be the TAC member for the City of Longmont.

Either Scott McCarey or George Gerstle will assume the TAC role for the Boulder County. They will make an official decision at a later date.

Jeanne Shreve might assume the role of TAC for the North Area Transportation Alliance. They will also be making their official decision at a later date.

Action Item: Provide a member for the TAC.

Public Input Strategies:

Scope Refinement

George stated that there may be a need for more public involvement considering the fact that this study may be looking at double tracking the BNSF through the communities of Fort Collins, Loveland, Berthoud and Longmont. The North I-25 EIS assumed single track with some passing sidings. The scope of this study is intended to be a flexible one. All stakeholders are welcome and urged to provide input. This will allow for any potential issues to be raised early in the process.

Policy Briefings:

Suggestions on who to include in the policy briefings:

- North Front Range Metropolitan Planning Organization (NFRMPO)
- 287 Coalition
- Northwest Area Mobility Study (NAMS) Policy Committee
- City of Longmont
- US 36 Coalition
- NATA

Discussion:

DMU vehicles weigh more than EMU. The RTD North Metro Line is being designed for EMU at a weight of 44,611 lbs per axle. Currently, the estimated weight of the DMU's, with a full fuel and passenger load, and that are possibly available commercially to operate on the North I-25 Commuter Rail line, is 44,155 lbs per axle.

George noted that in the NAMS there was a suggestion was made to look into a hybrid vehicle that can run on both DMU and EMU.

There was a discussion as to the safety issues related to tank cars operating on the BNSF line passing through all of the communities between Fort Collins and Denver. This is an area of concern due to

recent high profile accidents from oil tank car accidents. David spoke to the state's current procedures for working with the railroads and community and state safety and emergency response teams in terms of Bakken shale crude oil transportation.

Quiet Zones – Phil suggested that the project team coordinate with the City of Loveland to acquire a list of quiet zones along the corridor.

George feels that if the North I-25 Commuter Rail can advance the Northwest Rail, then that would be good for Boulder County. Phil mentioned that he feels that Longmont is neutral on that since a North I-25 commuter rail could connect with both the Northwest Rail line and North Metro line in RTD's FasTracks system.

George asked if purchasing time slots from BNSF will be incorporated in the capital cost study. David suggested that a similar methodology to that used in the NAMS Study could be utilized for this update.

It was suggested that the study should analyze how the all the proposed passenger and freight lines will meet in Longmont. With the proposed RTD NW Rail Line meeting up in Longmont, as well as the North I-25 Commuter Rail line, it would be a good to ensure commuter rail can run on either line in an emergency, in case of closures, etc. For planning purposes, a Longmont Station near 1st/Main should be assumed per the latest NW Rail work with RTD, not the Sugar Mill location identified in the North I-25 EIS.

The need to evaluate the use, and cost, of chambering tracks for BNSF's freight operation will be evaluated in this Update as it was in the NAMS.

The following options may exist for future operation of North I-25 Commuter Rail:

- Use current RTD systems operation contractor,
- Hire and train CDOT operators,
- Hire a third party systems operation contractor, or
- Have BNSF operate the service.

BRT ridership numbers were calculated to be at 3,500 persons a day. That is approximately 2,000 more riders per day than expected. Free rides ceased on 8/23. Need to wait to hear back on this impact to ridership data with fares being collected is available. CSU students start school on 8/25 and will be offered free rides on the MAX BRT.

Right-of-way was briefly discussed. If any of the North I-25 Commuter Rail right-of-way passes through open space, such should be identified.

Monthly "Bagels with Barry" – Jeanne suggested that the CDOT Transportation Commissioners, Heather Barry and Kathy Gilliland meet together if possible to hear about the progress of this study. She noted that the NATA organization and others in the Boulder/Broomfield area have a monthly event "Bagels with Barry" to discuss transportation issues with Commissioner Barry.

North I-25 Commuter Rail EIS Update
One-on-One Meeting
City of Fort Collins, Parsons Brinckerhoff, CDOT
2 p.m. – September 24, 2014
Fort Collins

Attendees: Darin Atteberry (Fort Collins), Kurt Ravenschlag (Fort Collins), Timothy Wilder (Fort Collins), Mark Jackson (Fort Collins), Paul Sizemore (Fort Collins), David Krutsinger (CDOT), Randy Grauberger (PB), Jack Tone (PB) Lukas Schroeder (PB), Mike Anders (HC Peck)

Project Overview:

This study is intended to keep the North I-25 EIS current with the State Rail Plan and stay poised in regards to eligibility for any federal funding that may come along.

The goal of these one-on-one meetings is to inform all stakeholders that may be affected by the Commuter Rail Line of the purpose of the "Update" and changes in the corridor. Stakeholder comments related to the Scope of Work and other input are welcome throughout this process.

These three items of the Commuter Rail element of the North I-25 EIS will be updated during this study:

- Capital costs will be updated to reflect 2014 dollars and FTA/FRA standard cost categories.
- Operational plan will be updated based on identified changes, compared to prior assumptions/findings, for track, intersections, and right-of-way.
- A new right-of-way (ROW) analysis will be conducted.

What we know since the 2009 EIS:

Conditions / assumptions that have changed since the EIS was completed:

- Eastern freight rail bypass is now inactive. We can assume the freight rail will continue to use existing BNSF track. It is expected that a second track parallel to the exiting BNSF track will be required to accommodate commuter rail due to the level of service proposed by and documented in the North I-25 EIS.
- The MAX BRT is now in service.
- The FLEX bus service is now in service.
- Due to issues RTD has faced for the whole FasTracks Program and on the North Metro RTD line, RTD has decided to place single track instead of double track. This could increase total travel time for the proposed North I-25 Commuter Rail from Fort Collins to Denver Union Station by 5 minutes.

There are currently four options that are proposed to be evaluated in the capital cost update in the Fort Collins area related to the recent implementation of MAX BRT and the continuing presence of freight rail service in the corridor:

- The commuter rail replaces BRT. This may mean returning money back to the FTA.
    - **Fort Collins was not in favor of analyzing this option.**
- The commuter rail will take up roadway lanes, parking, and/or sidewalks instead of buying property.

- The commuter rail will require the purchase of property.
- The commuter rail will terminate at the South Fort Collins Transit Station.

The ROW analysis and operating plan will also have impacts to the cost analysis.

What is not included in the study?

The study will not be re-opening the project alternatives. The preferred alternative studied in the EIS will remain. The following are **not** included in the scope of the study:

- Create an implementation plan or implementation schedule,
- Provide travel forecasting or estimate ridership,
- Provide a financial analysis, or
- Hold formal public meetings.

A new funding source will be needed to create an implementation plan and financial plan.

Technical Advisory Committee:

The role of the TAC will be planning level and could consist of providing: staff and/or policy guidance, review documents and strategy guidance, land use or demographic data, and review of any draft documents.

Kurt Ravenschlag will represent the City of Fort Collins on the TAC committee for this study.

Discussion:

Although official ridership numbers for the MAX BRT system were not available at the meeting, Mark mentioned that the MAX is currently above capacity during peak hours and special events such as Brewfest.

Mark asked if any of the flood impact has had an impact on the study. The project team hadn't heard anything regarding the flooding that would affect the commuter rail corridor. Mark also mentioned that there has been some significant river and stream channel erosion within Loveland.

Kurt suggested that the study, especially in or near Fort Collins, could be considered a "constructability review" in order to see if the project was still feasible. David agreed with this view.

Fort Collins does not support analysis of cost estimate to replace BRT with Commuter Rail. The EIS had envisioned that the two would work together and be in the same general alignment. Given that freight rail service will remain in the corridor, the other three cost estimation options may still have value. Fort Collins expects that it would be difficult to "take" street right-of-way, and expensive to purchase real-estate to make room for a double-tracking of the rail line. Terminating commuter rail at the BRT South Station seems most reasonable at this point. Note that the South Station would likely need to convert from surface to structured parking to accommodate more parked cars.

When Fort Collins was collaborating with BNSF during the planning phase of the MAX BRT system, BNSF wanted the BRT on the outer 25 feet of BNSF's right-of-way. This would allow for double tracking if BNSF saw it fit to expand their system through Fort Collins at some point in the future.

Darren had concerns about the congestion and growth in Fort Collins in the next 25 years. Population projections for the Fort Collins area alone could be more than an additional 100,000 people by 2040, growing from 155,000 people today to 250,000 by 2040. The main priority is getting the I-25 corridor expanded to three lanes, but he envisions rail being a necessity within the next 10-12 years. David noted that forecasts for the entire North Front Range Region are approximately 400,000 more people, and for the Front Range of Colorado (Fort Collins to Pueblo) as many as 2 million more people by 2040.

Darren also had concerns about the commute to DIA, not just for Fort Collins, but for Cheyenne and Laramie, Wyoming. The commute to DIA currently is 50 minutes, and depending on traffic, which is usually heavy, can reach into the hour and a half to two hour range. This is definitely an issue of the same proportion as the commute to downtown Denver. Fort Collins liked the idea of the northern terminus being located at or near the MAX BRT's South Transit Center. The MAX BRT system could be used as a feeder to the commuter rail.

Darren asked if CDOT saw the Northern Front Range agencies and municipalities as being organized and focused compared to other regions. David as the CDOT representative said that he feels that the North Front Range is just as focused as the I-70 region, and more so than the south region. CDOT sees the I-25 North corridor as a big issue and it is definitely on CDOT's radar. Darren feels like Fort Collins isn't getting the attention that other areas are receiving, such as south of Denver and downtown.

David noted that no public hearings or open houses are scheduled for this study because the alternatives are not being re-opened. The Fort Collins representatives suggested that their community is very engaged in projects such as this and that it may be desirable to have a public meeting of some type in the Fort Collins community. They feel it is an opportunity to raise advocacy and awareness. The more the residents of the areas; who would potentially be served by the commuter rail in the future; hear of this proposed system, perhaps the more likely they will buy in. Fort Collins offered up some website space to provide updates and links to the commuter rail. David offered to give any presentations at City Council or Transportation Advisory Board meetings if the City of Fort Collins is interested. Darren mentioned that there are elections for new Board members next April (2015). It might be worthwhile to present to them the study and plan for commuter rail at that time. In the meantime, Fort Collins definitely wants to be kept in the loop on any updates or major decisions. One-page written status updates may be the best way to keep busy elected officials informed.

There will be two policy briefings; North Front Range MPO and US 287 Coalition. Mark mentioned that he is involved with the US 287 Coalition. If he can help in any way, let him know.

Timothy Wilder is involved with FC Moves. Fort Collis Moves is a portion of the Department of Public Works that handles alternate modes planning, including bicycles and pedestrians.

It was noted that Fort Collins is a 'regional attractor' for employment.

Randy gave a background on the 2012 Colorado State Freight and Passenger Rail Plan and explained that the commuter rail line from Denver Union Station to Fort Collins had the highest priority of any commuter rail service in the State Rail Plan.

North I-25 Commuter Rail EIS Update
One-on-One Meeting
Town of Frederick and Parsons Brinckerhoff
10:30 a.m. – October 21, 2014
Frederick Town Hall

Attendees: Dick Leffler (Engineering and Utilities Director), Steve Stanish (Civil Engineer), Randy Grauberger (PB)

Randy noted that this is a follow-up meeting to the two earlier meetings hosted by Weld County. Dick thanked Randy for making time available for this meeting.

Project Overview:

This study is intended to keep the EIS current with the State Rail Plan and stay poised in regards to eligibility for any federal funding that may come along.

The goal of these one-on-one meetings is to inform all stakeholders that may be affected by the Commuter Rail Line of intentions and changes. Stakeholder comments and other input are welcome throughout this process.

These three items of the Commuter Rail element of the North I-25 EIS will be updated during this study:

- Capital costs will be updated to reflect 2014 dollars and FTA/FRA standard cost categories.
- Operational plan will be updated based on identified changes, compared to prior assumptions/findings, for track, intersections, and right-of-way.
- A new right-of-way (ROW) analysis will be conducted.

What we know since the 2009 EIS:

Conditions / assumptions that have changed since the EIS was completed:

- Eastern freight rail bypass is now inactive. Randy explained details of that 2009 Study and how CDOT now considers that project to be "inactive". Therefore, we can assume the freight rail will continue to use existing BNSF track. Anticipated to run a second track parallel to the exiting BNSF track.
- Fort Collins' MAX BRT is now in service.
- The FLEX bus service is now in service between Fort Collins and Longmont.
- The new northern terminus for the RTD Northwest Rail Line is proposed to be located at 1st Avenue and Main Street in Longmont.
- Due to issues on the North Metro RTD line, it has been decided to place single track instead of double track. This could increase total travel time for the North I-25 Commuter Rail from Fort Collins to Denver Union Station by 5 minutes.

The capital cost update will use the standard FTA and FRA cost format.

There are currently four options that will be evaluated in the capital cost update in the Fort Collins area due to the recent implementation of MAX BRT:

- The commuter rail replaces BRT. This may mean returning money back to the FTA.

- The commuter rail will take up roadway lanes, parking, and/or sidewalks instead of buying property.
- The commuter rail will require the purchase of property.
- The commuter rail will terminate at the South Fort Collins Transit Station. This is the option preferred by Fort Collins.

The ROW analysis and operating plan will also have impacts to the cost analysis.

What is not included in the study?

The study will not be re-opening the project alternatives. The preferred alternative studied in the EIS will remain. The following are **not** included in the scope of the study:

- Create an implementation plan,
- Provide travel forecasting,
- Estimate ridership,
- Create a schedule,
- Provide a financial analysis, or
- Hold formal public meetings.

A new funding source will be needed to create an implementation plan and financial plan.

Technical Advisory Committee:

The role of the TAC will be planning level and could consist of providing: staff and/or policy guidance, review documents and strategy guidance, land use or demographic data, and review of any draft documents.

Dick Leffler will be shown as the TAC member for Frederick and Steve Stanish will be the TAC Alternate for Frederick.

Public Input Strategies:

The study will not utilize any formal Public Meetings/Open Houses in this process since there will not be new alternatives evaluated.

Discussion:

Dick provided Randy with a copy of a December 22, 2008 letter from the Town of Frederick to CDOT in regard to the Town's support of commuter rail as part of the North I-25 EIS. He also gave Randy a copy of the memo (July 17, 2009) from CDOT's Carol Parr to the North I-25 EIS TAC and Regional Coordinating Council modifying the commuter rail vision of the EIS.

RTD's Northwest Area Mobility Study looked at an extension to the North Metro Rail line from 162nd to Longmont. That study suggested eliminating the Weld County Road 7 alignment between SH 119 and Weld County Road 8 and instead said the commuter rail Line should be either in the I-25 Median or along one side or the other. Frederick agreed with moving the commuter rail line away from Weld County Road 7 and either into the I-25 median or to the east side of I-25.

Frederick also supports moving the station for the area adjacent to Weld County Road 8 up to the area adjacent to the I-25 and SH 52 interchange.

Frederick looks forward to “Bustang” beginning service and hope that additional stops will be added in the future.

The Weld County southwest communities voted down possible membership into the RTD back in the 2001/2002 timeframe.

North I-25 Commuter Rail EIS Update
One-on-One Meeting
Larimer County, Parsons Brinckerhoff, CDOT
11 a.m. – September 11, 2014
Fort Collins

Attendees: Randy Grauberger (PB), Lukas Schroeder (PB), David Krutsinger (CDOT), Suzette Mallette (Larimer County)

Project Overview:

This study is intended to keep the North I-25 EIS current with the State Rail Plan and stay poised in regards to eligibility for any federal funding that may come along.

The goal of these one-on-one meetings is to inform all stakeholders that may be affected by the Commuter Rail Line of the purpose for the "Update" and changes within the corridor. Stakeholder comments related to the Draft Scope of Work and other input are welcome throughout this process.

These three items of the Commuter Rail element of the North I-25 EIS will be updated during this study:

- Capital costs will be updated to reflect 2014 dollars and FTA/FRA standard cost categories.
- Operational plan will be updated based on identified changes, compared to prior assumptions/findings, for track, intersections, and right-of-way.
- A new right-of-way (ROW) analysis will be conducted.

What we know since the 2009 EIS:

Conditions / assumptions that have changed since the EIS was completed:

- Eastern freight rail bypass is now inactive. We can assume the freight rail will continue to use existing BNSF track. It is expected that a second track parallel to the exiting BNSF track will be required to accommodate commuter rail, due to the level of service proposed by and documented in the North I-25 EIS.
- The MAX BRT is now in service.
- The FLEX bus service is now in service.
- Due to funding issues faced by RTD for the FasTracks program and on the North Metro RTD line, RTD has decided to place single track instead of double track. This could increase total travel time for the proposed North I-25 Commuter Rail from Fort Collins to Denver Union Station by 5 minutes.

There are currently four options that are proposed to be evaluated in the capital cost update in the Fort Collins area as relates to the implementation of MAX BRT and the continuing presence of freight rail in the corridor:

- The commuter rail replaces BRT. This may mean returning money back to the FTA.
- The commuter rail will take up roadway lanes, parking, and/or sidewalks instead of buying property.
- The commuter rail will require the purchase of property.
- The commuter rail will terminate at the South Fort Collins Transit Station.

The ROW analysis and operating plan will also have impacts to the cost analysis.

What is not included in the study?

The study will not be re-opening the project alternatives. The preferred alternative studied in the EIS will remain. The following are **not** included in the scope of the study:

- Create an implementation plan or implementation schedule,
- Provide travel forecasting or estimate ridership,
- Provide a financial analysis, or
- Hold formal public meetings.

New funding sources will be needed to create an implementation plan and financial plan.

Technical Advisory Committee:

The role of the TAC will be planning level and could consist of providing: staff and/or policy guidance, review documents and strategy guidance, land use or demographic data, and review of any draft documents.

Suzette will be the representative for Larimer County on the Technical Advisory Committee (TAC).

Suzette recommended that the TAC meetings have a call-in option for those members who are unable to travel due to schedule limitations. It will be difficult to coordinate and get all of the stakeholders in one place at one time.

With the call for projects in the North Front Range approaching this November through December, it will get very busy and could become difficult for attendees to attend the TAC meetings.

The first TAC meeting is tentatively set for September 25th.

Discussion:

The ROW development will have a focus on the Highway 287 corridor.

At the EIS-proposed service levels, BNSF cannot reasonably accommodate commuter rail on the existing track. However, BNSF would be willing to consider commuter rail operating within BNSF right of way on separate track adjacent to the BNSF's freight track. The new track would be on minimum spacing of 25 feet between track centers.

Congress has mandated a Positive Train Control (PTC) requirement for all passenger rail and some hazardous material transport. With this requirement, costs are anticipated to increase. This will be included in the cost update.

BNSF has opted to not be an "official member" of the TAC. They have agreed to provide participation as needed, but will not be involved in a full "TAC member" capacity.

Suzette anticipates Larimer County to not have much input on the corridor development, due to much of the corridor within Larimer County's ROW to within municipal boundaries. Development within the individual cities will be the local agencies responsibility. Larimer County does have mapping information it can offer to support the right-of-way analysis by PB.

Larimer County's priority is to focus on the third lane widening of I-25 starting from the north and working south. This is because of expectations for currently-available RAMP money which appears to be use-it-or-lose-it.

The NFRMPO has access to a joint household study that was published in 2009/2010. This was a part of a joint study between the NFRMPO, DRCOG, PPACG and PACOG. This should be would be a good reference to acquire traffic counts and other origin/destination data along the corridor.

Suzette thought that 10 years ago approximately 15 freight trains went through Fort Collins per day. BNSF has indicated that freight movements today range from 12 to 24 trains per day.

Suzette concurred with the "Update" approach emphasizing public information through press releases and website information.

North I-25 Commuter Rail EIS Update
One-on-One Meeting
City of Loveland, Parsons Brinckerhoff, CDOT
8 a.m. – September 11, 2014
City of Loveland

Attendees: Randy Grauberger (PB), Lukas Schroeder (PB), David Krutsinger (CDOT), Cecil Gutierrez (Loveland), Bill Cahill (Loveland), Chauncey Taylor (Loveland), Dave Klockeman (Loveland), Kathy Gilliland (CDOT Transportation Commissioner)

Project Overview:

This study is intended to keep the North I-25 EIS current with the State Rail Plan and stay poised in regards to eligibility for any federal funding that may come along.

The goal of these one-on-one meetings is to inform all stakeholders that may be affected by the Commuter Rail Line of the purpose of the "Update" and changes within the corridor. Stakeholder comments related to the Scope of Work and other input are welcome throughout this process.

These three items of the Commuter Rail element of the North I-25 EIS will be updated during this study:

- Capital costs will be updated to reflect 2014 dollars and FTA/FRA standard cost categories.
- Operational plan will be updated based on identified changes, compared to prior assumptions/findings, for track, intersections, and right-of-way.
- A new right-of-way (ROW) analysis will be conducted.

What we know since the 2009 EIS:

Conditions / assumptions that have changed since the EIS was completed:

- Eastern freight rail bypass is now inactive. We can assume the freight rail will continue to use existing BNSF track. It is expected that a second track parallel to the exiting BNSF track will be required to accommodate commuter rail due to the level of service proposed by and documented in the North I-25 EIS.
- The MAX BRT is now in service.
- The FLEX bus service is now in service.
- Due to issues RTD has faced for the whole FasTracks Program and on the North Metro RTD line, RTD has decided to place single track instead of double track. This could increase total travel time for the proposed North I-25 Commuter Rail from Fort Collins to Denver Union Station by 5 minutes.

There are currently four options that are proposed to be evaluated in the capital cost update in the Fort Collins area related to the recent implementation of MAX BRT and the continuing presence of freight rail service in the corridor:

- The commuter rail replaces BRT. This may mean returning money back to the FTA.
- The commuter rail will take up roadway lanes, parking, and/or sidewalks instead of buying property.
- The commuter rail will require the purchase of property.

- The commuter rail will terminate at the South Fort Collins Transit Station.

The ROW analysis and operating plan will also have impacts to the cost analysis.

What is not included in the study?

The study will not be re-opening the project alternatives. The preferred alternative studied in the EIS will remain. The following are **not** included in the scope of the study:

- Create an implementation plan or implementation schedule,
- Provide travel forecasting or Estimate ridership,
- Provide a financial analysis, or
- Hold formal public meetings.

Funding sources will need to be identified to create an implementation plan and financial plan.

History of Rail Efforts in the North Front Range

Eastern Colorado Mobility Study - A 2002 CDOT study that looked at rail corridor and other freight alternatives along Colorado's eastern plains.

Colorado Rail Relocation Implementation Study (aka Rail Relocation for Colorado Communities or R2C2) - A 2009 CDOT study that assessed the feasibility of relocating through-rail freight traffic off of the Front Range and onto a new north/south alignment on the eastern Colorado plains between Brush and Las Animas.

Super Slab (more recently known as the Prairie Falcon Parkway) - A proposed transportation corridor that would run from Pueblo to north of Fort Collins. It would likely consist of a tolled highway, rail lines, and utilities.

Mayor Gutierrez asked if there is a current state vision for rail. David said that there is not, and that the railroads are encouraging the state to develop such an overall vision instead of working "project by project".

Technical Advisory Committee:

The role of the TAC will be planning level and could consist of providing: staff and/or policy guidance, review documents and strategy guidance, land use or demographic data, and review of any draft documents.

Dave Klockeman will be the TAC representative for the City of Loveland. Dave would like to see there be no "late adjustments" to the study as took place at the end of the EIS development which was frustrating for him.

D**iscussion and Input from City of Loveland:**

Mayor Gutierrez asked who is responsible for acquiring ROW and coordinating the effort throughout the corridor. David said the State sees it as its responsibility to facilitate coordination among the various stakeholders and MPOs. CDOT may have some responsibility to offer up portions of its right-of-way or acquire some portions of the right-of-way. However, it is be a local government responsibility for land

use planning, zoning, to acquire the remaining ROW, and to preserve the opportunity for future commuter rail development.

I-25 Corridor

A Public/Private Partnership was attempted for the expansion of I-25 between SH 7 and SH 66. CDOT has a total of $85 million in available funding. Currently $55 million has been allocated to the 120th to E-470 section of I-25. It remains to be determined what the remaining funding will be used for. With tolling, the remaining dollars can be made to go further. Without tolling, less can be done, or it will take longer to assemble additional funds.

There is currently a push to have the next improvements to I-25 take place in the Harmony Road to US 34 section; leapfrogging the SH 66 to US 34 section.

David was asked "What is the proposed product of the current Commuter Rail EIS Update Study?

- Putting the capital cost in to a standard format in order to apply and possibly secure FRA or FTA funding; and
- Creating a plan, establishing an idea of where the project can go from here. This study could serve as a useful tool in collaboration efforts with RTD if they want to expand their system.

Mayor Gutierrez suggested that from what he has heard and witnessed from the citizens of Loveland, the priorities in the area are as follows:

- Secure funding for transportation projects
- Project priority:
    1. 3rd lane on I-25
    2. Commuter Rail

RTD's North Metro Line

The North Metro Line will be Electrical Multiple Unit (EMU) from Denver Union Station up to 162nd Avenue. The North I-25 commuter rail is proposed to be Diesel Multiple Unit (DMU), but will be able to run on RTD's EMU track from 162nd into DUS. Currently, there is no funding and no schedule for the RTD North Metro line from 124th Ave to 162nd Ave, which is the proposed project terminus.

Northwest Area Mobility Study

It appears that RTD's Northwest line won't be implemented past Westminster until sometime after 2040 unless new funding sources are found.

Randy mentioned Bus Rapid Transit (BRT) is being pursued by RTD (TIGER grants) on the SH 119 diagonal between Longmont and Boulder and also US 287 between Longmont and Broomfield. This could be an interim solution in advance of Northwest Rail or could eventually become a final solution. (*It has now been announced that RTD was NOT awarded its TIGER Grant in the current grant application cycle.*)

Further Discussion

Chauncey was concerned that the federal fuel tax does not always get used for transportation projects. David stated that Colorado is now actually receiving more federal transportation tax dollars than it sends

to Washington on an annual basis. David also noted that the fuel/gas tax has not been adjusted for inflation in over 20 years.

The City of Loveland has been developing a downtown development authority. This would be an opportunity to start investigating potential ROW for a commuter rail station location.

Will recommended that this Commuter Rail EIS Update study adopt a vision, even if that vision is to have a document shelf ready for when funding comes available. It would help stakeholders understand the direction CDOT wants to take this effort. Mayor Gutierrez had a concern that all the transportation money is going to the Denver Metro Area for lane expansion and it never gets used in the North Front Range.

It was stressed by the City of Loveland that we should not go to the public until there is definitive answers to the following questions:

- When will the commuter rail be built?
- Where is the money coming from?

It is the opinion of Mayor Gutierrez that the 3rd lane expansion to I-25 should be constructed all the way to SH 14 within the next 5 years. He believes this has been a priority and that it should have been completed 5 years ago. Once I-25 is widened the Mayor believes rail is a necessity and should be built in the next 10-20 years.

Kathy suggested the communities in the North Front Range need to jointly identify their transportation priorities; highway, rail and other transportation alternatives as well.

Dave pointed out that this is difficult because Weld County's transportation needs are completely different than Larimer County's.

In order to successfully implement rail within the North Front Range, regional cooperation will be the key to success. CDOT or a Rural Transportation Authority (RTA) will have to build the rail. By themselves, no community like Loveland or Fort Collins or others could be expected to build it. NFRMPO is in a challenging position, needing to accommodate the needs and priorities of both Weld and Larimer county communities.

North I-25 Commuter Rail EIS Update
One-on-One Meeting
NFRMPO, CDOT, Parsons Brinckerhoff
2 p.m. - August 22, 2014

Attendees: Terri Blackmore (NFRMPO), Nate Vander Broek (NFRMPO), David Krutsinger (CDOT), Randy Grauberger (PB), Lukas Schroeder (PB)

Project Overview:

Three areas of the EIS commuter rail component will be updated during this study:

- Capital costs will be updated to reflect 2014 dollars and FTA/FRA standard cost categories.
- Operational plan will be updated based on identified changes, compared to prior assumptions/findings, for track, intersections, and right-of-way.
- A new right-of-way analysis.

Four options will influence the capital cost update within the MAX BRT corridor in Fort Collins:

- The commuter rail replaces BRT. This may mean returning money to the FTA.
- The commuter rail will take up roadway lanes, parking, and/or sidewalks instead of buying property.
- The commuter will require the purchase of property.
- The commuter rail will go no further north than the south Fort Collins Transit Station.

What we know since the 2009 EIS:

Conditions / assumptions that have changed since the EIS was completed:

- Eastern rail freight bypass is now inactive as far as CDOT is concerned. We can assume freight rail will continue to use existing track.
- The MAX BRT is now in service.
- The FLEX bus service is now in service.

Terri noted that due to development along the BRT corridor, land use will need to be re-visited from the 2009 EIS.

The study will also need to re-visit the use of Weld County Road 7 as the commuter rail alignment, because of considerable development since the 2009 EIS.

The RTD Metro line is expected to be opening up to 124th Avenue in 2018.

What is not included in this study:

- Create an implementation plan and implementation schedule,
- Provide travel forecasting or estimate ridership
- Provide a financial analysis, or
- Hold formal public meetings.

Technical Advisory Committee:

The role of the TAC will be planning level and could consist of providing: staff and/or policy guidance, review documents and strategy guidance, land use or demographic data, and review of the draft documents.

NFRMPO is hiring Becky Karasko, from Arlington, Texas, and she could potentially assume this TAC role. Becky has a strong background in freight issues. NFRMPO will officially name a TAC member at a later date.

Action Item: Provide a member for the TAC in the next two weeks.

Public Input Strategies:

The NFRMPO's 2040 plan is scheduled to be released in the fall of 2015.

In terms of coordination, it may be a good idea to combine North I-25 Commuter Rail and 2040 plan public outreach meetings/briefings when possible.

NFRMPO is starting a newsletter to provide input and updates to the public. If we provide them study updates they offered to include them in the newsletter. NFRMPO also has a blog that they maintain to provide updates to the public.

David gave an update on CDOT's I-25 Commuter Rail website. He is going to check to see if there is a list serve that will provide notices of changes to the website to the subscribers. NFRMPO will sign up to receive notifications and can provide links to their newsletter and blog.

Action Item: David to check list serve

Policy Briefings:

There will be two policy briefings held based on the existing schedule. One will be held prior to the draft report and the other will be after.

The first policy briefing could possibly be held on November 6. January would be the best time for the NFRMPO to hold the second of these briefings.

Questions on the Handout:

- What is NFRMPO hearing from various constituencies about rail in the region?

They've heard excitement of passenger rail in Larimer County. In Weld County the only excitement has been in the Greeley area.

There is a Policy meeting every quarter on the 2nd Thursday of the month for a US 85 Planning and Environmental Linkage (PEL) that could provide an opportunity to hear ideas.

- How is the NFRMPO treating transit generally, and rail transit specifically, in the 2040 LPRT update? North I-25 Commuter Rail along US287? ICS on I-25? Anything else on the "books" for MAX BRT? Anything else on the "books" in terms of key arterial bus transit corridors?

There is nothing at this time. The North I-25 Commuter Rail will be modeled in the 2040 Plan so keep the NFRMPO updated of any changes to the commuter rail concept.

The 34 Express bus is being re-evaluated between Greely and Loveland. Transit operators are trying to determine the best ways to connect to the IX (CDOT's inter-regional express bus) service.

There was a discussion related to the parking for the IX service. Parking at Harmony Road is already at capacity. CDOT is discussing possible paid parking for "DIA Shuttle" parking at this location. Terri suggested the possibility of commuters potentially parking at the WalMart on the east side of I-25.

- Is transit part of any air quality conformity goals? If so, how?

Yes, without considerable transit usage, the NFRMPO area will have trouble attaining conformity.

- What does NFRMPO see as its relationships with Upper Front Range TPR and DRCOG? How does North I-25 Commuter rail play into the picture?

The commuter rail will impact DRCOG more than UFR at this point.

- What does the NFRMPO 2040 LRTP say about demographics and land use in the five "slices" of land: (US287) corridor, (2) space between 287 and I-25, (3) I-25 corridor, (4) space between I-25 and US85, and (5) US 85 corridor?

The NFRMPO region currently has 453,000 residents, as documented in the 2010 census. It is projected to have 825,000 residents by 2040. Fort Collins' population in 2010 was 133,000 and it is growing at a rate of 2% per year.

Action Item: Nate will provide Randy and David with a copy of the 2040 economic and demographic report.

BRT ridership has been approximately 3,500 persons a day since opening (free service). That is approximately 2,000 more riders per day than expected. Demand at this point has greatly exceeded expectations. The need for Sunday service is being evaluated. Fares will begin to be charged on August 25. Everyone is waiting to see what the ridership will be once students (CSU students free) utilize the service and fares are charged to the general public. Classes begin at CSU on August 25.

There are discussions taking place in the Region related to the possible formation of a Regional Transportation Authority (RTA).

North I-25 Commuter Rail EIS Update
One-on-One Meeting
RTD, CDOT, and Parsons Brinckerhoff
1 p.m. - August 21, 2014

Attendees: Randy Grauberger (PB), Lukas Schroeder (PB), David Krutsinger (CDOT), Brian Welch (RTD), Henry Stopplecamp (RTD), Chris Quinn (RTD), Kirk Strand (RTD), Nate Diaz (RTD)

Location: RTD – 1560 Broadway, Denver

Introductions

Project Overview:

CDOT is the keeper of the North I-25 Commuter Rail EIS document.

This Study will update the Preferred alternative commuter rail component was left in and is still proposed to connect Fort Collins to the RTD's North Metro line @ 162nd Avenue. The alignment would utilize BNSF's freight rail line between Fort Collins and Longmont.

During this study, all stakeholders will be involved. Multiple one-on-one meetings similar to this meeting will be held during the coming weeks.

Conditions / assumptions that have changed since the 2009 EIS was completed:

- The freight railroads are not moving to the eastern plains and will remain where the existing lines are located.
- The MAX BRT in Fort Collins is now operational and is located in the right of way proposed for the commuter rail.
- The FLEX bus service between Longmont and Fort Collins is now operating.
- The RTD finances have changed. For this study, we need to know how a commuter rail line can tie in to the RTD North Metro line.

What the Project is:

There are three pieces to the North I-25 Commuter Rail EIS update:

- The capital costs will be revised to reflect current 2014 dollars and FTA/FRA standard cost categories.
    - Influenced by four options in the Fort Collins vicinity due to the implementation of the MAX BRT:
        - Rail to replace BRT. This option could end up returning money to the FTA.
        - Take parking or roadways.
        - Take real estate.
        - Build only to South Transit Station.

- The operational plan will be updated based on identified changes, compared to prior assumptions/findings, for track, intersections, and right-of-way.
- A new right-of-way analysis.

As was identified in the NAMS, the County Road 7 alternative in Weld County may no longer be viable due to the development along the corridor.

What the Project is not:

- An implementation plan is not being developed at this time.
- A financial plan is not being created at this time. It will be designated to local authorities later to find funding sources.
- No new alternative alignments will be evaluated other than replacing the County Road 7 alignment south of SH 119.
- No new ridership forecasts will be developed

Who should represent your agency on the Technical Advisory Committee (TAC)?

The responsibility of the TAC will primarily be on the planning level.

Brian Welch will represent RTD at the TAC meetings. If engineering expertise is needed, Henry Stopplecamp will be available.

Questions for RTD (handout):

Is the operation of alternative North Metro trains to Fort Collins an operating concept that RTD would consider?

Yes, however some things to consider are:

- Wear and tear on the tracks – How will track maintenance be funded?
- The termination of the North I-25 Commuter Rail will be at Denver Union Station. The capacity of DUS is minimal; therefore the turn at the station would have to be 5-7 minutes or less.
- Some station platforms along the North Metro line are no more than 300' which may limit train length.
- Maintain headway to satisfy meets between feeder buses.
- Access into and out of Union Station is already very tight without adding these additional trains to the North Metro Rail Line service.
- Trains from Fort Collins could either use an existing time slot (i.e. be one of RTD's trains) or add to the total number of trains moving through the corridor.
- If new trains are added from Fort Collins, the new trains could skip some RTD stops, but would have to slow to a slow/safe speed when passing through stations.
- RTD's "L" bus route from Longmont to DUS is likely to remain even when the North Metro Rail Line is built. It could be re-considered if rail were built to Longmont or further north to Fort Collins.

Would DMU operations with FRA-compliant vehicles be permitted?

Yes, the North I-25 Commuter Rail has to be FRA compliant. The North Metro Rail Line has high level platforms (50.5" above top-of-rail). The commuter rail should meet this requirement among others. DMU is louder than EMU, which is what the North Metro Rail Line will run. Depending on frequency of service, some sound walls may need to be installed.

However, the North Metro Rail Line is currently being designed for EMU vehicles which are light than DMUs. Since DMU weighs more, there could be an estimated additional cost of $5 to $10 million for the corridor, not including additional design costs, to provide extra support for the heavier vehicles. It is now too late to re-design the bridge structures to accommodate the alternative live loads necessary for DMU venicles *without* delaying North Metro Rail Line revenue service.[1]

Are there any planned single track segments that would permit adding a second track?

Yes. There is plenty of additional right-of-way within most sections of the corridor to allow future double tracking without double tracking any of the structures (especially the 8,100 foot North Metro Rail Line structure).

Any right-of-way plans?

Yes. There is an oil/gas pipeline easement in the North Metro Rail Line right-of-way.

There are community interests looking for "surplus" right-of-way from RTD to be converted to trail or open space.

Would train operators of another company be permitted to run trains on RTD tracks?

Yes, RTD has a concessionaire agreement with Denver Transit Partners (DTP) for the Eagle project. RTD does not currently have an agreement for operation and maintenance of the North Metro Rail Line. Contact Ashland Vaughn to inquire about the opportunities and constraints associated with other potential operators utilizing the North Metro Rail Line. Other options available could be BNSF or third party operator.

<u>Input on public information strategies:</u>

There will not be any formal public meetings. There will be a technical Advisory Committee for this study but no formal Public meeting/Open Houses are anticipated. It was noted that the Project Study Team is meeting with CDOT and BNSF's DJ Mitchell on September 3. RTD indicated that DJ is an excellent person to be meeting with at this early point in the study. Additional meetings with up to 10 different stakeholder groups are being scheduled for the next 2 to 3 weeks.

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[1] Since the one-on-one meeting with RTD it has been determined that *some* DMU vehicles meet the weight criteria of RTD's bridge design.

North I-25 Commuter Rail EIS Update
One-on-One Meeting
Weld County Public Works, Town of Mead, Parsons Brinckerhoff, CDOT
3:30 p.m. – September 11, 2014
Weld County's Southwest Services Center

Attendees: Janet Lundquist (Weld County Public Works), Karen Schneiders (CDOT) Dan Dean (Town of Mead), Randy Grauberger (PB)

Randy noted that this is the second meeting with Weld County and the communities of southwest Weld County. After the first meeting, held on August 27, Janet Lundquist volunteered to set up a second meeting in order to get better participation that at the first meeting; only attended by the County and Dacono. Randy thanked Janet for coordinating this second meeting.

Project Overview:

This study is intended to keep the EIS current with the State Rail Plan and stay poised in regards to eligibility for any federal funding that may come along.

The goal of these one-on-one meetings is to inform all stakeholders that may be affected by the Commuter Rail Line of intentions and changes. Stakeholder comments and other input are welcome throughout this process.

These three items of the Commuter Rail element of the North I-25 EIS will be updated during this study:

- Capital costs will be updated to reflect 2014 dollars and FTA/FRA standard cost categories.
- Operational plan will be updated based on identified changes, compared to prior assumptions/findings, for track, intersections, and right-of-way.
- A new right-of-way (ROW) analysis will be conducted.

What we know since the 2009 EIS:

Conditions / assumptions that have changed since the EIS was completed:

- Eastern freight rail bypass is now inactive. We can assume the freight rail will continue to use existing BNSF track. Anticipated to run a second track parallel to the exiting BNSF track.
- The MAX BRT is now in service.
- The FLEX bus service is now in service.
- The new northern terminus for the RTD Northwest Rail Line is proposed to be located at 1st Avenue and Main Street in Longmont.
- Due to issues on the North Metro RTD line, it has been decided to place single track instead of double track. This could increase total travel time for the North I-25 Commuter Rail from Fort Collins to Denver Union Station by 5 minutes.

The capital cost update will use the standard FTA and FRA cost format.

There are currently four options that will be evaluated in the capital cost update in the Fort Collins area due to the recent implementation of MAX BRT:

- The commuter rail replaces BRT. This may mean returning money back to the FTA.

- The commuter rail will take up roadway lanes, parking, and/or sidewalks instead of buying property.
- The commuter rail will require the purchase of property.
- The commuter rail will terminate at the South Fort Collins Transit Station.

The ROW analysis and operating plan will also have impacts to the cost analysis.

What is not included in the study?

The study will not be re-opening the project alternatives. The preferred alternative studied in the EIS will remain. The following are **not** included in the scope of the study:

- Create an implementation plan,
- Provide travel forecasting,
- Estimate ridership,
- Create a schedule,
- Provide a financial analysis, or
- Hold formal public meetings.

A new funding source will be needed to create an implementation plan and financial plan.

Technical Advisory Committee:

The role of the TAC will be planning level and could consist of providing: staff and/or policy guidance, review documents and strategy guidance, land use or demographic data, and review of any draft documents.

The Weld County Public Works representatives will be Janet Lundquist and Elizabeth Relford. If one is unavailable the other would attend.

Public Input Strategies:

It was agreed that formal Public Meetings should not be necessary in this process since there will not be new alternatives evaluated.

Discussion:

Janet again asked if there could be a product of this study that shows a detailed graphic or shape file that shows the proposed Commuter Rail alignment. This would be helpful to control future development along the corridor and reserve ROW. This effort could help save time and money as planning and design efforts progress forward. In relation to defining the corridor, obtaining ROW should be a priority. If ROW is not reserved for this project, it will either be unavailable for future rail corridor use or very expensive to acquire. Is there a minimum ROW width that would be required for the Commuter Rail Corridor?

Randy explained that an initial meeting with BNSF was held on September 3. BNSF needs to have specifics regarding a project in terms of time of implementation, cost of project, and how it will be funded before it will enter into agreements for use of its track.

Janet sees an investment into additional lanes on I-25 at this point rather than rail, especially since ROW acquisition for the Commuter Rail hasn't commenced.

The Northwest Area Mobility Study (NAMS) was an RTD study that was completed in the spring of 2014. NAMS will be used as background information for this Study. NAMS study looked at two things:

- Updated Cost figures for the RTD Northwest Rail line, and
- Possibly extending the RTD's North Metro line from 162nd to Longmont. That analysis suggested that the Weld County Road 7 alignment was no longer a reasonable route for the North I-25 Commuter rail between SH 119 and the RTD's Boulder Branch corridor due to the development that has taken place.

NAMS will not necessarily affect the current alignment of station locations. It is being used as a reference for the North I-25 Commuter Rail Study update. Station CR9 would be anticipated to remain in the location shown on the graphic in the 2009 EIS if County Road 7 were the selected routing.

Other Business:

Janet reserved the Weld County Southwest Service Center for the morning of September 25 for the initial meeting of the TAC.

Janet and Karen suggested that Richard Leffler of Frederick be contacted as possible TAC member for Frederick.

North I-25 Commuter Rail EIS Update
One-on-One Meeting
Weld County Public Works, City of Dacono, Parsons Brinckerhoff, CDOT
2 p.m. - August 27, 2014
Weld County's Southwest Services Center

Attendees: Janet Lundquist (Weld County Public Works), Elizabeth Relford (Weld County Public Works), A.J. Euckert (City of Dacono), David Krutsinger (CDOT), Randy Grauberger (PB), Lukas Schroeder (PB)

Project Overview:

This study is intended to keep the EIS current with the State Rail Plan and stay poised in regards to eligibility for any federal funding that may come along.

The goal of these one-on-one meetings is to inform all stakeholders that may be affected by the Commuter Rail Line of intentions and changes. Stakeholder comments and other input are welcome throughout this process.

These three items of the Commuter Rail element of the North I-25 EIS will be updated during this study:

- Capital costs will be updated to reflect 2014 dollars.
- Operational plan will be updated based on identified changes, compared to prior assumptions/findings, for track, intersections, and right-of-way.
- A new right-of-way (ROW) analysis will be conducted.

What we know since the 2009 EIS:

Conditions / assumptions that have changed since the EIS was completed:

- Eastern freight rail bypass is now inactive. We can assume the freight rail will continue to use existing BNSF track. To accommodate the proposed commuter rail, it is anticipated that a second track parallel to the exiting BNSF track would be required.
- The MAX BRT is now in service.
- The FLEX bus service is now in service.
- The new northern terminus for the RTD Northwest Rail Line is proposed to be located at 1st Avenue and Main Street in Longmont.
- Due to funding issues that RTD has been facing for the whole FasTracks program, on the North Metro RTD line it has been decided to place single track instead of double track for much of the length of the corridor. This could increase total travel time for the North I-25 Commuter Rail from Fort Collins to Denver Union Station by 5 minutes.

The capital cost update will use the standard cost category (SCC) format, which is an FTA and FRA cost format.

There are currently four options that are proposed to be evaluated in the capital cost update in the Fort Collins area due to the recent implementation of MAX BRT:

- The commuter rail replaces BRT. This may mean returning money back to the FTA.

- The commuter rail will take up roadway lanes, parking, and/or sidewalks instead of buying property.
- The commuter rail will require the purchase of property & buildings.
- The commuter rail will terminate at the South Fort Collins Transit Station.

The ROW analysis and operating plan will also have impacts to the cost analysis.

What is not included in the study?

The study will not be re-opening the project alternatives. The preferred alternative studied in the EIS will remain. The following are **not** included in the scope of the study:

- Create an implementation plan or implementation schedule,
- Provide travel forecasting or estimating ridership,
- Provide a financial analysis, or
- Hold formal public meetings.

A new funding source will be needed to create an implementation plan and financial plan.

Technical Advisory Committee:

The role of the TAC will be planning level and could consist of providing: staff and/or policy guidance, review documents and strategy guidance, land use or demographic data, and review of any draft documents.

The City of Dacono representative will more than likely be Jennifer Krieger.

The City of Firestone representative will more than likely be Dave Lindsay.

The Weld County Public Works representatives will be Janet Lundquist and Elizabeth Relford. If one is unavailable the other would attend.

It was suggested that Nick Wolfrum be added to the list of contacts for the city of Longmont.

It was suggested that Gary Belen might be the representative for Erie.

Action Item: Provide a member for the TAC for each stakeholder.

Discussion:

Janet asked: Is there a detailed graphic or shapefile that shows the proposed Commuter Rail alignment? This would be helpful to control future development along the corridor and reserve ROW. This effort could help save time and money as planning and design efforts progress forward. The Weld County Public Works attendees stressed, in relation to defining the corridor, that obtaining or preserving ROW should be a priority. If ROW is not preserved for this project, it will either be unavailable for future rail corridor use or very expensive to acquire. Is there a minimum ROW width that would be required for the Commuter Rail Corridor? A shape file gives local governments a way to hold developers “off”, to request land dedications, or to at least re-direct structures away from being built in the proposed commuter rail right-of-way.

The Weld County attendees inquired about having an agreement with BNSF established. They expressed that if there is no agreement to allow the Commuter Rail to use the existing track BNSF track, then there really isn't a project. This effort should be another top priority.

Randy explained that an initial meeting with BNSF has been scheduled for September 3. BNSF needs to have specifics regarding a project in terms of time of implementation, cost of project, and how it will be funded before it will enter into agreements for use of its track or right-of-way.

Elizabeth mentioned that the State should ask the various regions what their transportation priorities are. Janet said that Greeley would benefit greatly from transit. However, if you asked the Weld County the elected officials would likely tell you the order of their priorities would be:

- General 3rd lane on I-25
- Managed 4th lane on I-25
- Commuter Rail

Janet sees an investment into additional lanes on I-25 at this point rather than rail, especially since ROW acquisition for the Commuter Rail hasn't commenced.

The Northwest Area Mobility Study (NAMS) is an RTD study that was completed in the spring of 2014. NAMS will be used as background information for this Study. NAMS study looks at two things:

- Updated Cost figures for the RTD Northwest Rail line, and
- Possibly extending the RTD's North Metro line from 162nd to Longmont. That analysis suggested that the Weld County Road 7 alignment was no longer a reasonable route for the North I-25 Commuter rail between SH 119 and the RTD's Boulder Branch corridor due to the development that has taken place.

NAMS will not necessarily affect the current alignment of station locations. It is being used as a reference for the North I-25 Commuter Rail Study update. Station CR9 would be anticipated to remain in the location shown on the graphic in the 2009 EIS if County Road 7 were the selected routing.

Other Business:

Janet will set up another one-on-one meeting before or shortly after September 8, 2014 to include the other stakeholders that either missed or were unable to attend this meeting.

There is an elected officials Regional Coordinating Council (RCC) meeting organized by Jennifer Gorek of CDOT-Region 4 on September 8, 2014 from 3-5pm.

It was recommended that when contacting stakeholders of smaller communities, it's best to work through the Town Administrators.

The I-25 Coalition meets the 1st Wednesday of every month @ 6:30 at the Weld County's Southwest Services Center.

Appendix B

Technical Advisory Committee (TAC) and Policy Briefing PowerPoint Presentations and TAC Meeting Notes

North I-25 Commuter Rail Update

Technical Advisory Committee

September 25, 2014

COLORADO
Department of Transportation

PARSONS BRINCKERHOFF

Agenda

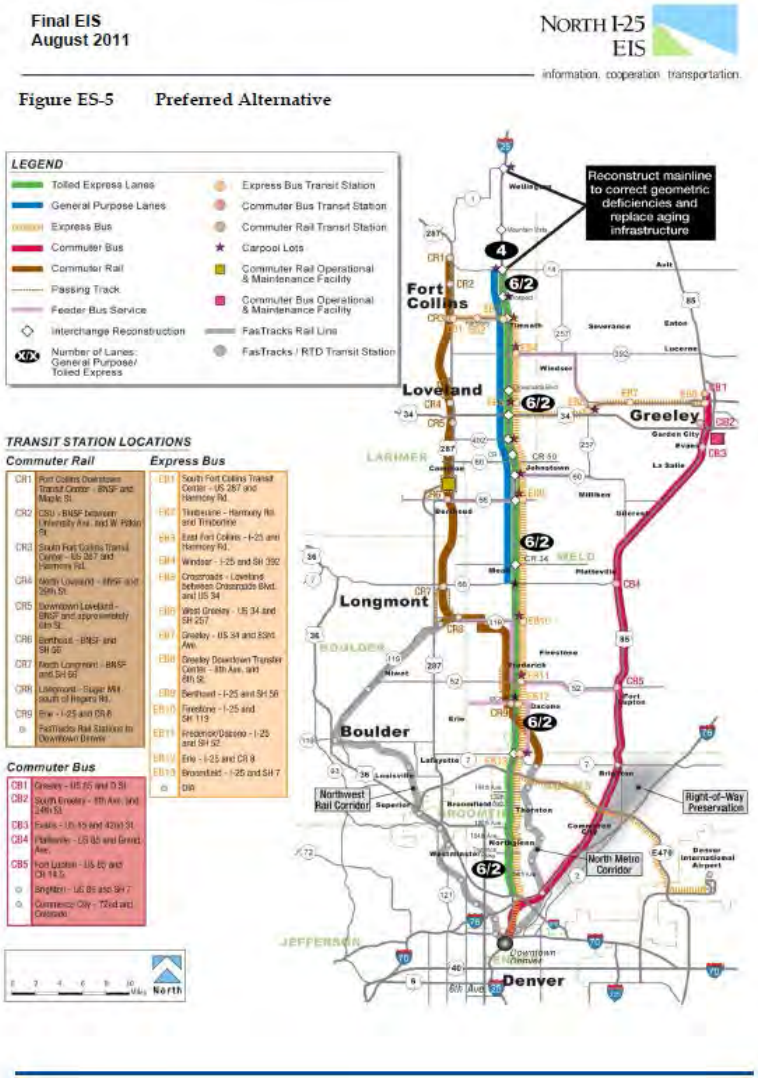
- Introductions
- Background & Project Overview
- North I-25 EIS Overview
- Summary of One-on-One Stakeholder Meetings
- BNSF Railway Update
- Right of Way Update
- Operations Plan Update
- Cost Update
- Set Future Meeting Date / Other Business

Background & Project Overview

Purpose of the "Update"

- Advance development of an integrated inter-regional transit system envisioned in North I-25 EIS
- Focus on recommended elements of commuter rail
- Synthesize recommendations of recent studies such as NAMS, North Metro EIS, Interregional Connectivity Study, and others
- Refresh information parallel to I-25 planning and prior to the State Rail Plan Update of 2016-2017
- Not changing the preferred alternative

North I-25 EIS Map



Scope Refinement

- Seek input on Update scope prior to initiating other tasks
- Briefings to NFRMPO and US287 Coalition
- Up to ten meetings with stakeholders
- Understand expectations for stakeholder involvement and public information process

Stakeholder Involvement & Public Information

- Stakeholder Involvement
  - Technical group of staff members meets regularly
  - Two updates to policy group, once before, once after Draft Report
  - Three meetings coordinating with ICS "Interoperations Assessment"

- Public Information
  - CDOT hosted website including comment opportunities
  - Meetings above open to the public, with public comment period
  - Several press releases during the update effort

Right of Way Analysis

- Analyze at least four distinct segments
  - Fort Collins with MAX BRT
  - Fort Collins South Transit Center to Longmont
  - Weld County Road 7
  - RTD Boulder Branch Line

- Original Assumptions for ROW
  - Shared track

- Changed Conditions for ROW
  - No “Eastern Bypass”
  - MAX BRT in Mason
  - Some development since

Operating Plan Update

- North I-25 EIS Operating Plan
  - 30 minute peak / 60 minute off-peak service both directions
  - 55 trains per day
  - 9 stations downtown Fort Collins to RTD 162nd/Colorado station
  - 1 hour 45 minute travel time Fort Collins to Denver Union Station

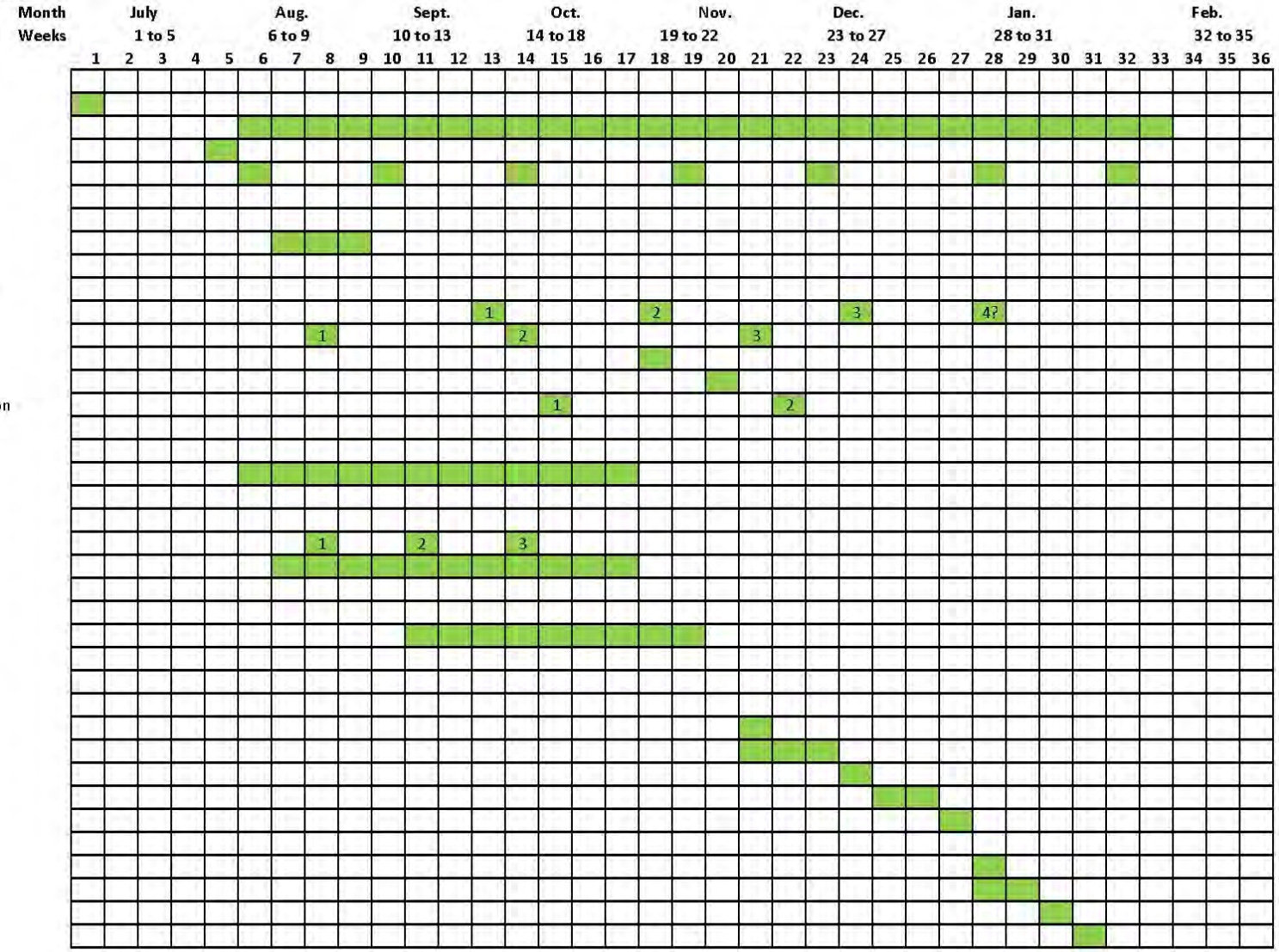
- Updated
  - Federal Regulations for Positive Train Control
  - RTD Single Track
  - BNSF Commuter Passenger Principles

Cost Update

- Improve level of detail
- Update for changed conditions
- Request BNSF input & concurrence similar to Northwest Area Mobility Study
- Update from 2009$ to 2014$
- Update to FTA / FRA Standard Cost Categories (SCC's)

Project Schedule

PROPOSED: North Front Range Rail Update Schedule
Revised September 15, 2014 Draft



COLORADO Department of Transportation

PARSONS BRINCKERHOFF

North I-25 EIS Overview

North I-25 EIS

- 2003 to 2011
- Transit improvements identified as part of purpose and need
- Alignments examined for rail transit included all highway corridors (US-287, I-25, US-85 + others) and all current and abandoned rail corridors
- Between Longmont and North Metro terminus, 20 different alignments were considered
- Strong community support for rail between Fort Collins and Denver

Rail Modes Considered

- Seven different modes developed (including high speed rail)
- Commuter rail was chosen because it was most compatible with FasTracks, was cost-effective, and best met purpose and need
- High speed rail was not chosen because it would not serve the communities as well as commuter rail

Stations Considered

- Along I-25: seven stations at Harmony Road, SH 392, Crossroads, US 34, SH 56, SH 119, and SH 52
- Along BNSF (western alignment): eight stations at Fort Collins (downtown, at SH 14, at Harmony Road), Loveland (US 34, SH 402), Berthoud (SH 56), Longmont (South of SH 66 and 1st and Terry)

FasTracks Connections

- One seat ride to downtown Denver (Denver Union Station) via RTD's North Metro alignment
- Connection to Boulder via transfer to Northwest Rail at Longmont

I-25 vs. BNSF ROW Commuter Rail

- Western (BNSF ROW) alignment currently had more than double the population and employment within 4 miles of surrounding rail stations
- By 2030 there was projected to be 30 percent more population and employment along a western rail alignment
- Western alignment was cheaper than I-25 because of the potential to use BNSF track plus no I-25 interchanges/bridges plus minimal new ROW

I-25 vs. BNSF ROW Commuter Rail

- Western alignment was more consistent with the land use plans for Fort Collins, Berthoud, Loveland and Longmont
- Western alignment resulted in fewer impacts to wetlands
- Western alignment had the most potential to serve low income and minority populations
- Public support indicated desire for rail in community centers—didn't want to drive or shuttle out to I-25

Other Commuter Rail Studies and Evaluation

- Double tracking was evaluated in DEIS (Package A)
- Stakeholders requested full evaluation of single tracking in FEIS. Single tracking was assumed for Preferred Alternative in FEIS.
- Four grade separated crossings assumed – all the rest were at-grade. Traffic impacts of at-grade crossings included in EIS.
- From DEIS to FEIS, BNSF requested a maintenance road be added along the BNSF tracks.

Other Commuter Rail Studies and Evaluation

- Various operating scenarios were developed and tested.
- Various maintenance facility locations were analyzed.
- Commuter rail was developed assuming implementation of MAX BRT (southern terminus at Harmony Road was considered; rejected after public and stakeholder input).

Summary of One-on-One Stakeholder Meetings

Summary of One-on-One Stakeholder Meetings

- 10 meetings held with stakeholders between August 21 and September 24
- Purpose –
  - To understand stakeholder expectations for the Update and for level of stakeholder involvement.
  - Obtain input on Scope of Work
  - Identify TAC member

10 Meetings

RTD

North Front Range MPO

Boulder Co./Longmont/NATA

Weld Co / SW Weld Communities (2)

Berthoud

BNSF

Loveland

Larimer County

Fort Collins

Meeting Themes

RTD – North I-25 Commuter Rail (DMU) can buy operating rights over RTD's North Metro (EMU) corridor. DMU vehicles must be light enough to operate over structures designed for EMU vehicles.

North Front Range MPO – Commuter rail to be modeled in 2040 MPO Plan; connectivity to other transit (bus) modes important.

Boulder Co./Longmont/NATA – Connectivity issues with Future NW Rail at Longmont.

Weld Co. and SW Weld Communities – Early right-of-way identification / preservation is critical.

Berthoud - Look for economic development opportunities; need additional industrial rail access; acquire depot/station location and possible DMU maintenance facility.

Meeting Themes (continued)

BNSF Railway – Double track will be required with some passing track for service levels being proposed. Must follow BNSF's Commuter Passenger Rail Principles.

Loveland – State/Region need a vision for passenger rail. 3rd general purpose lane on I-25 a higher priority.

Larimer County – I-25 widening higher priority at this time. Right of way preservation not as much of a county issue due to considerable open space.

Fort Collins - TBD

BNSF Railway Update

Today's Discussion

- BNSF Background
- The Front Range Subdivision
- BNSF's Passenger Principles
- Initial BNSF Comments from September 3, 2014 North Front Range Commuter Rail EIS Update Meeting
- Q&A/Discussion

The BNSF System

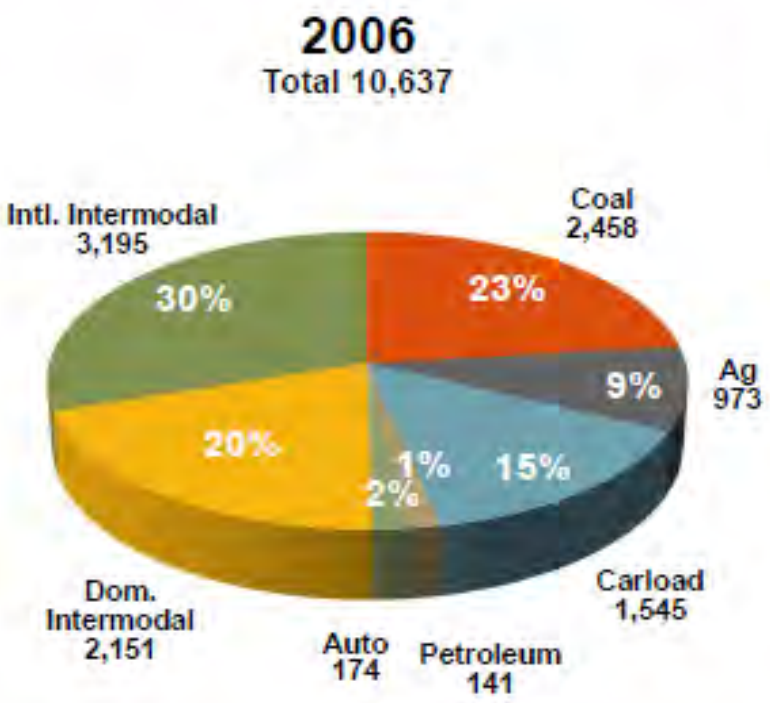
32,500 miles of track in 28 states and two Canadian provinces

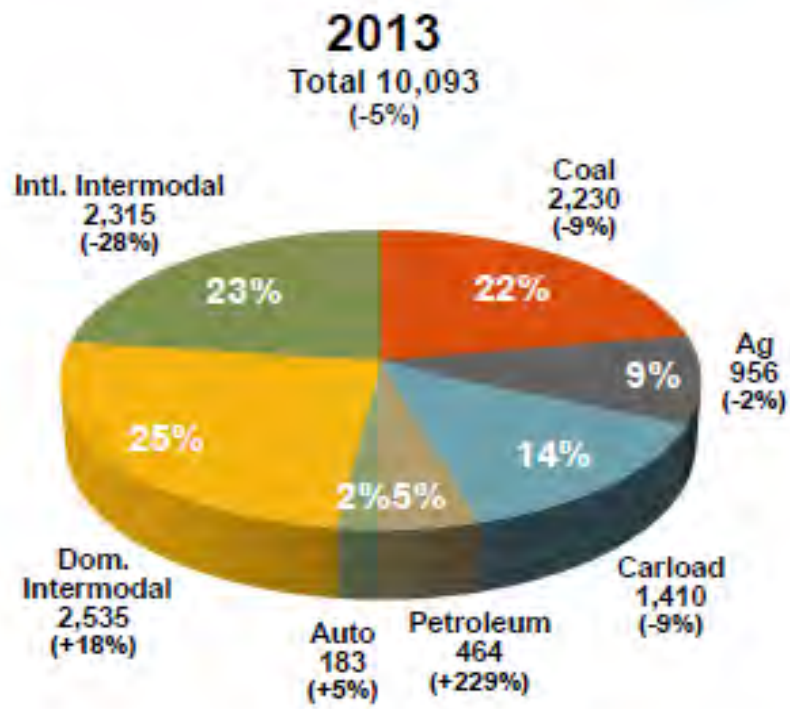
- Employees: **41,000**
- Headquarters: **Fort Worth, TX**
- Ports served: **40+**
- Intermodal facilities: **31**
- Locomotives: **6,900+**
- Bridges: **13,100**
- Tunnels: **87**
- Packages shipped on time during typical holiday season: **50 M**
- Carloads shipped in 2012: **9.5 M**

Traffic Growth is Much Different Today

Domestic Intermodal and Crude Growth are Game-Changers

Units in Thousands

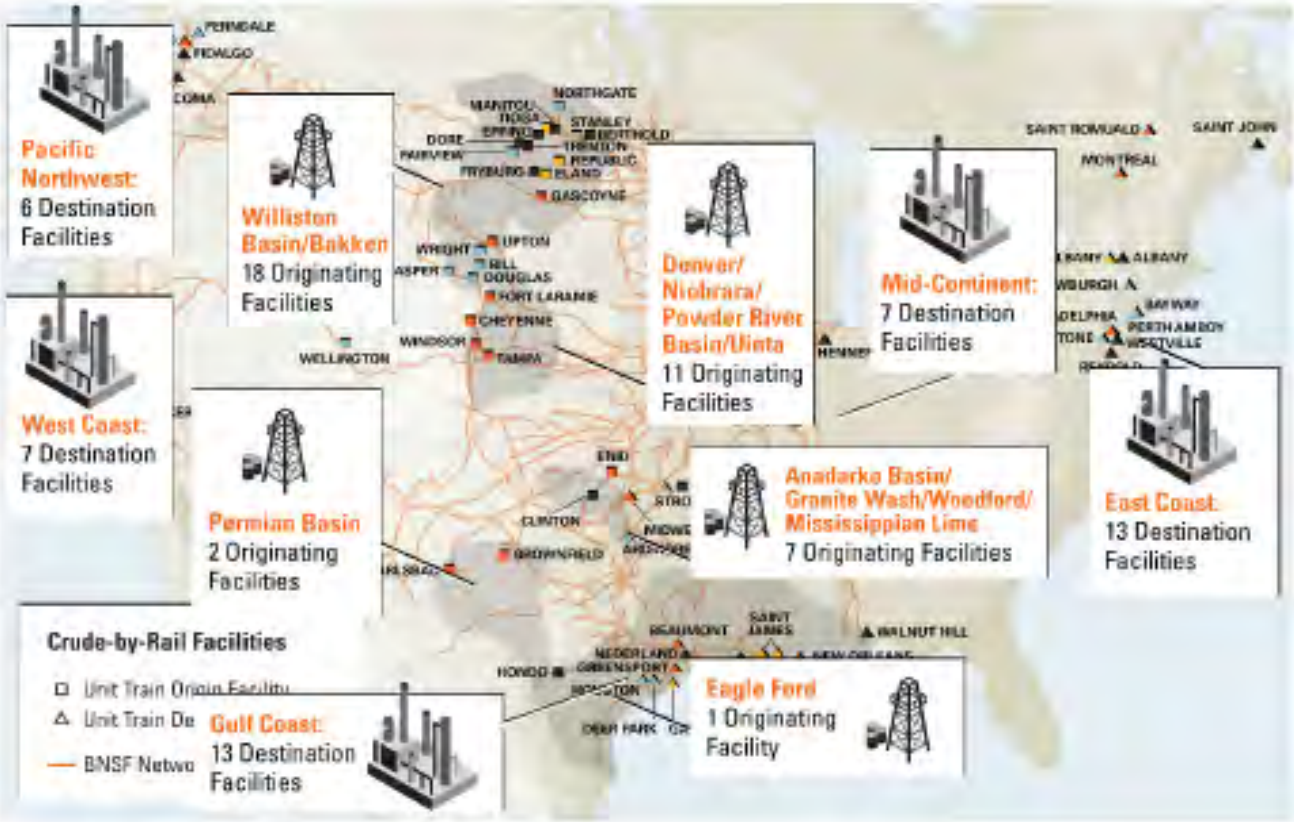




Source: BNSF revenue support; petroleum excludes LPG.


1933
1933
2292
2292
BNSF
2292
Santa Fe

What we haul:
Crude-by-rail origins & destinations



2009
- 1 Origin Facility
- 1 Destination Facility

2011
- 3 Origin Facilities
- 5 Destination Facilities

2012
- 9 Origin Facilities
- 15 Destination Facilities

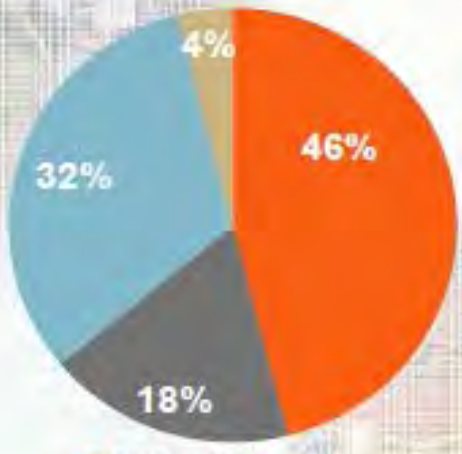
2013
- 10 Origin Facilities
- 10 Destination Facilities

2014
- 7 Origin Facilities
- 10 Destination Facilities

BNSF RAILWAY

Record Capital Investment
Ensures Future Capability and Reliability

BNSF's 2014 Capital Commitment $5B



$2.3 billion

Core Network and Related Assets

$1.6 billion

Loco, Freight Car, & Other Equip

$900 million

Expansion & Efficiency

$200 million

PTC

BNSF

BNSF Commuter/Passenger Principles

- BNSF will consider accommodating passenger trains speeds up to but not beyond 90 MPH.
- Passenger equipment and rolling stock used has to be FRA compliant.
- Any commuter operation cannot degrade BNSF's freight service, negatively affect BNSF's freight customers or BNSF's ability to provide them with service.
- BNSF will not incur any liability for commuter operations that it would not have but for those operations.

BNSF Commuter/Passenger Principles

- Capital investments necessary for commuter service are the responsibility of the public.
- BNSF will limit commuter operations to the commuter schedules initially agreed upon and for which the capital improvement plan has been designed.
  - Future expansions will have to undergo the same analysis and provide any required capital improvements before schedules can be changed, services or stations added.
- Investments made for commuter projects must not result in BNSF incurring a higher tax burden.
  - Property improvements should not become part of BNSF's tax base.
  - Materials used should be exempt from all sales and use taxes, etc., or BNSF must be made whole for any increased tax burden.

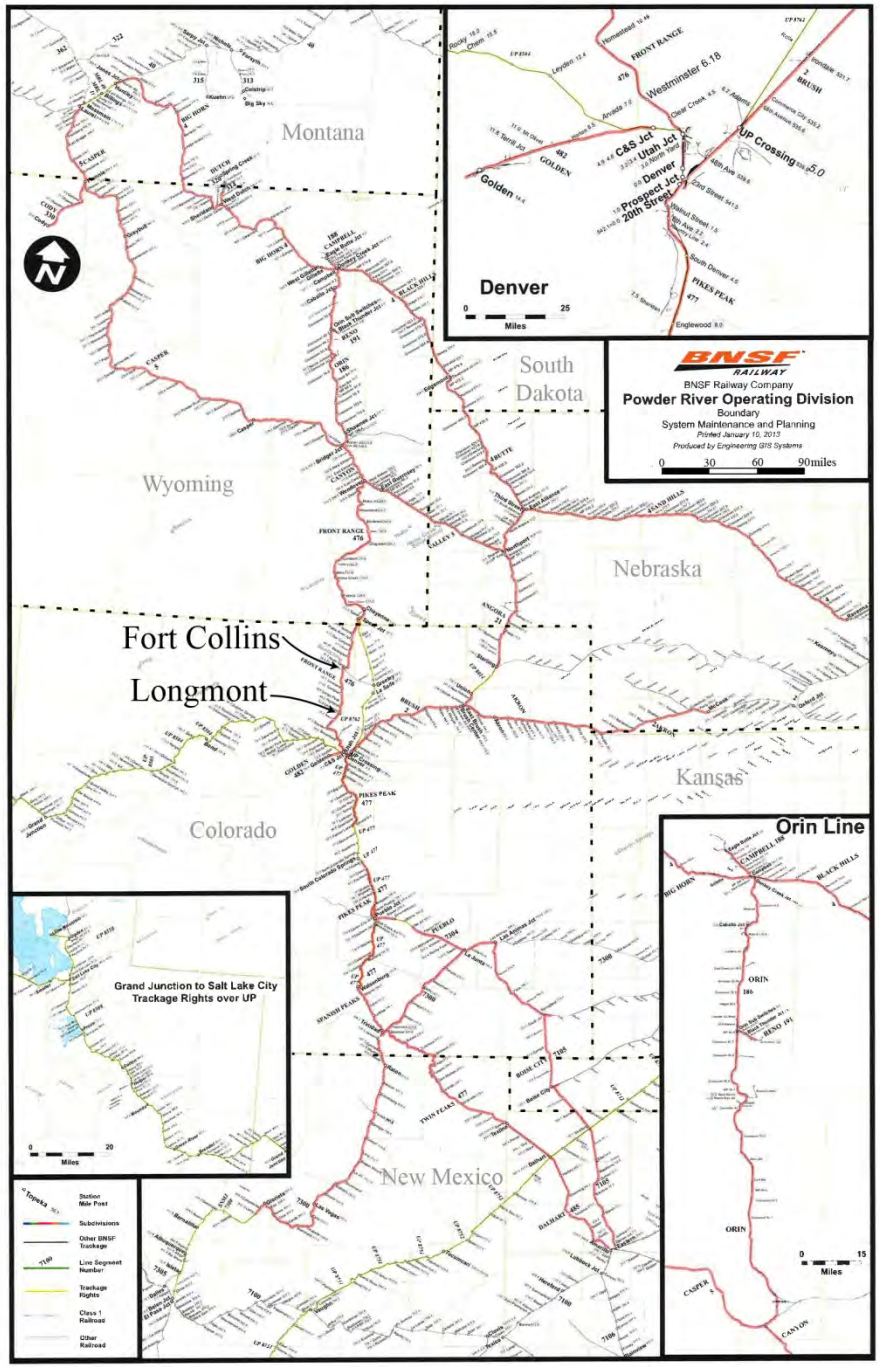
BNSF Commuter/Passenger Principles

- Studies of how commuter service might be provided must take into account not only the current freight levels, but projected freight traffic growth.
- Studies must reflect BNSF's actual operating conditions and cost structures.
  - Construction cost estimates must reflect BNSF labor costs.
  - Passenger schedules cannot assume that BNSF will not operate any freight trains during peak commuter periods.

BNSF Commuter/Passenger Principles

- BNSF must retain operating control of rail facilities used for commuter services.
  - All dispatching, maintenance and construction must be done under the control of BNSF.
  - Passenger stations, parking lots and other non-rail facilities may be publicly owned and operated.
- BNSF must be compensated for any and all costs incurred in providing commuter service and make a reasonable return for providing the service.
- Improvements must include grade crossing protection and inter-track fencing as required to minimize the risk of accidents due to liability and service interruption concerns.

North I-25 Commuter Rail Update



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The Front Range Sub, Longmont – Fort Collins

Mileage:	30.8 (Longmont MP 43.6, Fort Collins MP 74.4)	
Signaling:	Unsignalled (Track Warrant Control or TWC)	
Interchanges:	Longmont:	Great Western Ry. (OmniTRAX)
	Loveland:	Great Western Ry. (OmniTRAX)
	Fort Collins:	Great Western Ry. (OmniTRAX)
		Union Pacific Railroad (UP)
Daily Usage:	6 freight trains/day (range 5-10 trains/day)	
Passing	Loveland:	4,079 feet
Sidings:	Longs Peak:	1.62 miles (2 grade crossings thru)
	Fort Collins:	7,295 feet (North Yard)

The Front Range Sub, Longmont – Fort Collins

ROW Width:	Generally 100 feet, some 200 feet
Signaling:	Unsignalled (Track Warrant Control or TWC)
Crossings:	Grade-separated: 2 (US 287, Eisenhower Blvd., Loveland)
	Signaled Grade Crossings: 34
	Unsignalled grade crossings: 30 (14 Mason Street)
Side Tracks:	East Side: 8
	West Side: 4
Maximum Speed:	49 MPH
Speed Restrictions:	Seven, speeds ranging 20-40 MPH, for 17.4 miles or 56% of the total route

BNSF Comments Re: N. I-25 Commuter Rail Service From 9/3/14 Meeting

- If there are to be 55 passenger trains/day, a double tracked railroad is necessary to operate those trains to the required schedule and protect BNSF's freight traffic on the Sub
  - Minimum 20 feet spacing between track centers.
  - Passing sidings every 5-6 miles would also be required.
  - A continuous maintenance road would also be required.
- Positive Train Control (PTC) will be required for >6 passenger trains/day
  - PTC cost ranges $3-$7 million/mile

Right of Way Update

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Right of Way Update

- Previous Work Done on the Corridor
  - North I-25 EIS
  - Northwest Mobility Study
  - North Metro Rail Line - FasTracks

Right of Way (ROW) Update

- Right of Way Analysis Process
  - Review and evaluate I-25 EIS Assumptions
  - Evaluate various segments of corridor
    - Shared same track as freight
    - New track within freight right of way
    - New track outside freight right of way
  - Assess Right of Way changed conditions vs. original assumptions for each segment
  - Summarize and Report


4341
4341
BNSF
PARKING

Right of Way Update

- Public versus Private Property Ownership %

CDOT	RTD
Adams County	Boulder County
Larimer County	Weld County
C/C of Broomfield	Dacono
Frederick	Firestone
Longmont	Berthoud
Loveland	Fort Collins

Operations Plan Update

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North I-25 Commuter Rail Update
Operations Planning

- Original operations plan for North I-25 EIS assumed single track shared with BNSF
- No time restrictions on freight operation
- Extensive passing sidings/double track
- Options for 12 to 23 miles of second track north of 162nd Ave.
- Based on RTD North Metro with full double track DUS to 162nd Ave.

North I-25 Commuter Rail Update Operations Planning

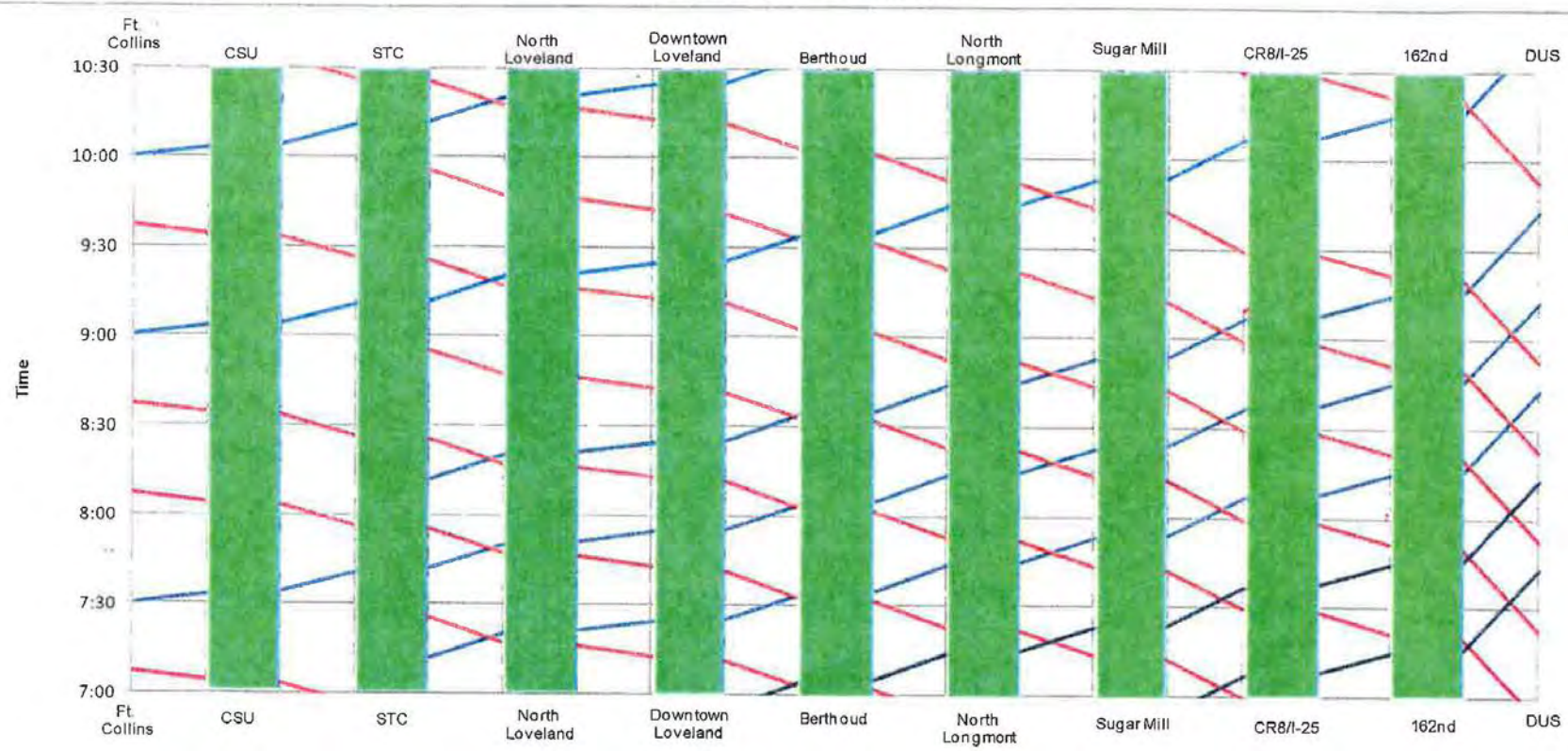
- Connetics Transit Operations Plan (Aug 2010)
- Hourly all-day service Downtown Fort Collins Transit Center to DUS
- Added Peak Hour trains South Fort Collins Transit Center to DUS for half-hour frequency
- Assumed all RTD stops 162nd to DUS
- Added RTD trains 162nd to DUS for 15 minute frequency

North I-25 Commuter Rail Update Operations Planning

- Passing Track Requirements
- Loveland, Berthoud, Longmont, I-25 Area
- 12 miles total for +/- 2 min On Time tolerance
- 23 miles total for +/- 4 min On Time tolerance

North I-25 Commuter Rail Update Operations Planning

Figure 1:
Line Graph of Train Meets



Red Lines indicate northbound train movements and should be read right to left. **Blue** lines indicate southbound train movements and should be read left to right. Intersecting lines indicate train meet locations.

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North I-25 Commuter Rail Update

- RTD North Metro Current plans
- EMUs not DMUs
- Only 4 passing tracks between DUS and 162nd Ave.
- High Level platforms (50.5” above Top of Rail)
- Limited track space at DUS – max turn around time 5-7 minutes

North I-25 Commuter Rail Update Operations Planning

- Bridge weight restrictions (EMU vs DMU)
- 300’ long platforms
- Need for compatible Positive Train Control (PTC)
- Added turn around track at 162nd Ave.

Cost Update

FEDERAL RAILROAD ADMINISTRATION (FRA) STANDARD COST CATEGORIES (SCC)

CODE	DESCRIPTIONS
10	Track Structures and Track
20	Stations, Terminals, Intermodal
30	Support Facilities: Yards, Shops, Administrative Buildings
40	Sitework, Right of Way, Land, Existing Improvements
50	Communications & Signaling
60	Electric Traction
70	Vehicles
80	Professional Services
90	Unallocated Contingency
100	Finance Charges

Developed as part of FRA High-Speed Intercity Passenger Rail Program (HSIPR)

COST UPDATE

- Assumptions for Cost Estimating
- Research of Other Commuter Rail Projects
- Comparisons to ICS, NAMS and Other Projects
- Update of I-25 North EIS Cost Estimates
  - High Level Review & Update of Cost Estimates
  - Update for Changed Conditions & Alternatives
  - Coordinate with BNSF

Set Future Meeting Date & Other Business

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Adjournment

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BNSF has the Means to Meet the Nation's Energy Demands

- **BNSF delivers more coal** than any U.S. company.
- BNSF has invested more than **$3.5 billion** in its coal network since 1996 to ensure safety and efficiency.
- Demonstrated **capability and willingness** to expand capacity and grow with our customers.
- Variety of **route options.**

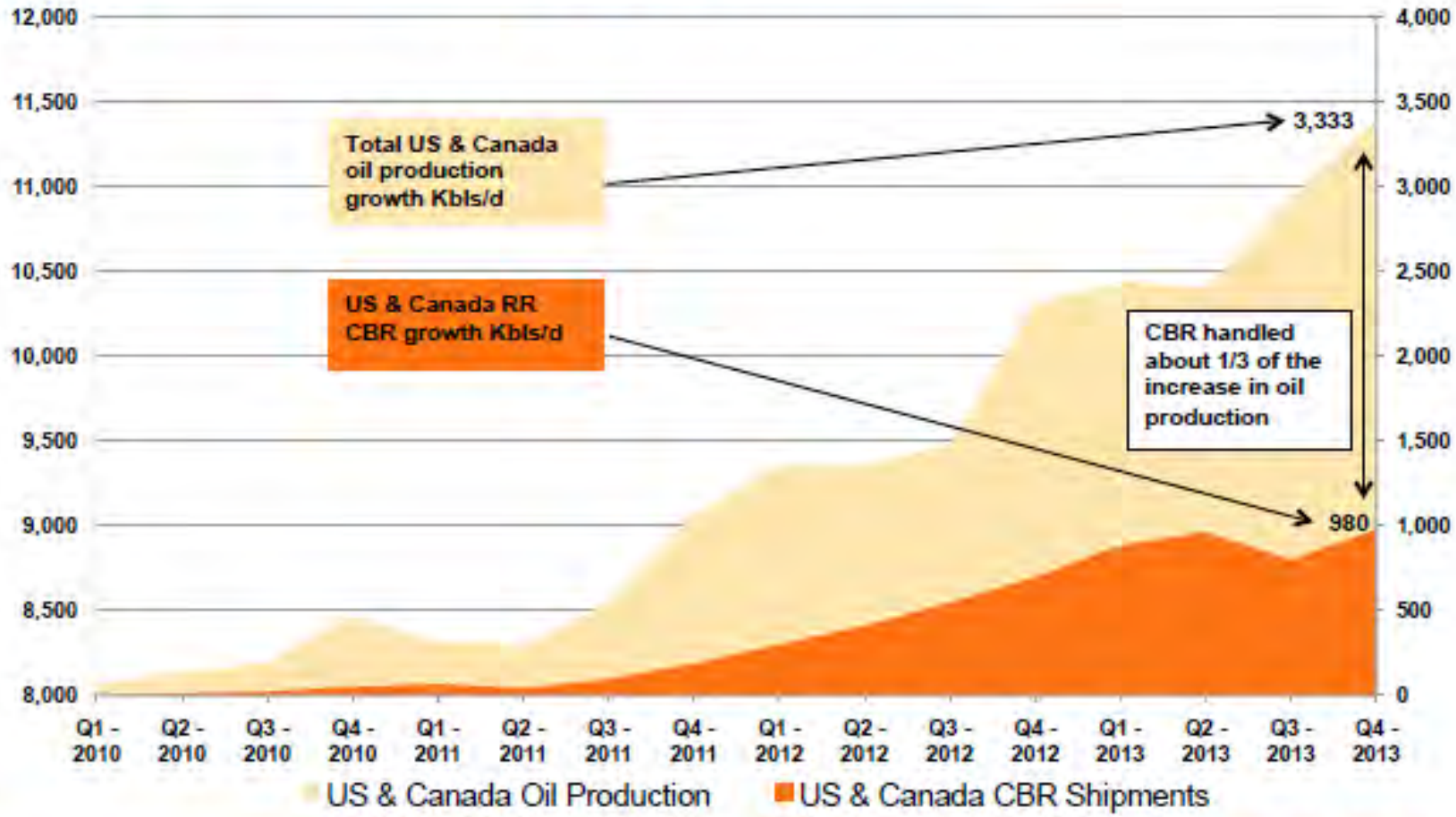
BNSF

BNSF Coal Volumes

12 months to March 2014

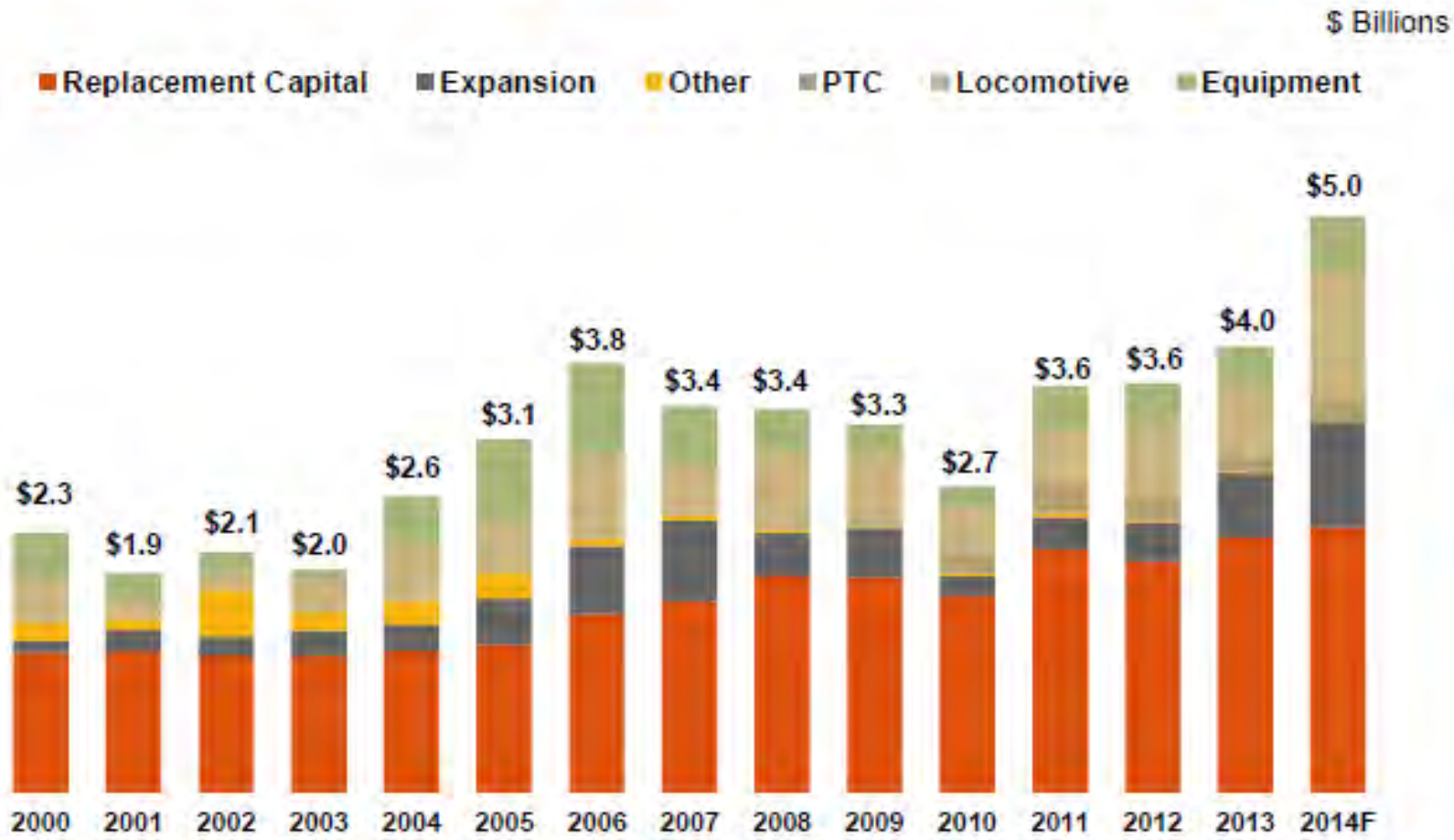
Shale Plays in the Lower 48

What we haul:
North American oil production



BNSF RAILWAY

We Are Deploying Unprecedented Capital

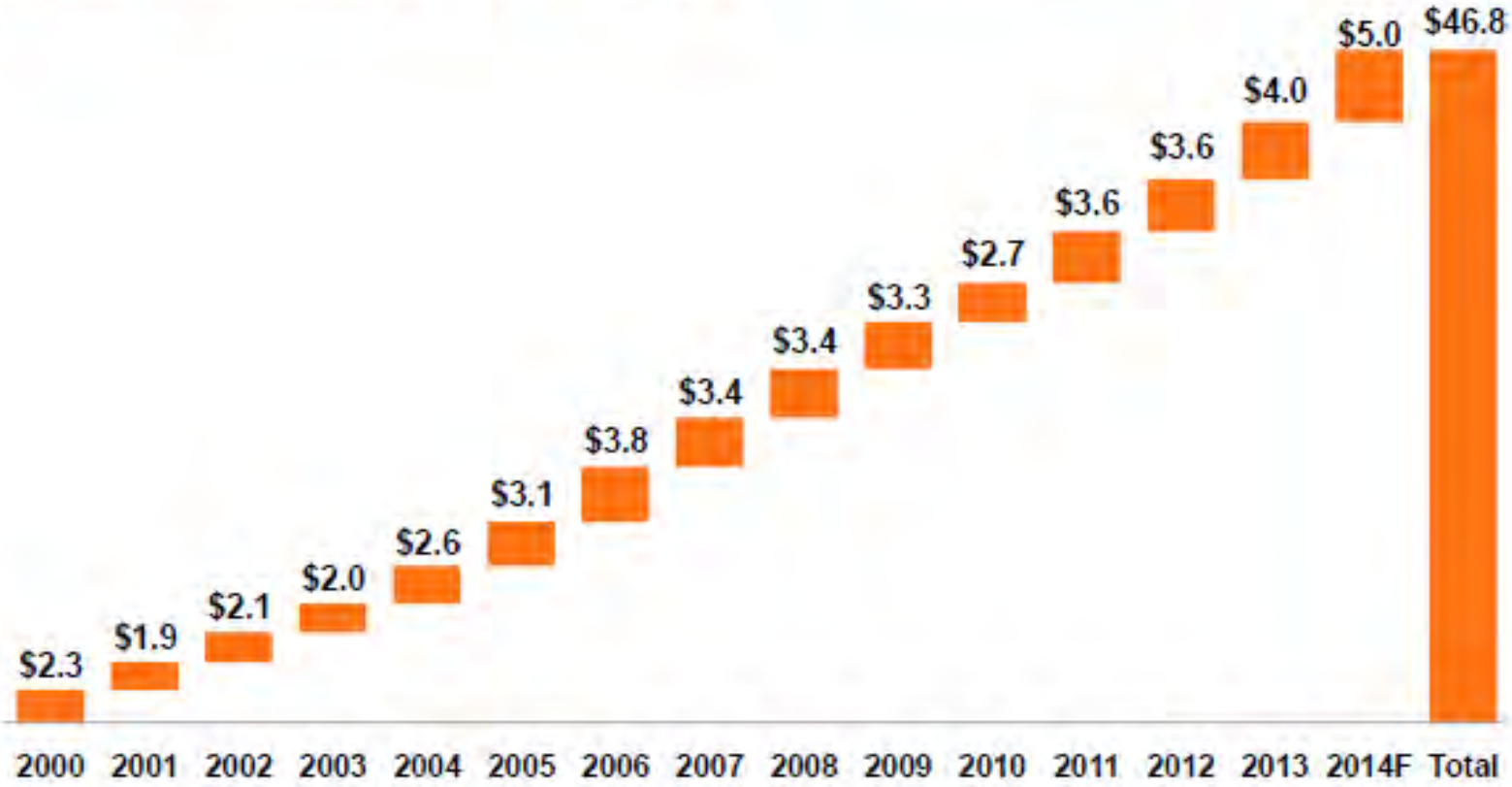


BNSF

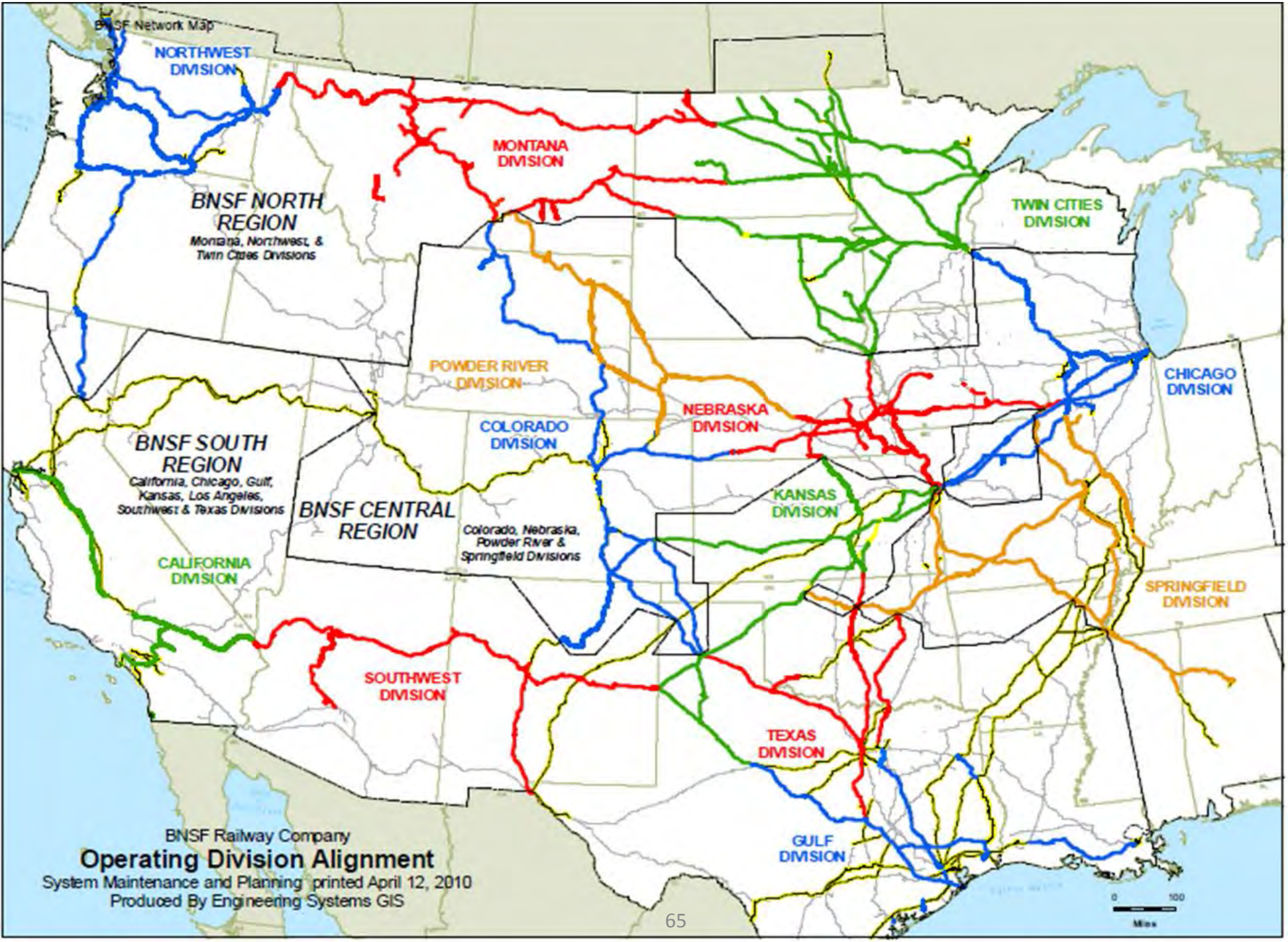
Reliability of rail:
Investing in infrastructure to support demand

Capital Commitments 2000-2014 Total

$ Billions



BNSF RAILWAY


BNSF Network Map
NORTHWEST DIVISION
MONTANA DIVISION
BNSF NORTH REGION
Montana, Northwest, & Twin Cities Divisions
TWIN CITIES DIVISION
POWDER RIVER DIVISION
CHICAGO DIVISION
NEBRASKA DIVISION
COLORADO DIVISION
BNSF SOUTH REGION
California, Chicago, Gulf, Kansas, Los Angeles, Southwest & Texas Divisions
BNSF CENTRAL REGION
Colorado, Nebraska, Powder River & Springfield Divisions
KANSAS DIVISION
CALIFORNIA DIVISION
SPRINGFIELD DIVISION
SOUTHWEST DIVISION
TEXAS DIVISION
GULF DIVISION
BNSF Railway Company
Operating Division Alignment
System Maintenance and Planning printed April 12, 2010
Produced By Engineering Systems GIS
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100
Miles

North I-25 Commuter Rail Update

Technical Advisory Committee (TAC) Meeting #1

Southwest Weld Service Center

9 a.m. – September 25, 2014

Attendees: Scott McCarey (Boulder County), A.J. Euckert (Dacono), Timothy Wilder (Fort Collins), Richard Leffler (Frederick), Phil Greenwald (Longmont), Becky Karasko (NFRMPO), Nate Vanderbroek (NFRMPO), Janet Lundquist (Weld County), David Krutsinger (CDOT), Carol Parr (CDOT), Randy Grauberger (PB), Jack Tone (PB), Lukas Schroeder (PB), Matt McDole (LS Gallegos), Mike Anders (HC Peck), Pete Rickershauser (BNSF Liaison)

The call-in option for the meeting was not possible when the telephone systems at the Southwest Weld County Service Center crashed just before 9 a.m. The project team shared a PowerPoint presentation with the group. Copies of the draft presentation had been previously e-mailed to the TAC members.

Background & Project Overview – David Krutsinger

This study will focus on the commuter rail element and the preferred alternative in the 2011 North I-25 EIS. The project team does not plan on re-opening the alternatives analysis. Recommendations from recent studies such as the Northwest Area Mobility Study (NAMS), North Metro EIS, Interregional Connectivity Study, and others will be considered during this process. Currently the study is in the beginning stages, so any input on refining the scope of this effort from stakeholders is welcome.

The goals of the study are to update three items of the commuter rail element in the EIS:

- A new corridor wide ROW analysis.
- The Operational Plan will be updated based on identified changes, compared to prior assumptions/findings, for track, intersections, and right-of-way (ROW).
- Capital costs will be updated to reflect 2014 dollars, and will be put in to a standard FRA or FTA cost categories.

The study does not anticipate any formal public meetings. However, CDOT will host a website that will include comment opportunities and several press releases will be issued throughout the course of the Study. Also planned are two policy level meetings with the North Front range MPO and the US 287 Coalition, once before, and once after the draft report. Many agencies and municipalities have offered up spaces on their websites to provide study updates. We will be sure to keep everyone updated on progress going forward.

North I-25 EIS Overview – Carol Parr

The purpose and need of the Final 2011 North I-25 EIS identified alternative modes of travel for Northern Colorado. The results of a survey that was taken indicated a strong desire by residents to see regional transit options.

Twenty different alternative technology/alignment combinations were considered between Longmont and the Fort Collins northern terminus, including all major highway corridors and current or abandoned rail corridors.

The commuter rail system was chosen over high speed rail because commuter rail would serve the communities along the corridor better and it would be the most compatible with the RTD's FasTracks system.

The western alignment (US 287/BNSF corridor) alternative was chosen as the preferred alternative. This alignment proposed to run on existing BNSF track between Fort Collins and Longmont. This alternative was chosen because it was most consistent with the local municipalities' land use plans, resulted in fewer impacts to environmental resources, and had the most potential to serve low income and minority populations.

The preferred alternative in the FEIS assumed single tracking with passing sidings. Full double tracking was evaluated in the DEIS, but wasn't carried forward. Additionally, between the DEIS and FEIS, BNSF requested that a maintenance road be included in the preferred alternative along the existing BNSF tracks.

TAC Member Feedback:

A.J. Euckert from the City of Dacono asked where the maps used in the TAC meeting and additional information and materials from the FEIS could be accessed.

David indicated that new graphics from this study would be made available to the project stakeholders and he would also provide a link to the EIS material, which is located on the CDOT website. (http://www.coloradodot.info/projects/north-i-25-eis/Final-EIS).

Timothy Wilder had a question in regards to the land use changes from the FEIS, if the study incorporates low income population analysis. This factor has changed considerably throughout the corridor since the EIS was completed.

David said that this could be part of the ROW analysis; however any such information that the local agencies could provide for the study would be very helpful.

Scott McCarey from Boulder County wondered if the delay of RTD's Northwest Rail would affect this study at all.

- Since the North I-25 Commuter Rail element of the EIS is not fully funded, delay of RTD's Northwest and North Metro construction does not have an immediate impact on the analysis.
- The station location has moved closer to downtown Longmont as opposed to the Sugar Mill location previously proposed. Also, Phil Greenwald suggested the option at 1st and Terry St. is no longer available.

Jack Tone noted that RTD is putting priority and emphasis on the BRT system from Boulder to Longmont along SH 119 and Longmont to Broomfield along US 287, per the outcomes of the Northwest Area Mobility Study (NAMS).

Timothy Wilder asked if ridership assumptions were made in the 2009 EIS. There were estimates provided in Chapter 4.2.6 of the EIS. These numbers were projected for 2035 ridership. With the success of the other transportation alternatives now implemented within the corridor since the EIS, ridership studies would be a good follow-up to the current study. The region's MPOs will be working on this and the updated information would be good data to have.

One on One Stakeholder Meeting Themes – Randy Grauberger

The general meeting themes are provided in the PowerPoint presentation from the TAC meeting. One-on-one stakeholder meeting notes are in the process of being distributed to the respective meeting attendees for comment. Once these notes are finalized they will be made available to all stakeholders for reference and a Summary of the ten one-on-one stakeholder meeting notes will also be prepared.

One of the major comments made during a number of the stakeholder meetings was that the current near-term priority was to get a third general purpose lane extended on the I-25 corridor. Carol Parr from CDOT Region 4 noted and wanted to make everyone aware that the proposed third lane of I-25 is currently not a general purpose lane, but is being evaluated as a toll lane.

Phil Greenwald from the City of Longmont noted that in additional to the themes in the presentation, much of the current conversation is focused on the proposed BRT system along SH 119 from Boulder to Longmont.

The City of Fort Collins one-on-one stakeholder meeting was held the day prior to this first TAC meeting and wasn't included in the presentation slides. The theme of this meeting was to focus not on just one transportation solution within the Fort Collins area, but to also consider all the options necessary to meet the travel demands of the projected growth of the city/area.

BNSF Railway Update – Pete Rickershauser

Pete Rickershauser gave the group a good background of the BNSF system and the railroad's role in this study. The portion of track this study is analyzing lies within the Front Range Subdivision of BNSF Railway's Powder River Division.

In contrast to the North I-25 EIS assumptions, the BNSF business model has changed. This has a lot to do with the economic recession. From 2006 to 2013, the big difference in system traffic is reflected by a 229% increases in crude oil shipping. The BNSF rail line in the study area is heavily impacted by petroleum production because many of the inputs and outputs for petroleum production originate and terminate along this BNSF line, most notably in conjunction with the Great Western Railway of Colorado (GWRCO) in Windsor, CO; traffic is predominantly interchanged with GWRCO in Fort Collins, and moves over BNSF north and south from Fort Collins and other GWRCO interchanges in Loveland and Longmont.

BNSF does consider accommodating commuter rail on the system, if the proposed commuter rail can commit to BNSF's Commuter/passenger Principles. Pete provided the group a list of the principles and focused on several of the notable principles that are relevant to this study. A copy of the BNSF principles will be provided with these meeting notes. In short, for a commuter rail operation to be compatible with an existing BNSF line, the project's sponsor and lead public agency must agree to meet all of the principles.

Pete next discussed the highlights of the one-on-one meeting with BNSF:

- The existing BNSF system would not allow the commuter rail to exceed 90 MPH.
- Running a single track commuter rail system on the existing line would affect BNSF's ability to meet delivery times and their customers' needs. Furthermore, even if freight rail didn't exist on this line, there would still be a need for double track to adequately serve the proposed 55 commuter trains per day that are being requested.
- Currently there are a minimal number of passing tracks along the alignment for meet/pass capacity for existing freight traffic on the line. This accentuates the need for double tracking to maintain reliable operations for both freight and passenger purposes.
- A federal mandate requires all commuter rail lines and freight lines carrying certain hazardous materials to have positive train control (PTC) installed on each locomotive and along the track infrastructure. This would be a one-time capital expense of approximately $3 -$7 million/track mile.

BNSF generally owns a ROW 100 feet wide from Fort Collins to Longmont (wider at some points, narrower at others) and they are willing to work with CDOT in coming up with a solution to add the needed track. Any new track must be spaced at least 20 feet from center of the existing BNSF track.

Timothy Wilder noted that the only location in the corridor where BNSF operates on someone else's right-of-way is in Fort Collins.

Right of Way Update - Mike Anders

In the 2011 EIS, every property was analyzed and it projected there would be approximately $25 million in private acquisitions needed. This equated to around 85 business and residence relocations. As part of the ROW analysis for this study, this information will be evaluated and updated as needed. Mike has already done some research into the ratio between public and private property ownership within each of the jurisdictions. Greater than 75% of property along the corridor is privately owned.

In 2009 dollars, it was projected that around $40 million would be needed for the preservation of the ROW.

Carol Parr noted that she has maps of the ROW, historical resources, and wetlands along the corridor from the EIS.

Janet Lundquist from Weld County asked if it would be possible to gather shape files of these data. The shape files would greatly help communities preserve the ROW as they create development plans. Other

TAC members supported a product of this study being these types of files related to the rights-of-way required for this proposed future commuter rail system.

There was a question as to the ownership of the ROW in Longmont along Atwood Street. It was determined that BNSF owns this ROW.

Operations Plan Update – Jack Tone

The original operations plan from the 2011 EIS assumed single track shared with BNSF. As we know now, a second track adjacent to the existing BNSF line is required in addition to some additional passing tracks. This will provide adequate passing and siding track to maintain schedule reliability. Additional analysis will need to be done within the RTD North Metro ROW to identify locations where additional double track can be placed. The operations planning will also take a look at identifying diesel multiple unit (DMU) commuter rail vehicles that are light enough to be compatible with the North Metro line structures. The North Metro line bridges are being designed to run lighter electric multiple unit (EMU) vehicles. Additionally, the difference between RTD's high-level platforms (floor level at 50.5" over the top of rail) versus low-floor platforms (floor level nearer curb-height) is important to consider for reasons of accessibility, operating requirements, and safety.

The operations planning will also identify a location for the systems maintenance facility. The town of Berthoud has identified a vacant plot of land nearby that could be a possible location. An analysis would need to be completed taking a look at the deadheading associated with placing the maintenance facility in the middle of the corridor.

Cost Update – Matt McDole

The cost update relies heavily on the ROW analysis and the operations planning. This will be the last of the study tasks to be completed. Certain assumptions need to be finalized before an accurate cost estimates can be established. For example, the number of stations and their locations and the number of parking lots needed at each will impact the cost. Also, where will the alignment be if the Weld County Road 7 alignment south of SH 119 (that identified in the EIS) is not feasible? The decision to use either side of the I-25 ROW or the I-25 median could create different impacts on southwest Weld county communities/businesses and cost estimates.

Other commuter rail lines around the country will be researched and the recent rail related studies completed by CDOT and RTD will also be used to help estimate the cost. As mentioned above, the cost estimate will be formatted into a standard FRA or FTA cost format. An example of the format is included in the PowerPoint presentation.

Future Meetings and Other Business

The next TAC meeting is tentatively scheduled to take place in early to mid-November (possibly the second or third week). There will be an email poll sent out to help determine the best time and place to meet. Timothy Wilder noted that there is a possibility the next meeting could be held at Fort Collins' South Transit Center, just south of Harmony Road and US 287 in Fort Collins.

Adjournment

Thank you all to those that could attend the meeting and we appreciate the feedback. The project team would like to apologize to those that tried to call in for the technical difficulties with the phone system. If anyone has anything more to add to these meeting notes, including those that were not able to make the meeting, feel free to provide comments and we can get them added.

Also, we'd like to extend a big thank you to Weld County for hosting the meeting at the Southwest Weld County Services Center.

The meeting adjourned at 11:00 a.m.

North I-25 Commuter Rail Update

Technical Advisory Committee

December 9, 2014

COLORADO
Department of Transportation

PARSONS BRINCKERHOFF

Agenda

- Introductions
- Meeting Notes from 9/25 TAC Meeting
- CDOT North I-25 ROD Open House Overview
- Revised Project Schedule
- Right of Way Issues
- Operations Plan Update
- Cost Update Report
- Other Issues/ Next Steps

Meeting Notes from September 25, 2014 TAC Meeting

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Commuter Rail Questions/Comments at 10/8/14 Open House on N. I-25 EIS ROD

- When will Commuter Rail be implemented?
- Use Great Western Railway from Longmont to the east instead of SH 119
- When will property owners along I-25 be contacted about commuter rail?
- Create maps that will show ROW needed for commuter rail so specific right-of-way actions can be taken
- I-25 alignment better than Weld County Road 7; too built up at this time
- Why are you studying right of way again, this far ahead of implementation?
- I-25 Corridor may be better commuter rail solution to Fort Collins

North I-25 Commuter Rail Update

Revised Project Schedule

DRAFT: **North I-25 EIS Commuter Rail Update Schedule**

Revised December 4, 2014

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
	Month		**July**					**Aug.**				**Sept.**				**Oct.**				**Nov.**				**Dec.**						**Jan.**					**Feb.**			**Mar.**		
	Weeks			**1 to 5**				**6 to 9**				**10 to 13**				**14 to 18**				**19 to 22**					**23 to 27**					**28 to 31**						**32 to 35**		**36 - 39**		
Task 1	**Project Management**																																							
	Notice-to Proceed	🟩																																						
	Weekly Project Management Calls						🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	
	Kickoff Meeting					🟩																																		
	Monthly invoicing						🟩				🟩				🟩					🟩				🟩					🟩				🟩				🟩			
Task 2	**Scope Refinement**																																							
	1 on 1 meetings w/stakeholders							🟩	🟩	🟩	🟩	🟩	🟩																											
Task 3	**Stakeholder and Public Involvement**																																							
	Technical Advisory Committee Mtgs.													🟩 1											🟩 2															
	Coordination mtg with CH2MHill																																🟩 1							
	Policy Updates for NFRMPO/287 Coalition																																🟩 1				🟩 2			
Task 4	**Right-of Way Analysis**																																							
	Right-of Way Analysis						🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩													
Task 5	**Operating Plan Update**																																							
	Meetings with Connetics								🟩 1			🟩 2			🟩 3																									
	Operating Plan Update							🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩												
Task 6	**Cost Update**																																							
	Cost Update											🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩											
Task 7	**Project Reporting and Completion**																																							
	Draft Report																																							
	PB submits to CDOT																															🟩								
	CDOT Review																															🟩	🟩							
	PB revises																																	🟩						
	PB submits to stakeholders																																		🟩	🟩				
	PB revises																																				🟩			
	Final Report																																							
	PB submits to CDOT																																					🟩		
	CDOT Review																																					🟩	🟩	
	PB revises																																						🟩	🟩
	Final Report submittal																																							🟩

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Right of Way (ROW) Issues

- North I-25 EIS – Package A
- Fort Collins Vicinity
- Longmont Vicinity
- Adjacent to I-25 Corridor Between SH 119 and WCR 8


1933
1933
2292
2292
BNSF
2292
Santa Fe

North I-25 EIS - Package A

- Double tracking was evaluated in DEIS
- Stakeholders requested full evaluation of single tracking in FEIS
- Single tracking was assumed for Preferred Alternative in FEIS
- Four grade separated crossings assumed – all the rest were at-grade crossings (Traffic impacts of at-grade crossings included in EIS)
- From DEIS to FEIS, BNSF requested a maintenance road be added along the BNSF tracks

FEIS Commuter Rail Descriptions

2011 North I-25 EIS – Package A

- Uses existing BNSF railroad, plus one new track from Ft. Collins to downtown Longmont, and new double track would be constructed from Downtown Longmont to North Metro end-of-line.
- Eliminates the need for a parallel maintenance road

2011 North I-25 EIS – Preferred Alternative

- Includes a single track with four sections of passing track (i.e. double tracking) from the FasTracks North Metro end-of-line station to Fort Collins.
- Double tracking was maximized wherever possible to provide operational flexibility, single tracking was used in order to avoid impacts to sensitive resources and reduce costs

Right-of-way Impacts associated with ROW acquisition - Package A vs Preferred Alternative

RESOURCE	PACKAGE A Commuter Rail	PREFERRED ALTERNATIVE Commuter Rail
Relocations	36 residences, 21 businesses	5 less residences, 8 less businesses impacted
Economic Impacts resulting from right-of-way and relocations *	$5,079,960 loss in tax base	17% less loss in tax base than Package A
Neighborhoods	Exacerbated "barrier" effect to adjacent communities from rail alignment	Some "barrier" effects to adjacent communities from rail alignment
Environmental Justice	16 residential relocations in low-income and/or minority communities	2 less relocations
Right-of-way acreage **	349 acres required for right-of-way acquisition for transit components	95 less acres
Wetland Impacts *	Direct impacts to wetlands as a result of both highway and transit components: 18.33 acres for wetlands, 3.54 for jurisdictional open water	3.02 less acres impacted for wetlands, 0.67 less acres for jurisdictional open water
Floodplains	11 commuter rail crossings	1 less crossing
Wildlife*	2.01 acres of sensitive wildlife habitat impacted, including 49 raptor nests 1.82 acres of aquatic habitat impacted	0.07 less acres included, but 8 more raptor nests 0.28 less acres of aquatic habitat impacted
Historic Resources *	Direct impacts to 7 properties listed or eligible for the National Register of Historic Places	3 less properties
Hazardous Waste *	Potential to directly impact 18 parcels with recognized environmental concerns	Potential to direct impact to 2 more parcels

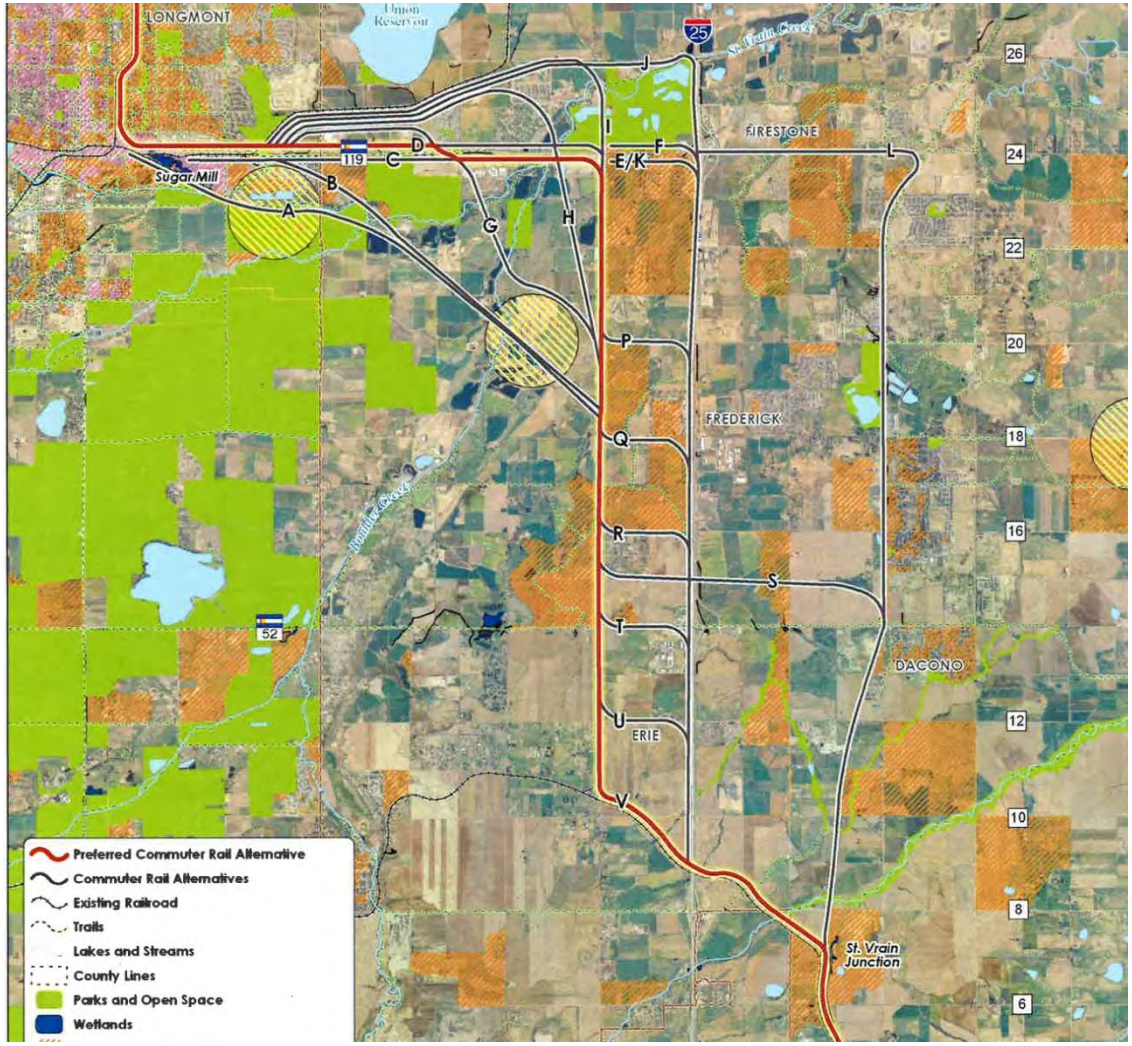
***Includes impacts from highway, rail and express bus components**

**** Includes impacts from rail and express bus only**

Longmont Area Drawings

- See Meeting Handouts

EIS Commuter Rail Alignment along Weld Co. Road 7



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Corridor Adjacent to I-25 Drawings

- See Meeting Handouts

Operating Plan Update

- Station Locations in North I-25 EIS
- Longmont Station Location (Previous handout)
- Weld County Station Location in I-25 Vicinity (Previous handout)
- Fort Collins Quiet Zone


4341
4341
BNSF
PARKING

Commuter Rail Station Locations In North I-25 EIS

- Fort Collins Downtown Transit Center
- Colorado State University
- South Transit Center – South of Harmony Road
- North Loveland – 29th Street
- Downtown Loveland – Approximately 6th Street
- Berthoud – North of SH 56, east of BNSF
- North Longmont - North of SH 66, east of BNSF
- Longmont at Sugar Mill- north of alignment
- Weld Co. Rd 8 – NW quadrant of WCR 8 and I-25

North I-25 EIS Map

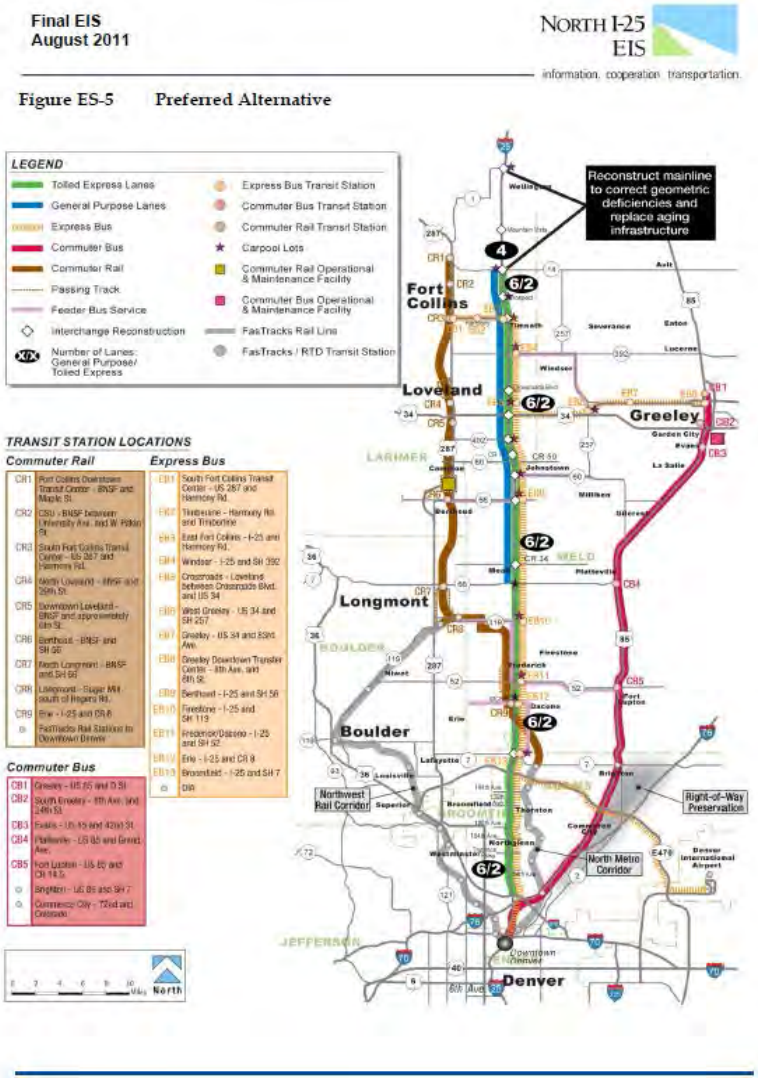


Photo of DMU Vehicle

Cost Update

- Comparison to Other Commuter Rail Operations in United States

Survey Information Requested from Commuter Rail Properties

- Costs in FTA or FRA Standard Cost Code (SCC) Format
- Cost per Track Mile – New Track
- Cost per Track Mile – Reconditioned Existing Track
- Year of Costs
- Maps Showing Track Layouts, Routes and Stations
- Station Costs
- Maintenance Facility Costs
- Rolling Stock Costs

Survey Information Requested from Commuter Rail Properties (cont).

- Project Description
  - Length of Route
  - Single or Double Track
  - Number and Length of Sidings
  - Length of Shared Track with Freight or Other Host Railroad
  - Length of any Existing Track Used
  - Condition of Existing Track Used
  - Used Track Upgrades
  - Length of New Track Built
  - Type of Signal System
  - Positive Train Control
  - Grade Crossings
  - Estimates for Rolling Stock or Track Needs

Commuter Rail Properties Contacted

- Preliminary Cost Information Received
  - Washington County Commuter Rail (Portland)
  - Salt Lake City to Provo Frontrunner
  - Orange County Metrolink Service
  - Orlando SunRail (Florida DOT)
  - New Mexico Rail Runner
  - Northern California eBART
- Awaiting Cost Information
  - Minnesota NorthStar
  - Seattle Sounder Transit
  - Philadelphia
  - DART – Denton/Texas
  - Miami TriRail

Other Issues/Next Steps

- Policy Updates
  - NFRMPO
  - US 287 Coalition
- Future TAC meetings
  - TAC # 3 – Possibly January 20, 21, or 22 ??
  - TAC # 4 – Late February / Early March

TAC # 3 Tentative Agenda Items

- Focus on Operations Plan Elements
  - Grade Crossing and Grade Separation Analysis
- Finalize ROW Analysis
- Preliminary Range of Cost Estimates
- Determine date for final TAC meeting

Adjournment

North I-25 Commuter Rail Update

Draft Notes from Technical Advisory Committee (TAC) Meeting #2

City of Loveland Library

2 p.m. – December 9, 2014

Attendees: Scott McCarey (Boulder County), Kurt Ravenschlag (Fort Collins), Richard Leffler (Frederick), Phil Greenwald (Longmont), Becky Karasko (NFRMPO), Alex Gordon (NFRMPO), Jeanne Shreve (NATA), Gary Behlen (Eire), Dave Lindsay (Firestone) David Krutsinger (CDOT), Carol Parr (CDOT), Randy Grauberger (PB), Matt McDole (LS Gallegos), Mike Anders (HC Peck),

Those calling in were Suzette Mallette (Larimer County), Cathy Norris (BNSF Railway), and Henry Stopplecamp (RTD).

The project team shared a PowerPoint presentation with the group that contained a few revisions to the PowerPoint provided to all TAC members earlier. A copy of the revised version will be e-mailed December 10th to the three individuals that called in.

September 25 TAC Meeting Notes

There were no suggested changes or revisions to the meeting notes from the September 25 meeting.

Commuter rail Questions/Comments at 10/8 Open House on N. I-25 EIS Record of Decision – David Krutsinger, CDOT

David noted the key comments and questions that he fielded at the October 8 meeting (highlighted on the PowerPoint presentation). There were no additional questions or comments from the TAC members that attended this Open House.

Revised Project Schedule

David next discussed the revised schedule as shown on the PowerPoint. He highlighted the need to identify dates for the Policy briefings to the North Front Range MPO and the US 287 Coalition. These items were discussed in more detail later in the meeting.

North I-25 EIS Package A Commuter Rail vs. Preferred Alternative Commuter Rail – Carol Parr, CDOT

Carol described the differences between Package A and the Preferred Alternative. The primary difference was that Package A assumes double tracking and the Preferred Alternative assumed single tracking with four sections of passing track between North Metro and Fort Collins.

It was noted that the PowerPoint slide statement: "Package A eliminates the need for a parallel maintenance road" was incorrect.

A second slide highlighted the various differences between Package A and the Preferred Alternative in terms of the various resources impacted by the commuter rail project (wetlands, historic resources, neighborhoods, right-of-way acreage, etc.)

Twenty different alternative technology/alignment combinations were considered between Longmont and the Fort Collins northern terminus, including all major highway corridors and current or abandoned rail corridors. These were discussed later in the presentation.

The commuter rail system was chosen over high speed rail because commuter rail would serve the communities along the corridor better and it would be the most compatible with the RTD's FasTracks system.

The western alignment (US 287/BNSF corridor) alternative was chosen as the preferred alternative. This alignment proposed to run on existing BNSF track between Fort Collins and Longmont. This alternative was chosen because it was most consistent with the local municipalities' land use plans, resulted in fewer impacts to environmental resources, and had the most potential to serve low income and minority populations.

The preferred alternative in the FEIS assumed single tracking with passing sidings. Full double tracking was evaluated in the DEIS, but wasn't carried forward. Additionally, between the DEIS and FEIS, BNSF requested that a maintenance road be included in the preferred alternative along the existing BNSF tracks.

Operating headways assumed in the operations plan will determine the need for double track or passing tracks.

Draft Drawings of the Conceptual Corridor for Commuter Rail – Randy Grauberger, Parsons Brinckerhoff

Randy next discussed the draft conceptual alignment drawings that were provided to those in attendance. There were 17 sheets in total beginning at the northern end of line at the South Fort Collins Transit Center in Fort Collins and proceeding south along the corridor to the North Metro end of line station at 162nd Ave. The following identifies the comments/discussion that took place:

Sheet 15 – South Fort Collins

- There needs to be a crossover track shown to the south of the MAX BRT station. Also, the commuter rail track should not be shown north of the South Transit Center station
- Randy noted the black lines on the sheets highlight potential right-of-way takes to accommodate the double track. The light blue lines depict BNSF's existing right-of-way.

Sheet 14 – Fort Collins and Larimer County south of Trilby Road

- No comments

Sheet 13 – North Loveland south of 57th Street.

- It was suggested that the more expensive homes (ROW) in this area are those that are along the east side of the lake; west side of BNSF. Proposed right-of-way takes appear to be on the east side of the BNSF ROW.
- The north Loveland station location needs to be shown on this sheet at 29th Street.

Sheet 12 – Downtown Loveland and Big Thompson River

- The City can provide good aerials of Loveland if necessary.
- Is there enough room under the US 34 overpass of the BNSF to get two tracks and a maintenance road?
- The downtown station location needs to be shown.
- The BNSF interchanges freight rail traffic with the Great Western Railway in the vicinity of 10th Street. Show these sidings and wyes.
- Just to the south of the Big Thompson River, there are gravel ponds and the track is on an embankment in this location. There will be park and 4F issues in this area.
- September 2013 floods washed out the BNSF in this vicinity.
- Show all bridges over major water features: Big Thompson, Little Thompson and St. Vrain.

Sheet 11 – South Loveland to US 287 Overpass north of Berthoud

- No comments

Sheet 10 – Berthoud

- Show Berthoud Station location (north of SH 56 east of BNSF)
- Some potential ROW takes depicted on the sheet.

Sheet 9 – Agricultural land south of Berthoud

- No Comments

Sheet 8 – Agricultural land north of Longmont

- Show the BNSF passing tracks that are on either this sheet or sheet 9

Sheet 7 – North Longmont (south of SH 66

- Show North Longmont station location north of the Walmart (east of BNSF)
- Has Longmont traffic staff evaluated the impacts to Atwood Street with a double track railroad?
- There will be numerous ROW issues in this area of the corridor.

Sheet 6B –Longmont (Alternative # 2) which has the Sugar Mill site as the Station Location.

- Need to add the connection to the NW rail end of line at 1st and Terry
- This is the original EIS station location and alignment along Great Western Railway.
- Fits into city's plan for Pace St. Improvements

Sheet 6 - Longmont (Alternative #1) which uses the proposed RTD station west of Main and south of 1st.

- RTD Station on south side of 1st; not to the north
- Constrained parking at 1st and Main (approximately 750 – 1,000 spaces)
- Causes some delay in operations due to operator needing to change from one end of the train to the other.
- Route east of downtown Longmont follows alignment proposed in Northwest Area Mobility Study (NAMS)

Sheet 5 – SH 119 Corridor

- There was a questions as to possibly keeping the commuter rail on the north side of SH 119 until it would turn south at I-25 to avoid the three 90 degree turns.
- There needs to be a new rail bridge shown over the St. Vrain River.

Sheet 4B – I-25 South of SH 119 with I-25 crossover south of Bella Rosa Parkway (Weld Co Rd. 20)

- The proposed "reverse" curve with this alternative has considerable length and would slow the operating speed somewhat.
- Avoids Indian Peaks Business Park on west side of I-25
- The I-25/SH 119 interchange is the third busiest interchange on the north I-25 corridor.

Sheet 4A - I-25 South of SH 119 with I-25 crossover at the 90 degree turn to the west (south of Del Camino)

- No or very little purchase of ROW by being in CDOT I-25 ROW
- Erie prefers Weld County Road 7 alignment that was in the EIS
- NAMS identified a station location to the south of the short piece of east/west commuter track just to the SW of Del Camino.
- What other alternatives were looked at in this study other than I-25? No other alignments were looked at in this study.
- The EIS analyzed approximately 20 alignments and the NAMS evaluated at four different alignments for the North Metro Extension between Longmont and 162nd Ave.
- Frederick prefers alignment on east side of I-25.
- Structure over I-25 is shorter (less costly) and is a faster speed curve than in 4B.
- Since the growth in the North Front Range is primarily increasing to the east, should the entire route be along I-25 instead of the BNSF between Fort Collins and Longmont?
- Considerable interest within communities to keep it through their downtown areas for economic development.
- Communities will eventually need to make the decision after this study puts new data on the table.

Sheet 3 – I-25 North and South of SH 52 interchange

- New station in NE quadrant of SH 52 and I-25 interchange

- How many parking spaces should be at this station?
- Frederick supports this location; more traffic/potential ridership and an available location.
- Erie prefers Weld County Road 8 station instead of SH 52 Station.
- SH 52 station provides better spacing of stations than Weld County Road 8.
- Developer discussions have occurred re: NW quadrant and CDOT Park and Ride near CDOT maintenance facility
- NATA proposes to meet with CDOT Region 4 to discuss the need for a Study of the SH 52 corridor.

Sheet 2 – I-25 and Weld County Road 8

- NAMS station for 'North Metro Extension' alignment proposed to be just south of Boulder Industrial Lead alignment just to the south of Weld Co. Rd. 8.

Sheet 1 – North Metro end of line station at 162nd Ave. along Colorado Boulevard.

- Broomfield holding very preliminary discussions with RTD to route North Metro Rail from 162nd to the vicinity of I-25 and SH 7.
- No firm plans to do this at this time. NATA will bring this idea forward at an upcoming meeting.

Fort Collins Quiet Zone – Kurt Ravenschlag **–** Fort Collins

Kurt noted that the city will be filing for a waiver, in the 1st or 2nd quarter of 2015, from the Federal Railroad Administration for some relief related to the normal quiet zone requirements. City Council will be voting on this at their next meeting. They will suggest that the BRT upgrades and other spot improvements can provide appropriate safety in the corridor without train horns from Laurel Street to US 287 north of downtown. This will not impact the proposed commuter rail project since commuter rail will end at the South Fort Collins Transit Center.

Commuter Rail Stations in the EIS

Randy Grauberger discussed the slide listing the station locations in the EIS. The two most northerly stations; Downtown Fort Collins Transit Center and CSU station are no longer planned since the commuter rail will end at the South Fort Collins Transit Center.

Scott McCarey (Boulder County) noted that the more stations; the slower the overall travel time. He asked if it were true that ridership was not being revisited in this Study. David Krutsinger confirmed that there would be no new ridership estimates in this study but that it would need to be done at some point in the future prior to any implementation plan being developed.

DMU Vehicle

Henry Stopplecamp (RTD) noted that the DMU vehicle shown on the PowerPoint (San Diego's Sprinter), is not DMU compliant. DMU vehicles on this commuter rail line would be required to be FRA compliant.

Henry said the new EMU vehicles just received by RTD for the new FasTracks commuter rail services beginning in 2016, that are currently located behind DUS, can be converted to DMU according to the manufacturer.

Cost Update – Comparison to Other Commuter Rail Operations in US - Matt McDole (LS Gallegos)

Matt described the effort to obtain comparative information from other commuter rail properties around the US. He described the agencies that had been contacted and the types of information being sought from those agencies.

Jeanne Shreve if additional information related to "How were the commuter rail projects funded?" could be requested from these agencies. David Krutsinger said he would follow-up on this request.

Matt stated that the cost of the proposed project would be compared to the previous EIS costs and would be provided in Standard Cost Category (SCC) codes.

BNSF will be asked to provide their input as to the appropriate figures related to the unit costs used in the Cost Estimate for the project.

There will be a figure added to the overall project costs associated with the cost associated with reserving a permanent easement to operate on the BNSF; or, to pay BNSF for "operating time slots". The Project Team will be evaluating this in the near future.

Other Issue/Next Steps

Becky Karasko (NFRMPO) noted that either February 5 or March 5 would work for the Policy update to the NFRMPO. David Krutsinger reported that February 26 or March 26 appeared to be the dates for the US 287 Coalition briefing.

Jeanne Shreve asked for an update to NATA and David said he would be glad to provide such an update. Jeanne will provide David with possible dates for the briefing.

Dates for the next meeting of the TAC were also discussed. A Doodle Poll for dates the week of January 20 – 22 and also dates the last week of January will be sent out soon to determine availability of the TAC members and the Project Team.

Phil Greenwald (Longmont) asked what the next steps were in terms of locking up necessary rights of way. Are the changes being discussed in terms of the relocation from Weld Co. Rd. 7 to the I-25 corridor going to require re-opening the EIS? What high priority properties could be purchased with the $40 million CDOT has available for this purpose?

The EIS will need to be re-opened with additional ridership estimates, etc. prior to implementation.

Adjournment

Thank you all to those that could attend the meeting and/or participate via the conference call connection. We appreciate the feedback.

Also, we'd like to extend a big thank you to Loveland for hosting the meeting at their Library.

The meeting adjourned at 4:10 p.m.

North I-25 Commuter Rail Update

Technical Advisory Committee

Longmont Public Library

January 29, 2015

COLORADO Department of Transportation

PARSONS BRINCKERHOFF

Agenda

- Introductions
- Meeting Notes from 12/9 TAC Meeting
- Operations Plan Update
- Right of Way Update
- Cost Estimate Update
- Future Policy Updates
- Other Issues/ Next Steps
  - CDOT BUSTANG Update
  - Informational Updates from TAC Members
  - Future 4th TAC meeting?
  - Other

Approve Meeting Notes from December 9, 2014 TAC Meeting

Operating Plan Update

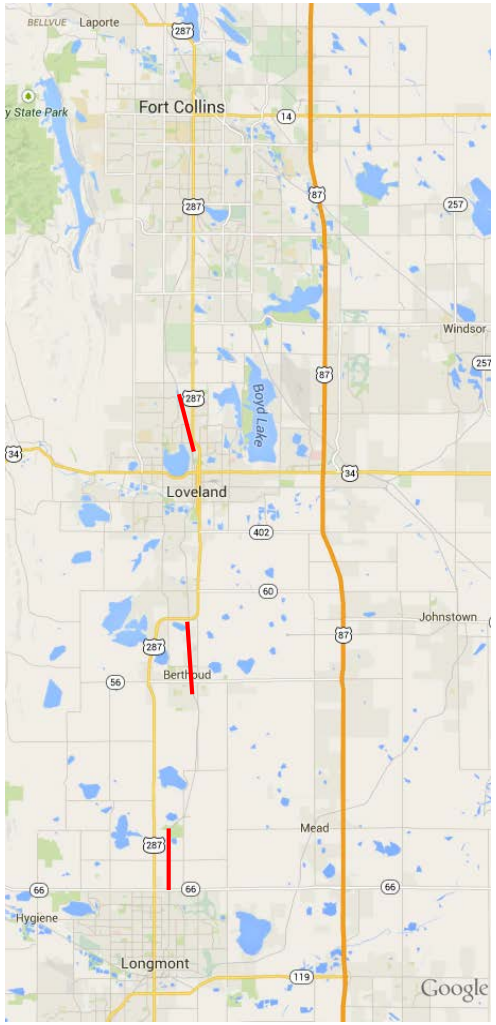
- Station Distances
- Proposed Passing Siding Locations
- Running Times and Speeds
- Concept of Operations
- List of Grade Crossing and Grade Separation Needs
- Berthoud Maintenance Facility

Distances Between Stations

Station	Miles Between Stations	Cumulative Miles
Ft. Collins So. Transit Center	0.00	0
North Loveland	7.08	7.08
Loveland	1.66	8.74
Berthoud	6.42	15.16
North Longmont	7.34	22.50
Longmont (Sugar Mill)	4.20	26.70
SH 52	9.70	36.40
162nd Avenue	7.52	43.92
144th Avenue	2.62	46.54
124th Avenue	2.40	48.94
112th Avenue	1.45	50.39
104th Avenue	1.80	52.19
88th Avenue	1.85	54.04
72nd Avenue	2.40	56.44
Nat. Western Stock Show	3.29	59.73
Denver Union Station	2.76	62.49

Preliminary Passing Siding Locations

Location	Limits
Loveland	South of N. Loveland Station / (north) 3 miles
Berthoud	South of Berthoud Station / (north) 2.4 miles
Longmont	South of N. Longmont Station / (north) 2.1 miles
I-25 Frontage Road	From Furniture Row / (north) 4.6 miles



Running Times and Speeds

Station	Time Between Stations	Average Speed Between Stations	Total Trip Time	Maximum Speed in each Segment
Ft. Collins	0:00		0:00	
North Loveland	8:45	57.1	8:45	70
Loveland	3:49	40.0	12:34	50
Berthoud	9:31	46.4	22:05	70
North Longmont	10:18	48.0	32:23	65
Longmont (Sugar Mill)	7:44	39.1	40:17	45
SH 52	11:43	55.8	52:00	75
162nd Avenue	10:00	50.1	62:00	75
DUS	36:00		98:00	

Concept of Operations

- DMU Equipment
- 1 hour 40 minute schedule
- Initial Operating Plan to Match RTD's North Metro
  - 40 minute Peak headways (30 minutes in EIS)
  - 60 minute Off-Peak headways (60 minutes in EIS)
- 10 minute turn-around at DUS
- 42 trains per weekday
- 5 train set, 3 cars per train, for initial service
- 3 spare cars

Concept of Operations (Example)

Southbound

Depart Ft. Collins	Arrive DUS
5:10 AM	6:50 AM
5:50 AM	7:30 AM
6:30 AM	8:10 AM
7:10 AM	8:50 AM
8:10 AM	9:50 AM
9:10 AM	10:50 AM
10:10 AM	11:50 AM

Northbound

Depart DUS	Arrive Ft. Collins
6:00 AM	7:40 AM
7:00 AM	8:40 AM
7:40 AM	9:20 AM
8:20 AM	10:00 AM
9:00 AM	10:40 AM
10:00 AM	11:40 AM

Grade Crossing Protection and Grade Separation Needs

- See Meeting Handout

Berthoud Maintenance Facility

- Stand-alone DMU maintenance
- Operations Center
- Car cleaning
- Toilet servicing
- Car washer
- Wheel true
- Fueling
- Overnight storage, tracks for 18 cars

Right of Way Update

- Assumptions from North I-25 EIS
  - Land Classes/Types were based upon 2006 Ownership Data and did not consider future development
  - Access modifications would be required
  - Displacements occur where ROW impacts are substantial
  - Displaced occupants are eligible for relocation benefits
- Assumptions for the North I-25 Commuter Rail Update
  - Use same assumptions from EIS for consistency
  - Revised alignment utilizes I-25 corridor rather than WCR 7

Right of Way Update (cont.)

- Update will approximate total land impacted in acres by segment
- 4 Land Classes will be reported
  - Agricultural
  - Residential
  - Industrial
  - Commercial
- Total property displacements by segment will be reported
  - Displacements will be either residential or business

BNSF "Costs" Assumptions

- CDOT's Inter-regional Connectivity Study (ICS) used $11/sq. ft. 'rural' and $22/sq. ft. 'urban'
- Assume 30 feet of average width to be acquired (accounts for double track segments).
- Assume 16 miles 'rural' and 10 miles 'urban' in 26 mile corridor between So. Fort Collins and BNSF wye in Longmont
- Total cost is $62+ million
- Add 30% premium for 'continuous nature of railroad ROW in Corridor'; Estimated cost to BNSF is $80 million

- Other comparables:
  - NAMS cost est. for operating slots in BNSF corridor was $220 million (41 mile corridor)
  - Utah cost to acquire UP ROW for Frontrunner South was $185 million (175 mile corridor) in 2002


1933
1933
2292
2292
BNSF
2292
Santa Fe

Cost Update

- Comparison of Other Commuter Rail Operations in United States
- Preliminary Cost Estimates

NEW MEXICO RAILRUNNER

Segment:	Belen, NM to Santa Fe, NM
Length of Line:	97 Miles
Date in Service:	2006 (To Albuquerque), 2008 (To Santa Fe)
Type of Rolling Stock:	Locomotive with coaches and cabs

Description:

* Single track with passing track locations
* Commuter line shares portions of line with Amtrak, BNRR and Santa Fe Southern Railway
* Only 14 miles of entire length was constructed, remainder rehabilitated
* Rio Metro Regional Transit District has no plans to upgrade system to PTC
* No federal dollars were used on project
* Actual expenditures are not readily available.

Total Cost of Project (Adjusted to 2014):	$633 Million
Cost of Stations (Adjusted):	Unknown
Cost of Maintenance Facility (Adjusted):	None
Cost of Right-of-way (Adjusted):	$91 Million
Cost of Rolling Stock (Adjusted):	$81 Million
Cost per Route Mile (Adjusted):	$6.5 Million
Cost per Track Mile (Adjusted):	$6.5 Million
* Cost of Core Project/Route Mi. (Adj.):	$4.8 Million
* Cost of Core Project/Track Mi. (Adj.):	$4.8 Million

* Core project excludes stations, maintenance facility, ROW and vehicles

ORLANDO SUNRAIL (ORLANDO, FL)

Segment:	Connects DeBary with stations in Orlando
Length of Line:	32 route miles / 57.2 track miles
Date in Service:	2014
Type of Rolling Stock:	Locomotives (7) and bi-level coaches (20)
Description:	* One additional track of 18 mi. added to existing single track. Approximately 11 miles of double track existed prior to project. Approx. Two (2) mi. will remain single track. * 2 maintenance/storage/operations center buildings constructed with project. Primary maintenance to be performed in existing Amtrak maintenance facility * Freight operator (CSXT) paid a portion of track. Cost not included in cost estimates
Total Cost of Project (Adjusted to 2014):	$407.1 Million
Cost of Stations (Adjusted):	$17.0 Million (12 station platforms)
Cost of Maintenance Facilities (Adjusted):	$11.7 Million
Cost of Right-of-way (Adjusted):	$44.2 Million
Cost of Rolling Stock (Adjusted):	$70.0 Million
Cost per Route Mile (Adjusted):	$12.7 Million
Cost per Track Mile (Adjusted):	$7.1 Million
* Cost of Core Project/Route Mi. (Adj.)	$8.3 Million
* Cost of Core Project/Track Mi. (Adj.)	$4.3 Million

* Core project excludes stations, maintenance facility, ROW and vehicles

SEATTLE SOUNDER (SEATTLE, WA)

Segment:	M-Street to Lakewood, WA
Length of Line:	10 Miles
Date in Service:	2012
Type of Rolling Stock:	Locomotives (6) and coaches (24)
Description:	* One track…commuter trains operate northbound in am and return in pm * Project involved replacement of ties, track and ballast on existing track * Track shared with Tacoma Rail. Tacoma Rail uses line when commuter rail is not operating * Implementation of PTC underway
Total Cost of Project (Adjusted to 2014):	$141.6 Million
Cost of Stations (2 stations) (Adjusted):	$29.4 Million
Cost of Maintenance Facility (Adjusted):	None
Cost of Right-of-way (Adjusted):	Agreement with BNSF to operate line and add trips on other line(s)- $185M (not included in costs)
Cost of Rolling Stock (Adjusted):	$71.2 Million
Cost per Route Mile (Adjusted):	$13.7 Million
Cost per Track Mile (Adjusted):	$13.7 Million
* Cost of Core Project/Route Mi. (Adj.):	$4.1 Million
* Cost of Core Project/Track Mi. (Adj.):	$4.1 Million

WESTSIDE EXPRESS (PORTLAND, OR)

Segment:	Wilsonville, OR to Beaverton, OR
Length of Line:	14.8 route miles/Approx. 15 track miles
Date in Service:	2006
Type of Rolling Stock:	Diesel Multiple Units (4 total) with trailers (4 total)
Description:	* Single track with passing locations is shared with freight operator * Temporal separation used with freight line * Existing line was reconstructed as part of the project
Total Cost of Project (Adjusted to 2014):	$207 Million
Cost of Stations (Adjusted) (5 with parking):	$19.0 Million
Cost of Maintenance Facility (Adjusted):	$5.3 Million
Cost of Right-of-way (Adjusted):	$12.1 Million
Cost of Rolling Stock (Adjusted):	$30.3 Million
Cost per Route Mile (Adjusted):	$14.0 Million
Cost per Track Mile (Adjusted):	$13.8 Million
* Cost of Core Project/Route Mi. (Adj.):	$9.5 Million
* Cost of Core Project/Track Mi. (Adj.):	$9.4 Million

* Core project excludes stations, maintenance facility, ROW and vehicles

A-TRAIN (DALLAS,TX AREA)

Segment:	Denton County, TX with Dallas Area Rapid Transit (DART)
Length of Line:	21.3 Route Miles / 25.6 Track Miles
Date in Service:	2011
Type of Rolling Stock:	Diesel Multiple Units (DMU) – 11 vehicles (Stadler GTW 2-car vehicles)
Description:	* Single track with 6 passing sidings * Temporal separation of freight trains from commuter trains (night operation) * No Federal funding used * Currently implementing Positive Train Control (PTC)
Total Cost of Project (Adjusted to 2014):	$340 Million
Cost of Stations (5 stations) (Adjusted):	$31.2 Million
Cost of Maintenance Facility (Adjusted):	$22.3 Million
Cost of Right-of-way (Adjusted):	$19.0 Million
Cost of Rolling Stock (Adjusted):	$88.1 Million
Cost per Route Mile (Adjusted):	$16.0 Million
Cost per Track Mile (Adjusted):	$13.3 Million
* Cost of Core Project/Route Mi. (Adj.):	$8.4 Million
* Cost of Core Project/Track Mi. (Adj.):	$7.0 Million

* Core Project excludes stations, maintenance facility, ROW and vehicles

NORTH COUNTY TRANSIT DISTRICT

SPRINTER (SAN DIEGO, CA)

Segment:	Oceanside, CA to Escondido, CA
Length of Line:	22 route miles/33.5 track miles
Date in Service:	2008
Type of Rolling Stock:	Diesel Multiple Units Twelve (12) 2-car articulated units
Description:	* Existing track was re-constructed to carry passenger trains and to minimize flooding of track * Freight operations are accommodated through temporal separation * Three (3) 3.5 mile areas have double track for passing * Cost of train control and communication system control (adjusted to 2014) is approx. $87.6 Million * Sometimes referred to as a light rail facility
Total Cost of Project (Adjusted to 2014):	$628 Million
Cost of Stations (Adjusted) (15 stations):	$52.8 Million
Cost of Maintenance Facility (Adjusted):	$34.3 Million
Cost of Right-of-way (Adjusted):	Not included in cost (Line purchased from SFRR in 1992)
Cost of Rolling Stock (Adjusted):	$67.9 Million (12 DMU articulated vehicles)
Cost per Route Mile (Adjusted):	$28.5 Million
Cost per Track Mile (Adjusted):	$18.7 Million
* Cost of Core Project/Route Mi. (Adj.)	$21.5 Million
* Cost of Core Project/Track Mi. (Adj.)	$14.6 Million

*Core Project excludes cost of stations, maintenance facility, ROW and Vehicles

Bay Area Rapid Transit

E-BART (SAN FRANCISCO AREA)

Segment:	Pittsburg, CA to Antioch, CA
Length of Line:	10.0 Route Miles / 20.0 Track Miles
Date in Service:	Under construction…scheduled for 2018 completion
Type of Rolling Stock:	Diesel Multiple Units (8 vehicles)
Description:	* Double track within freeway right-of-way * No roadway crossings necessary * Platforms being constructed by CALTRANS
Total Cost of Project:	$515 Million (estimated)
Cost of Stations (One station/2 platforms):	$46.0 Million (estimated)
Cost of Maintenance Facility:	$28.3 Million (estimated)
Cost of Right-of-way:	$32.0 Million (parking facility and corridor ROW)
Cost of Rolling Stock:	$68.2 Million (8 vehicles and spare parts)
Cost per Route Mile:	$51.5 Million
Cost per Track Mile:	$25.8 Million
* Cost of Core Project/Route Mi.:	$34.1 Million
* Cost of Core Project/Track Mi.:	$17.05 Million

* Core project excludes stations, maintenance facility, ROW and vehicles

UTA FrontRunner

FRONTRUNNER SOUTH (UTAH)

Segment:	Salt Lake City, UT to Provo, UT
Length of Line:	44.4 route miles / 55.5 track miles
Date in Service:	2012
Type of Rolling Stock:	Locomotives (7), freight switcher, cab cars (10), coaches (8), rehabilitated coaches (10)
Description:	* One track added to parallel Union Pacific track * Approximately 10 miles of double track constructed where right-of-way width allowed * Shares 2-mile section with freight operator * Implementing Positive Train Control (most was installed with construction project) * Cost/mile high due to challenging areas of construction, limited access to construction sites, crossings and neighborhood construction
Total Cost of Project (Adjusted to 2014):	$1.07 Billion
Cost of Stations (Adjusted) (8 stations with parking):	$23.4 Million
Cost of Maintenance Facility (Adjusted):	$1.4 Million
Cost of Right-of-way (Adjusted):	$92.2 Million
Cost of Rolling Stock (Adjusted):	$88.7 Million
Cost per Route Mile (Adjusted):	$24.1 Million
Cost per Track Mile (Adjusted):	$19.3 Million
* Cost of Core Project/Route Mi. (Adj.)	$19.5 Million
* Cost of Core Project/Track Mi. (Adj.)	$15.6 Million

* Core project excludes stations, maintenance facility, ROW and vehicles

North I-25 Commuter Rail Update

N. I-25 COMMUTER RAIL COST ESTIMATE UPDATE

TRANSIT PROPERTY COMPARISONS

COMMUTER RAIL LINE	ROUTE MI./TRACK MI.	NUMBER OF TRACKS	SHARED WITH FREIGHT?	ROLLING STOCK	TOTAL COST/ROUTE MI. (ADJUSTED)	TOTAL COST/TRACK MI. (ADJUSTED)	CORE COST/ROUTE MI. (ADJUSTED) *	CORE COST/TRACK MI. (ADJUSTED) *	DESCRIPTION
RAILRUNNER - New Mexico	97/97	Single track with passing track locations	Shared with freight and Amtrak	Locomotive w/ coaches	$6.5 Million	$6.5 Million	$4.8 Million	$4.8 Million	Track upgraded in various locations with 18 miles of new track. 15 stations constructed as part of project. Installation of PTC not being implemented.
SUNRAIL - Orlando FL	32/57.2	Double track except for 2 miles of single	Minimal sharing of track with CSX RR	Locomotive w/coaches	$12.7 Million	$7.1 Million	$8.3 Million	$4.3 Million	Project involved adding a second track to an existing line. 18 mi. of double track was initially in place prior to construction. Existing ROW wide enough for additional track. Temporal separation with freight line and Amtrak.
SOUNDER - Seattle, WA	10.3/10.3	Single Track	Temporal separation used.	Locomotive w/coaches	$13.7 Million	$13.7 Million	$4.1 Million	$4.1 Million	Existing track was improved with new ties, rail and ballast. Agreement with BNSF in 2010 allowed permanent access and additional trips. Negotiated cost in 2010-$185 million. PTC currently being implemented.
WESTSIDE EXPRESS - Portland, OR	14.8/15	Single track with passing track locations	Temporal separation used.	Diesel Multiple Unit (DMU)	$14.0 Million	$13.8 Million	$9.5 Million	$9.4 Million	Project consisted of track re-construction, additional track and bridge replacements. Existing ROW wide enough for constrution of passing track. PTC currently being implemented.
A-TRAIN - Denton, TX	21.3/25.6	Single track with 6 passing locations	Temporal separation used.	Diesel Multiple Unit (DMU)	$16.0 Million	$13.3 Million	$8.4 Million	$7.0 Million	Existing rail corridor was purchased. Track was upgraded. PTC currently being implemented.
FRONTRUNNER - Utah	44.4/55.5	Single with 11 miles of double track	Two-mile section shared with U.P	Locomotive w/ coaches	$24.1 Million	$19.3 Million	$19.5 Million	$15.6 Million	Project constructed an additional track within U.P. corridor with passing track. Challenging construction due to terrain and limited access. 20' wide corridor purchased from UPRR for 175-mi. corridor length. Cost of purchase - $185 million. Similar in many respects to N. I-25 Commuter Rail. PTC being implemented after project completion.
SPRINTER - Oceanview, CA	22/33.5	Single Track with passing track locations	Temporal separation used.	Diesel Multiple Unit (DMU)	$28.5 Million	$18.7 Million	$21.5 Million	$14.6 Million	Existing track and bed were re-constructed and raised to accommodate passenger rail and remove flood potential. PTC installation outside original cost.
E-BART - San Francisco	20-Oct	Double track	No	Diesel Multiple Unit (DMU)	$51.5 Million	$25.8 Million	$34.1 Million	$17.0 Million	New 2-track line within Freeway ROW. Completion anticipated in 2018. PTC being implemented with current project.
N. I-25 COMMUTER RAIL (CURRENT PRELIMINARY ESTIMATE)	43.9/56.2	Single track with passing track locations	Not shared. Access to sidings required however.	Diesel Multiple Unit (DMU)	$27.2 Million	$21.2 Million	$21.5 Million	$16.8 Million	Will have separate track within BNSF corridor and exclusive track when outside BNSF corridor. Preliminary Cost Estimate includes stations, maintenance facility, double track for passing and major structure over I-25. Positive Train Control (PTC) is included in project. Construction access may be challenging.

* Core cost is total cost minus costs of stations, maintenance facility, rolling stock and right-of-way

Note: Cost for N. I-25 Commuter Rail Estimate based upon N. I-25 Cross-over with Sugar Mill Station Alignment - $1,261.4 Million

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North I-25 Commuter Rail Update

		COST COMPARISON BETWEEN E.I.S. (2009) AND PRELIMINARY ESTIMATE UPDATE (2015)			
			BY STANDARD COST CODE (SCC)		
SCC COST CODE	COST CODE DESCRIPTION	ENVIRONMENTAL IMPACT STATEMENT (2009) (IN MILLIONS $)	ENVIRONMENTAL IMPACT STATEMENT (ADJUSTED TO 2014) (19.8% TOTAL ESCALATION USED) (IN MILLIONS $)	PRELIMINARY COST ESTIMATE (2014) (IN MILLIONS $)	EXPLANATION OF DIFFERENCE
10	GUIDEWAY/TRACK ELEMENTS (TRACK AND STRUCTURES)	$78.7	$94.3	$165.8	EIS assumed a Hwy. 7 alignment with sections of track shared with BNSF. EIS assumed 18.0 m. of single track and 6.7 mi. of double track. Current Preliminary Cost Estimate Update assumes 31.6 mi. of single track and 12.3 miles of double track. Total track increased by 79%. Extrapolated cost approximately equal.
20	STATIONS/TERMINALS	$32.8	$39.3	$15.0	Very similar assumptions between EIS and Preliminary Cost Estimate Update except Update has no pedestrian overpasses and elevators.
30	SUPPORT FACILITY (YARDS, SHOPS, ADMIN. BLDGS.)	$56.9	$68.2	$25.5	Preliminary cost estimate update based upon similar structure and yard to available data from RTD FasTracks Projects.
40	SITE WORK AND SPECIAL CONDITIONS (STRUCTURES, RET. WALLS)	$69.7	$83.5	$132.3	Cost differential is primarily due to expanded route track and associated construction.
50	SYSTEMS (COMMUNICATIONS, SIGNALS, ELECTRICAL, TRAIN CONTROL)	$94.9	$113.7	$241.3	Current Cost Estimate Update includes Positive Train Control (PTC).
60	RIGHT-OF-WAY, LAND, EXISTING IMPROVEMENTS	$24.8	$29.7	$129.8	Preliminary Cost Estimate Update provides an initial cost for ROW from BNSF, additional parcels needed for construction and associated soft costs.
70	VEHICLES	$150.8	$180.7	$78.0	EIS assumed 29 DMU vehicles at $5.2 million each. Current operational plan requires a total of eighteen (18) DMU vehicles at between $4.2 million-$4.5 million depending upon powered vs. unpowered.
80	PROFESSIONAL SERVICES	$140.4	$168.2	$124.0	Based upon typical percentages and costs from similar project.
90	CONTINGENCY	$35.3	$42.3	$281.1	30% contingency used for preliminary cost estimate update based upon conceptual nature of project status.
	TOTALS	**$684.30**	**$819.9**	**$1,192.8**	
Note: Preliminary estimate used - N. I-25 Cross-over with Sugar Mill Station Alignment					

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North I-25 Commuter Rail Update

ALTERNATIVE ALIGNMENTS	ESTIMATED COST (PRELIMINARY)	COMMENTS
N. Cross-over of I-25/Sugar Mill Station	$1,192.8 Million	
N. Cross-over of I-25/1st Main Station	$1,195.2 Million	$2.4 Million Additional
Bella Rosa Cross-over of I-25 Sugar Mill Station	$1,195.6 Million	$2.8 Million Additional
Bella Rosa Cross-over of I-25/1st Main Station	$1,198.0 Million	$5.2 Million Additional

Future Policy Updates

- US 287 Coalition (February 26, 2015)
- NFRMPO (March 5, 2015)

- Key Messages?
- Level of Detail for Presentation?

- Need to get on Agendas for these meetings

Other Issues/Next Steps

- BUSTANG Update
- Informational Updates from TAC members
- Future TAC meeting
  - TAC # 4 –March 13 to Review Draft?
- Draft report to TAC – March 6
- Final Report to CDOT – April 3

Thank You for Your Participation!!

Meeting Adjourned

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Bustang
Interregional Express Bus Service

ROUTES


Map of Routes
Green Line - North Route
Blue Line - West Route
Orange Line - South Route
Ft. Collins
Loveland
Eagle
Vail
Glenwood Springs
Frisco
Federal Center
Downtown Denver
Colorado Station
Monument
Woodmen
Tejon
BUSTANG

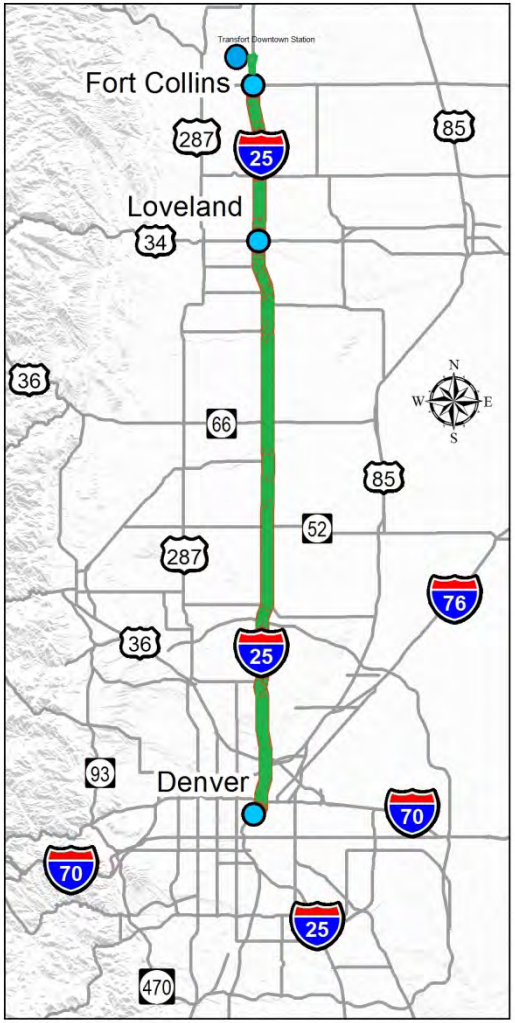
GREEN ROUTE Denver – Fort Collins

- **6 round trips/weekday**
  - 4 peak commute times
  - 2 off-peak
  - Budget for expansion from 6 to 7 round trips per day

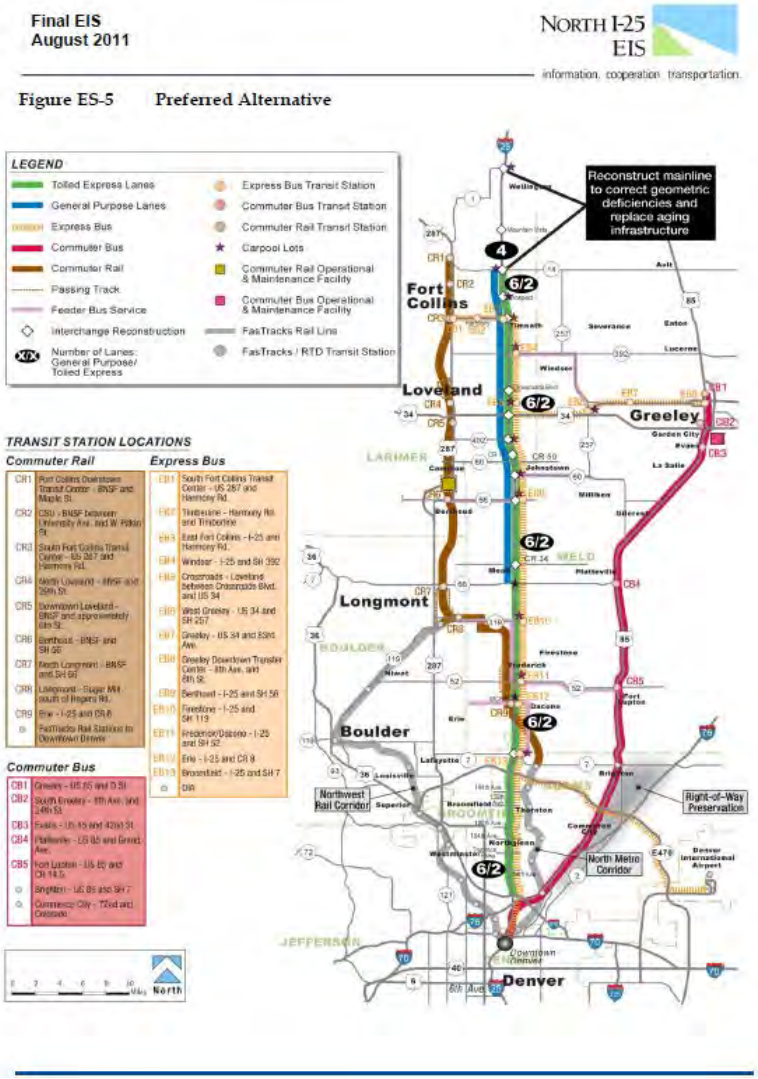
- **Park and Rides/Stations**
  - Downtown Fort Collins Transit Center
    - ✓ Off-peak only
  - I-25/Harmony Rd. PnR – Ft. Collins
  - I-25/US 34 PnR - Loveland
  - Denver Union Station

- **Utilize current/future managed lanes & direct DUS access**

- **Ridership estimate**
  - 171-257 passengers/day



North I-25 EIS Map



North I-25 Commuter Rail Update
Technical Advisory Committee (TAC) Meeting No. 3

Longmont Public Library, 409 4th Avenue, Longmont
January 29, 2 – 4 p.m.
DRAFT Meeting Notes

I – Introductions

David reminded those in attendance that this is the third meeting of the TAC. At the first meeting, the focus was on project objectives and scoping. The second meeting was a more detailed review of preliminary right of way (ROW), operations plan and cost estimate updates.

TAC attendees

Agency Members
David Krutsinger, CDOT
Karen Schneiders, CDOT
Karen Stuart, NATA
Gary Behlen, Erie
Dave Klockeman, Loveland
Stephanie Brothers, Berthoud
Richard Leffler, Frederick
Steve Stanish, Frederick
Phil Greenwald, Longmont
Brian Welch, RTD
Kurt Ravenschlag, Ft Collins (on telephone)

Consultant Team
Randy Grauberger, PB
Jack Tone, PB
Jason Longsdorf, PB
Matt McDole, LSG,
Randy Teague, LSG
Mike Anders, HC Peck
Pete Rickershauser, LLC

II - Meeting Notes from December 9, 2014 Technical Advisory Committee Meeting

- There were no comments so those notes will be finalized.

Randy Grauberger thanked Phil Greenwald and the City of Longmont for hosting today's meeting.

III – Operations Plan Update – Jack Tone

Distances between Stations

- Harmony Road was MP 0.00. Total length is 62 miles.
- Used the same assumption of stations (and spacing) as the EIS except that the alignment was shifted to be adjacent to I-25 near Highway 52 interchange, and provided a station there.
- Per discussions with Fort Collins, the north terminal will be at the South Transportation Center, the south end of the BRT.
- Summary of distances between stations was provided in a PowerPoint chart.

- The EIS assumed shared operation between BNSF freight and commuter rail. Since then, freight traffic increase and safety issues are such that shared track usage is not feasible. Also high level platforms are not feasible for freight operations. Our assumption is that there will need to be a second, single-track for commuter operations with select locations for passing tracks. The passing track locations are the same as in the EIS except there is one passing track in the I-25 corridor rather than along Weld CR 7.
- The four passing track locations are:
    - Passing siding in North Loveland would be 3 miles long beginning just south of the North Loveland station and proceeding north.
    - Passing siding in Berthoud would be 2.4 miles long beginning just south of the station and proceeding north.
    - Passing siding in North Longmont would be 2.1 miles long beginning just south of the North Longmont station and proceeding north.
    - Passing siding along the I-25 / East Frontage Road begins at approximately Furniture Row just north of Weld County Road 8 and proceeds 4.6 miles to the north.
    - David Krutsinger asked if anyone had questions about the passing track locations.
        - Dave Klockeman asked for a clarification of the North Loveland passing track location.
    - Pedestrian overpasses will no longer be required because the commuter track is on the east side of the freight rail line adjacent to parking(not west like in the EIS)

Running times

- A concept level schedule was provided in the PowerPoint
    - It assumes a 1 minute station stop time at each station. RTD experience is closer to 45 seconds.
    - Compatibility with RTD's North Metro and Denver Union Station (DUS) requires high level platforms, thus eliminating stairs on the trains but requiring stairs/ramps to access/exit the platforms.
    - Expected top speeds range from 45 to 75 mph, and average speeds are39 to 57 mph. These are similar to those in the EIS.
    - Total run time is about 1 hr 40 minutes.
    - Every other train south of 162nd Street to DUS would be a North I-25 train.
- Concept of operation.
    - Diesel Multiple Unit (DMU) equipment
    - Since RTD is operating 20 minute service, the North I-25 peak service would be every 40 minutes.
    - There would be 42 trains per weekday and would require 5 sets of 3-car consists, plus a 3-car back-up consist, plus a 20% spare ratio. A total of 21 cars will be required.
    - 10 minute turnaround time at Denver Union Station
    - Karen Schneiders pointed out that the schedule allows 30 minute turnaround in Ft Collins. This would allow recovery time if there any northbound delays.

List of Grade Crossing Protection and Grade Separation Needs

- Assumptions are that quiet zone operations would require 4 quadrant gates at most crossings in Loveland, Berthoud, and Longmont. These would not be proposed in the more rural areas.
- Because of the parallel freight track between Ft Collins and Longmont, the project would need to upgrade the crossing signals for the freight railroad, as well as relocate some other freight interchange and siding locations.
- Loveland noted the need to provide structures that are more flood resilient along Railroad Ave. /Roosevelt Ave. where the September 2013 Big Thomson River flooding caused considerable damage.
- Karen Schneiders suggested that the Final report talk about the need for resiliency of any necessary structures or other infrastructure, and possibly how that could be done in combination with railroad structures or adjacent roadways to be able to withstand any future flooding on the Little Thompson, Big Thompson, and St. Vrain Rivers.
- Loveland and Longmont both have quiet zone studies that will be integrated.

Berthoud Maintenance Facility

- This facility location was identified in the EIS.
- The maintenance facility is also assumed to include the operations center for dispatching the North I-25 commuter trains outside of RTD territory.
- It would provide for all necessary servicing of the DMU vehicles and to store train equipment overnight.

IV - Right of Way (ROW) Update Mike Anders

- The EIS was much more detailed in terms of ROW analysis than what is being assessed in this effort.
- This study assumes that if this alignment requires a major portion of a property, the entire property would be acquired.
- The EIS assumed 51 total displacements.
- This analysis has removed the segment between Downtown Fort Collins to South Fort Collins Transit Center and also the Weld County Road 7 area.
- This study currently assumes about 4 more displacements and categorized them into 4 categories (agricultural $0.55/sf, residential$1/sf, industrial $13/sf, commercial $22/sf).
- The Update assumption is that a separate commuter track and maintenance road is required so that also increases the width of necessary ROW.
- Kurt Ravenschlag asked if the pocket track at the South Fort Collins Transit Center station required additional ROW. There is also a bike path there, which, if impacted would be a NEPA issue.
    - Jack Tone indicated he believes there was adequate width there for the additional track and platform. Jack indicated he would provide Kurt with a graphic of that location.
- Costs do not include any estimate for CDOT or local municipal properties.

- David Krutsinger wanted to make sure the local municipalities agree with the cost estimate assumptions. Richard Leffler noted that the numbers were in the right ballpark but there would definitely be a range around each value based on exact location.

V - Cost Estimate Update

Estimated cost of railroad right-of-way (ROW)"

- For estimating what it might cost to acquire portions of railroad ROW, the team used assumptions of $11/sf for rural and $22/sf for urban ROW
- A typical premium for continuous railroad ROW is between 10% and 30%. 30% is about $18M for this corridor.
- Approximate cost for 16 miles 'rural' and 10 miles 'urban' for this 26 mile corridor would be $62+ million; or a total of +/- $80 million including the premium.
- Any further communications related to this cost estimate need to be clear that there have been no railroad negotiations related to this estimate.

Comparison of Other Commuter Rail Operations in US (handouts)

Randy Teague provided an overview of the PowerPoint slides showing the following commuter rail properties from around the U.S.

- Rail Runner (NM) cost $633M for 97 miles on shared track, with 14 miles of new construction
- Sunrail (FL) cost $407M for 67 miles on shared track, with 32 miles of new construction
- Sounder (WA) cost $141M for 10 miles on shared track
- Westside Express (OR) cost $207M for 15 miles shared track, DMU.
- DCTA (TX) cost $340M for 21 miles
- Sprinter (CA) $628M for 22 miles
- EBart (CA) $51M for 10 miles
- Frontrunner (UT) cost $1.07B for 44 miles

Preliminary Cost Estimates for North I-25 Commuter Rail (handouts)

Matt McDole next discussed the handout that was developed in regard to the preliminary cost estimate for the North I-25 Commuter Rail.

- $27.2M per route mile for a total $1.19B project cost
- Original EIS estimate was $684M adjusted to 2014 costs would be $819M
- The largest difference was the contingency - $35M in EIS and $281M in current estimate
- Matt also presented some alternates to change the I-25 crossover locations – all of which increased cost by $3-$6M.
- Comments

- Assumptions seem sound. The Project team will need to present this information to the US 287 Coalition and NFR MPO.
- Dave Krutsinger suggested not discussing the "alternate I-25 Crossover locations" in further presentations as they are relatively small in cost and may distract from the main points of the Update.
- Brian Welch suggested comparing these costs to the Northwest Area Mobility Study estimates for the North Metro extension alignment from 162nd to Longmont.
- Brian also suggested discussing the railroad ROW acquisition as a range.
- Pete Rickershauser agreed that all elements should be presented in ranges.

VI - Future Policy Updates – [NFRMPO (3/5) and US 287 Coalition (2/26)]

- David Krutsinger suggested 10-15 slide PowerPoint presentations to be summarized in a 15 minute presentation.
- There will also be a "Bustang" presentation by Mike Timlin at the NFR MPO meeting on March 5th; David should coordinate with him ahead of time.
- NFR MPO (3/5) should be sent information 10 days before the meeting and the US 287 Coalition (2/26) should be sent information 5 business days ahead of time.
- Coordination with NATA, DRCOG, NW Quarterly and the RTD board is also recommended.
- Groups will want to know what the public outreach plan should be.
    - Should there be website updates or a press release?
    - Karen asked if there was going to be time for the public to comment on the report.
        - It was suggested that CDOT should release the Draft and allow for some public comment.
        - A fact sheet summarizing the changes and rationale would be useful.
-

VII - Other Issues / Next Steps

- It was decided the fourth and final TAC meeting will be held on the afternoon of March 13th. Location to be determined.

The meeting was adjourned at 4:10 p.m.

North I-25 Commuter Rail Update

2015 Policy Briefings

US 287 Coalition
NFR MPO
NATA

COLORADO
Department of Transportation

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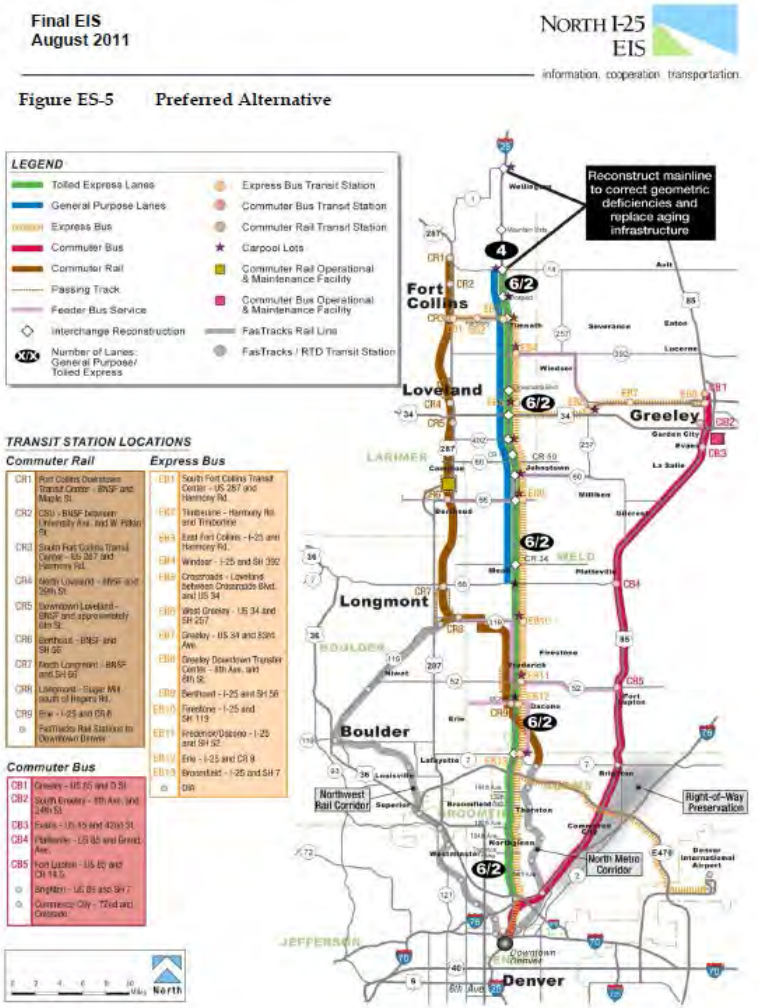
Purpose of the "Update"

- Advance development of an integrated inter-regional transit system envisioned in North I-25 EIS
- Focus on recommended elements of commuter rail
- Synthesize recommendations of recent studies such as NAMS, North Metro EIS, Interregional Connectivity Study, and others
- Refresh information parallel to I-25 planning and prior to the State Rail Plan Update of 2016-2017
- Focus on updates to right of way, operating plan, and cost estimate

North I-25 EIS Map



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Stakeholder Involvement

- Technical Advisory Committee has met three times
- Updates to policy groups, before Draft Report
- September and February meetings with BNSF Railway

BNSF's Front Range Sub, Longmont – Fort Collins

Mileage:	30.8 (Longmont MP 43.6, Fort Collins MP 74.4)	
Interchanges:	Longmont:	Great Western Ry. (OmniTRAX)
	Loveland:	Great Western Ry. (OmniTRAX)
	Fort Collins:	Great Western Ry. (OmniTRAX)
		Union Pacific Railroad (UP)
Daily Usage:	6 freight trains/day (range 5-10 trains/day)	
Passing	Loveland:	4,079 feet
Sidings:	Longs Peak:	1.62 miles (2 grade crossings thru)
	Fort Collins:	7,295 feet (North Yard)

BNSF's Front Range Sub, Longmont – Fort Collins

ROW Width:	Generally 100 feet, some 200 feet
Signaling:	Un-signaled (Track Warrant Control or TWC)
Crossings:	Grade-separated: 2 (US 287, Eisenhower Blvd., Loveland)
	Signaled Grade Crossings: 34
	Un-signaled grade crossings: 30 (14 Mason Street)
Side Tracks:	East Side: 8
	West Side: 4
Maximum Speed:	49 MPH
Speed Restrictions:	Seven, speeds ranging 20-40 MPH, for 17.4 miles or 56% of the total route

Public Information

- CDOT hosted website including comment opportunities
- TAC meetings open to the public, with public comment period
- Press releases during the update effort
- Draft Report Review

Right of Way Analysis

- Analyze four distinct segments
  - Fort Collins South Transit Center to Longmont
    - EIS went to Downtown Fort Collins
  - SH 119: Longmont to I-25
  - I-25: SH 119 to Weld Co. Rd 8
    - EIS alignment along Weld County Road 7
  - RTD Boulder Branch Line
- Original Assumptions for ROW
  - Shared track (EIS)
- Changed Conditions for ROW
  - No “Eastern Freight Rail Bypass”
  - MAX BRT in Mason Corridor
  - Some development since
  - Separate Commuter Rail track

Right of Way Update

- Assumptions from North I-25 EIS
  - Land Classes/Types were based upon 2006 Ownership Data and did not consider future development
  - Access modifications would be required
  - Displacements occur where ROW impacts are substantial
  - Displaced occupants are eligible for relocation benefits
- Assumptions for the Update
  - Use same assumptions from EIS for consistency
  - Revised alignment utilizes I-25 corridor rather than WCR 7
  - Separate track for Commuter Rail

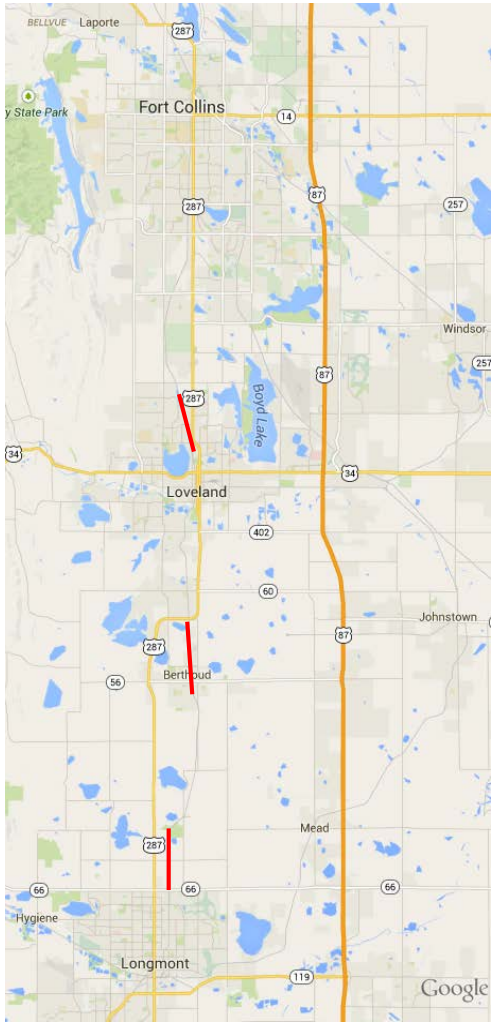
Operating Plan Update

- North I-25 EIS Operating Plan
  - 30 minute peak / 60 minute off-peak service both directions
  - 55 trains per day
  - 9 stations: downtown Fort Collins to RTD 162nd/Colorado station
  - 1 hour 45 minute travel time Fort Collins to Denver Union Station

- Update Operating Plan
  - 40 minute peak / 60 minute off-peak (tied to RTD North Metro service)
  - 44 trains per day
  - 7 Stations South Fort Collins Transit Center to RTD 162nd/Colorado station
  - 1 hour 40 minute travel time South Fort Collins to Denver Union Station
  - High-Level Platforms
  - FRA-Compliant Diesel Multiple Units (DMUs)

Preliminary Passing Siding Locations

Location	Limits
Loveland	South of N. Loveland Station / (north) 3.0 miles
Berthoud	South of Berthoud Station / (north) 2.4 miles
Longmont	South of N. Longmont Station / (north) 2.1 miles
I-25 Frontage Road	From Furniture Row / (north) 4.6 miles



Running Times and Speeds

Station	Time Between Stations	Average Speed Between Stations	Total Trip Time	Maximum Speed in each Segment
Fort Collins	0:00	N/A	0:00	N/A
North Loveland	8:45	57.1	8:45	70
Loveland	3:49	40.0	12:34	50
Berthoud	9:31	46.4	22:05	70
North Longmont	10:18	48.0	32:23	65
Longmont (Sugar Mill)	7:44	39.1	40:17	45
SH 52	11:43	55.8	52:00	75
162nd Avenue	10:00	50.1	62:00	75
DUS	36:00	31.0	98:00 1 hr 38 min	65

Concept of Operations (Example)

Southbound

Depart Fort Collins	Arrive Denver Union Station
5:10 AM	6:50 AM
5:50 AM	7:30 AM
6:30 AM	8:10 AM
7:10 AM	8:50 AM
8:10 AM	9:50 AM
9:10 AM	10:50 AM
10:10 AM	11:50 AM

Northbound

Depart Denver Union Station	Arrive Fort Collins
6:00 AM	7:40 AM
7:00 AM	8:40 AM
7:40 AM	9:20 AM
8:20 AM	10:00 AM
9:00 AM	10:40 AM
10:00 AM	11:40 AM

Berthoud Maintenance Facility

- Stand-alone DMU maintenance
- Operations Center
- Car cleaning
- Toilet servicing
- Car washer
- Wheel true
- Fueling
- Overnight storage: track length for 21 cars

Cost Update

- Improve level of detail
- Update for changed conditions
- Request railroad input & concurrence similar to Northwest Area Mobility Study
- Update from 2009$ to 2014$
- Update to FTA / FRA Standard Cost Categories (SCC)

North I-25 Commuter Rail Update

		COST COMPARISON BETWEEN E.I.S. (2009) AND PRELIMINARY ESTIMATE UPDATE (2015)			
			BY STANDARD COST CODE (SCC)		
SCC COST CODE	COST CODE DESCRIPTION	ENVIRONMENTAL IMPACT STATEMENT (2009) (IN MILLIONS $)	ENVIRONMENTAL IMPACT STATEMENT (ADJUSTED TO 2014) (19.8% TOTAL ESCALATION USED) (IN MILLIONS $)	PRELIMINARY COST ESTIMATE (2014) (IN MILLIONS $)	EXPLANATION OF DIFFERENCE
10	GUIDEWAY/TRACK ELEMENTS (TRACK AND STRUCTURES)	$78.7	$94.3	$165.8	EIS assumed a Hwy. 7 alignment with sections of track shared with BNSF. EIS assumed 18.0 m. of single track and 6.7 mi. of double track. Current Preliminary Cost Estimate Update assumes 31.6 mi. of single track and 12.3 miles of double track. Total track increased by 79%. Extrapolated cost approximately equal.
20	STATIONS/TERMINALS	$32.8	$39.3	$15.0	Very similar assumptions between EIS and Preliminary Cost Estimate Update except Update has no pedestrian overpasses and elevators.
30	SUPPORT FACILITY (YARDS, SHOPS, ADMIN. BLDGS.)	$56.9	$68.2	$25.5	Preliminary cost estimate update based upon similar structure and yard to available data from RTD FasTracks Projects.
40	SITE WORK AND SPECIAL CONDITIONS (STRUCTURES, RET. WALLS)	$69.7	$83.5	$132.3	Cost differential is primarily due to expanded route track and associated construction.
50	SYSTEMS (COMMUNICATIONS, SIGNALS, ELECTRICAL, TRAIN CONTROL)	$94.9	$113.7	$241.3	Current Cost Estimate Update includes Positive Train Control (PTC).
60	RIGHT-OF-WAY, LAND, EXISTING IMPROVEMENTS	$24.8	$29.7	$129.8	Preliminary Cost Estimate Update provides an initial cost for ROW from BNSF, additional parcels needed for construction and associated soft costs.
70	VEHICLES	$150.8	$180.7	$78.0	EIS assumed 29 DMU vehicles at $5.2 million each. Current operational plan requires a total of eighteen (18) DMU vehicles at between $4.2 million-$4.5 million depending upon powered vs. unpowered.
80	PROFESSIONAL SERVICES	$140.4	$168.2	$124.0	Based upon typical percentages and costs from similar project.
90	CONTINGENCY	$35.3	$42.3	$281.1	30% contingency used for preliminary cost estimate update based upon conceptual nature of project status.
	TOTALS	**$684.30**	**$819.9**	**$1,192.8**	
Note: Preliminary estimate used - N. I-25 Cross-over with Sugar Mill Station Alignment					

COLORADO Department of Transportation

Summary

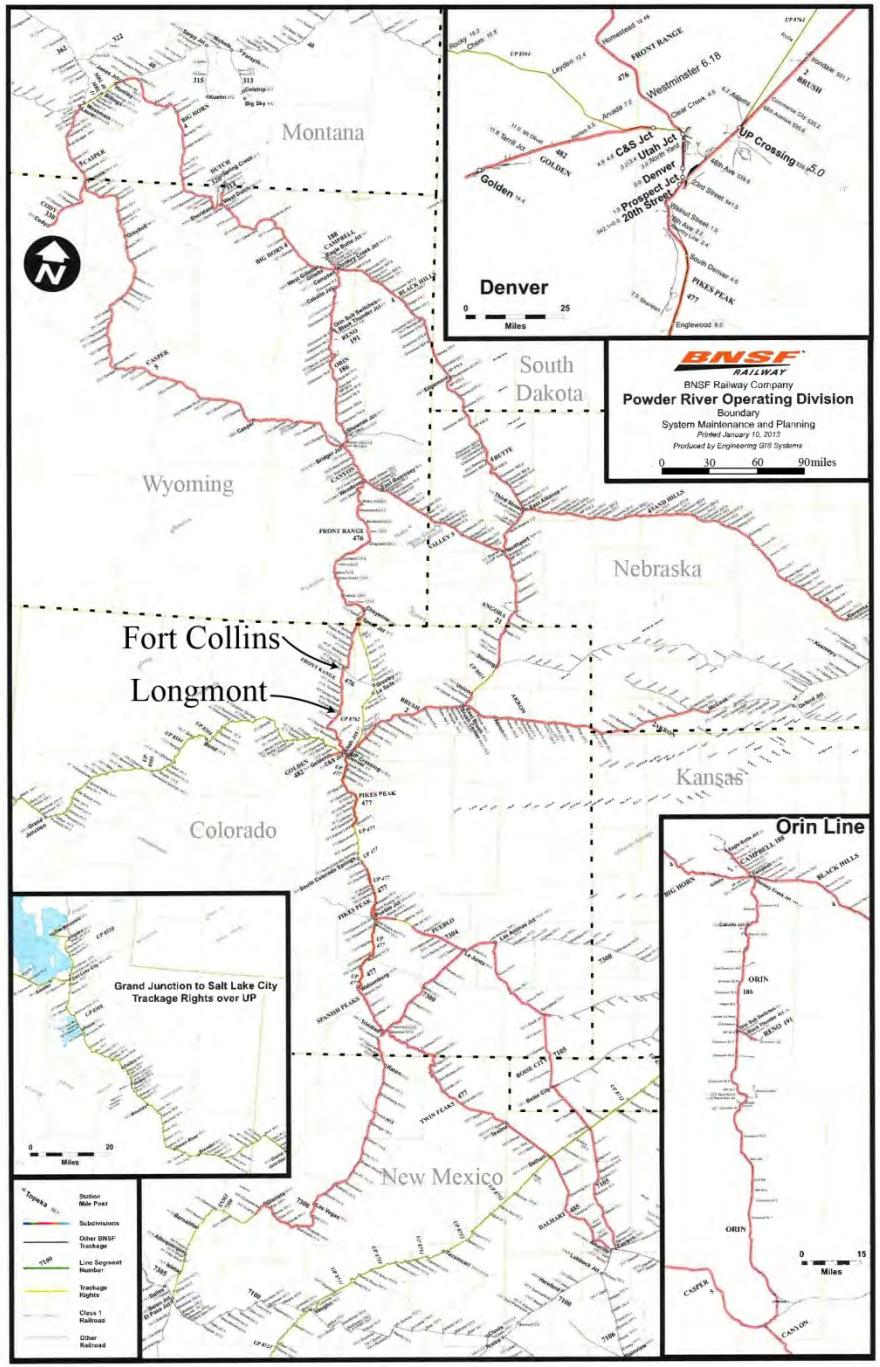
Update Element	DRAFT Findings
Right of Way	• No eastern bypass means a separate Commuter Rail track is required ("double tracking" throughout) • Northern terminus at South Fort Collins Transit Center • I-25 use in lieu of WCR 7
Operating Plan	• Adapt operating plan to RTD connection • Initial RTD peak freq.= 20 minutes → 40 min Com. Rail • High-level platforms required • FRA-compliant diesel multiple units (DMU) • Passing track locations = "triple track"
Cost Estimate	• $690 Million = EIS estimate, in 2009$ • $820 Million = EIS adjusted for inflation to 2014$ • $1.2 Billion = current working estimate in 2014$ reflecting scope changes above to ROW & Operations

Questions/Comments

COLORADO
Department of Transportation

PARSONS BRINCKERHOFF

North I-25 Commuter Rail Update



BNSF Commuter/Passenger Principles

- BNSF will consider accommodating passenger trains speeds up to but not beyond 90 MPH.
- Passenger equipment and rolling stock used has to be FRA compliant.
- Any commuter operation cannot degrade BNSF's freight service, negatively affect BNSF's freight customers or BNSF's ability to provide them with service.
- BNSF will not incur any liability for commuter operations that it would not have but for those operations.
- Capital investments necessary for commuter service are the responsibility of the public.
- BNSF will limit commuter operations to the commuter schedules initially agreed upon and for which the capital improvement plan has been designed.
  - Future expansions will have to undergo the same analysis and provide any required capital improvements before schedules can be changed, services or stations added.
- Investments made for commuter projects must not result in BNSF incurring a higher tax burden.
  - Property improvements should not become part of BNSF's tax base.
  - Materials used should be exempt from all sales and use taxes, etc., or BNSF must be made whole for any increased tax burden.

BNSF Commuter/Passenger Principles

- Studies of how commuter service might be provided must take into account not only the current freight levels, but projected freight traffic growth.
- Studies must reflect BNSF's actual operating conditions and cost structures.
  - Construction cost estimates must reflect BNSF labor costs.
  - Passenger schedules cannot assume that BNSF will not operate any freight trains during peak commuter periods.
- BNSF must retain operating control of rail facilities used for commuter services.
  - All dispatching, maintenance and construction must be done under the control of BNSF.
  - Passenger stations, parking lots and other non-rail facilities may be publicly owned and operated.
- BNSF must be compensated for any and all costs incurred in providing commuter service and make a reasonable return for providing the service.
- Improvements must include grade crossing protection and inter-track fencing as required to minimize the risk of accidents due to liability and service interruption concerns.

UTA FrontRunner

FRONTRUNNER SOUTH (UTAH)

Segment:	Salt Lake City, UT to Provo, UT
Length of Line:	44.4 route miles / 55.5 track miles
Date in Service:	2012
Type of Rolling Stock:	Locomotives (7), freight switcher, cab cars (10), coaches (8), rehabilitated coaches (10)
Description:	* One track added to parallel Union Pacific track * Approximately 10 miles of double track constructed where right-of-way width allowed * Shares 2-mile section with freight operator * Implementing Positive Train Control (most was installed with construction project) * Cost/mile high due to challenging areas of construction, limited access to construction sites, crossings and neighborhood construction
Total Cost of Project (Adjusted to 2014):	$1.07 Billion
Cost of Stations (Adjusted) (8 stations with parking):	$23.4 Million
Cost of Maintenance Facility (Adjusted):	$1.4 Million
Cost of Right-of-way (Adjusted):	$92.2 Million
Cost of Rolling Stock (Adjusted):	$88.7 Million
Cost per Route Mile (Adjusted):	$24.1 Million
Cost per Track Mile (Adjusted):	$19.3 Million
* Cost of Core Project/Route Mi. (Adj.)	$19.5 Million
* Cost of Core Project/Track Mi. (Adj.)	$15.6 Million

* Core project excludes stations, maintenance facility, ROW and vehicles

Appendix C

Conceptual Plan and Cross Section Drawings of North I-25 EIS Commuter Rail Alignment

HIGHWAY – RAILROAD GRADE CROSSINGS & SEPARATIONS

LOCATION	EXISTING	PROPOSED
BNSF – Trilby Road – SE Larimer Co. CR 34	Gates	4-quadrant gates with medians
BNSF – West 57th St. – SE Larimer Co. CR 28	Gates	4-quadrant gates with medians
BNSF – West 37th Street – Loveland	Gates	4-quadrant gates with medians
BNSF – West 29th Street – Loveland	Gates	4-quadrant gates with medians
BNSF – Garfield Street – Loveland	Gates	4-quadrant gates with medians
BNSF – US 34 – Loveland	Grade separation	Grade separation (existing)
BNSF – 10th Street – Loveland	Gates	4-quadrant gates with medians
BNSF – 7th Street – Loveland	Gates	4-quadrant gates with medians
BNSF – 6th Street – Loveland	Gates	4-quadrant gates with medians
BNSF – 4th Street – Loveland	Gates	4-quadrant gates with medians
BNSF – 1st Street – Loveland CR 20	Gates	4-quadrant gates with medians
BNSF – South Railroad Avenue – SE Larimer Co.	Gates	4-quadrant gates with medians
BNSF – 14th Street SW – SE Larimer Co. CR 18	Gates with barrier curbs	4-quadrant gates with medians
BNSF – 28th Street SW / LCR 16 – SE Larimer Co.	Gates	Gates
BNSF – 42nd Street SW – SE Larimer Co.	Gates	Gates
BNSF – US 287 – SE Larimer Co.	Grade separation	Grade separation (existing)
BNSF – Berthoud Road / LCR 10E – Berthoud	Gates	Gates
BNSF – Water Ave / LCR 10 – Berthoud	Gates	Gates
BNSF – Bunyan Avenue – Berthoud	Gates	4-quadrant gates with medians
BNSF – Mountain Avenue/SH 56 – Berthoud	Gates	4-quadrant gates with medians
BNSF – Welch Avenue – Berthoud	Gates	Gates
BNSF – LCR 15a – NE Boulder Co.	Passive	Gates
BNSF – LCR 15a – NE Boulder Co.	Gates	Gates
BNSF – LCR 2E – NE Boulder Co.	Gates	Gates
BNSF – North County Line Rd. – NE Boulder Co.	Passive	Gates
BNSF – Farm Crossing	Passive	Flashers
BNSF – North 115th St. – NE Boulder Co.	Passive	Gates
BNSF – Vermillion Road – NE Boulder Co.	Passive	Gates
BNSF – UTE Highway / SH 66 – Longmont	Gates	4-quadrant gates with medians
BNSF – 21st Avenue – Longmont	Gates	4-quadrant gates with medians
BNSF – 17th Avenue – Longmont	Gates with barrier curbs	4-quadrant gates with medians
BNSF – Mountain View Ave. – Longmont	Passive	4-quadrant gates with medians
BNSF – 9th Avenue – Longmont	Passive	4-quadrant gates with medians
BNSF – Longs Peak Avenue – Longmont	Gates	4-quadrant gates with medians

HIGHWAY – RAILROAD GRADE CROSSINGS & SEPARATIONS

LOCATION	EXISTING	PROPOSED
BNSF – 6th Avenue – Longmont	Passive	Close Xing - per Longmont QZ Plan
BNSF – 5th Avenue – Longmont	Passive	4-quadrant gates with medians
BNSF – 4th Avenue – Longmont	Passive	Close Xing - per Longmont QZ Plan
BNSF – 3rd Avenue – Longmont	Gates	4-quadrant with medians
BNSF – Martin Street – Longmont	Passive	4-quadrant with medians
GWR – Sugar Mill Road – Longmont	Passive	Gates
GWR – Sugar Mill Road – Longmont	Passive	Gates
SH 119 – Longmont	N/A	Grade separation
Golf Course Road	N/A	Flashers
East County Line Road – SW Weld Co.	N/A	4-quadrant gates with medians
SH 119 – SW Weld Co.	N/A	Grade separation
Fairview Street/Sandstone Dr. – SW Weld Co.	N/A	Gates
WCR 3 – SW Weld Co. 3 ½	N/A	Gates
WCR 5 – SW Weld Co.	N/A	Gates
WCR 7	N/A	Gates
Bella Rosa Dr.	N/A	Grade separation
I-25	N/A	Grade separation
SH 52 – SW Weld Co.	N/A	Grade separation
SW Weld Co. CR 10	N/A	Grade separation
I-25 East Frontage Road – SW Weld Co.	N/A	Grade Sep. (Frontage Rd. Over)
RTD – Summit Blvd. / WCR 8 – SW Weld Co.	Passive	Gates
RTD – York Street / WCR 11 – SW Weld Co.	Passive	Gates
RTD – WCR 6 – SW Weld Co.	Passive	Gates
RTD – East 168th Avenue – SW Weld Co.	Passive	Gates

N/A=Not Applicable

Revised February 5, 2015

Appendix D

BNSF Commuter Rail Passenger Principles

E-BART, NORTHERN CALIFORNIA

Commuter Service:	Northern California e-Bart
Primary Connections:	Pittsburg, CA to Antioch, CA
System Operator:	Bay Area Rapid Transit
Freight Operator:	None
Mainline Tracks:	Double track within Freeway 4 median
Date Service Initiated:	Currently under construction, service start in 2018
Route Miles:	10 Miles
Track Miles:	20 Miles
Number of Stations:	3 (one end of line and two platform stations)
Number of Maintenance Facilities:	1
Rolling Stock:	Eight (8) Diesel Multiple Unit Vehicles
Construction Contractor(s):	Stacy and Witbeck, Inc.
Type of Signalization:	Automated Train Protection (ATP) with speed control. There are no traffic crossings on line due to its location within the roadway median.

Capital Cost Data (Project was bid in 2014- Prices are in 2014 dollars, no adjustment necessary):

- ***Total Cost of Project - $515 Million***
- ***Overall Cost Per Route Mile - $ 51.5 Million/Mi.***
- ***Overall Cost Per Track Mile - $ 25.8 Million/Mi.***
- ***Cost per Route Mile w/o ROW, Vehicles, Stations and Maintenance Fac. (Core Cost) - $34.1 Million/Mi.***
- ***Core Cost/Track Mi. - $17.05 Million***
- ***Cost of Stations – $46.0 Million (Platform being constructed by CALTRANS)***
- ***Cost of Maintenance Facilities – $28.3 Million***
- ***Cost of Right-of-way - $ 32.0 Million (Estimated)***
- ***Cost of Rolling Stock –Approx. $68.2 Million (8 DMU vehicles with spare parts)***
- ***Cost of Positive Train Control (PTC)- $25 Million (Included in core cost)***

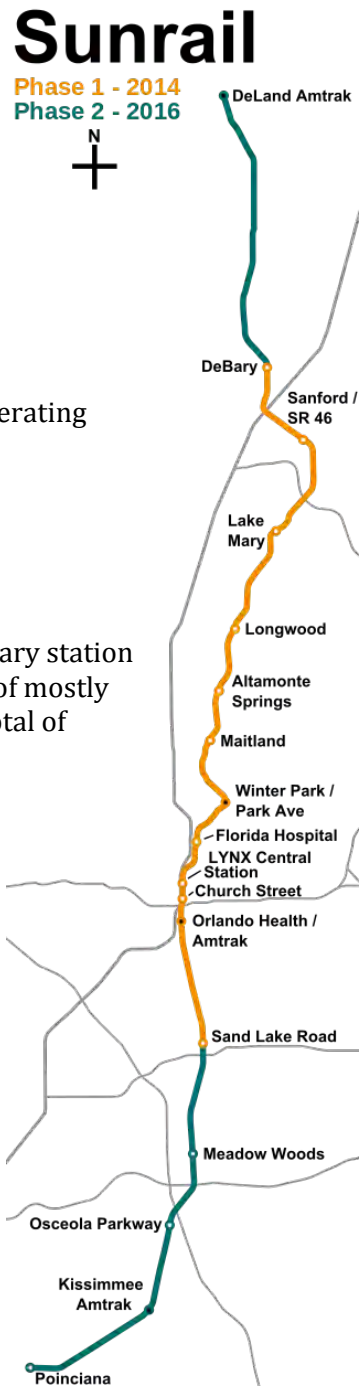
Commuter Service:

- ***Monday-Friday: Anticipated 15 min. headways peak period, 20 min. non-peak (18-20 hours/day)***
- ***Saturday-Anticipated 20 min. headways***
- ***Sunday- Anticipated 20 min. headways***

Notes:

- Expansion ties into BART system but will be operated under separate bargaining agreements for operation
- Line is being constructed with Freeway widening project
- CALTRANS is constructing station platforms within its construction contract.
- ROW for double track is 40' with 60' at stations.
- There are no crossings on this line. Line is within separate ROW.

SUNRAIL – ORLANDO, FL



Commuter Service:	SunRail– Florida Department of Transportation (FDOT)
Primary Connections:	DeBary to Orlando Sand Lake Road (Phase I – Initial Operating Service (IOS))
System Operator:	Bombardier Technology
Freight Operator:	CSXT (Tracks owned by FDOT)
Mainline Tracks:	The IOS is 32 miles long with 12 stations between DeBary station and the Orlando Sand Lake Road station, and consists of mostly double track expect for approximately two (2) miles total of existing single track that will remain single track.
Date Service Initiated:	2014
Route Miles:	32 Miles
Track Miles:	57.2 Miles (less the track paid for by CSXT not included in opening day cost estimates)
Number of Stations:	12
Number of Maintenance Facilities:	1 – New Operations Center & Vehicle Storage 1-Vehicle Storage & Maintenance Facility
Rolling Stock:	Seven (7) diesel locomotives and twenty (20) bi-level Bombardier coaches

***Construction* Contractor(s):** RailWorks Track Systems, Inc. (ROW & TrackImprovements), Archer Western Contractors, Ltd. (Stations)

Signalization:

Capital Cost Data (Adjusted for time using a 3.5% escalator consistent with the SunRail Capital Cost Methodology Report March 2009)

- ***Original Cost of Project - $354.7M (2010 dollars)***
- ***Overall Cost of Project (Adjusted to 2014 dollars) - $407.1 Million***
- ***Overall Cost Per Route Mile (Adjusted 2014 dollars) - $12.7 Million/Mi.***
- ***Overall Cost Per Track Mile (Adjusted to 2014 dollars) - $7.1 Million/Mi.***
- ***Overall Cost Per Route Mi. w/o Stations, Facility, ROW and Vehicles (Core Cost) - $8.3 Million***
- ***Overall Core Cost Per Track Mi. - $4.3 Million***
- ***Cost of Stations (Adjusted to 2014 dollars)- $ 17.0 Million***
- ***Cost of Maintenance Facilities (Adjusted to 2014 dollars)- $11.7 Million***
- ***Cost of Right-of-way (Adjusted only to 2014 dollars)- $ 44.2 Million***
- ***Cost of Rolling Stock (Adjusted to 2014 dollars)-$70.0 Million***

Commuter Service:

- ***Monday-Friday: Typically 6-7 min. headways peak period, 30min. non-peak***
- ***Weekends-No service***

RAIL RUNNER EXPRESS (NEW MEXICO)

Commuter Service:	Rio Metro Regional Transit District
Primary Connections:	Belen, NM to Santa Fe, NM
System Operator:	Herzog Transit Services
Freight Operator:	Operators vary and include BNSF, SF Southern
Mainline Tracks:	Single track with limited double track for passing
Date Service Initiated:	Belen to Albuquerque – 2006, to Santa Fe - 2008
Route Miles:	97 Mi.
Track Miles:	18 mi. of new track plus reconstruction of sections of existing track
Number of Stations:	15 (plus 2 existing stations)
Number of Maintenance Facilities:	No maintenance facilities in project
Rolling Stock:	Nine (9) locomotives with thirteen (13) bi-level coaches and nine (9) cab cars
Construction Contractor(s):	Unknown
Type of Signalization:	Type of signalization varies throughout the rail corridor

Capital Cost Data: Estimated Costs based upon ENR escalation from 2006-2014 (3.4% ave./year)

- ***Original Overall Cost of Project- $493M (2006 Dollars)***
- ***Overall Cost of Project (2014 Estimated Dollars)- $633 M***
- ***Overall Cost Per Route Mile (2014 Estimated Dollars)- $6.5 M***
- ***Overall Cost Per Track Mile (2014 Estimated Dollars)- $6.5 M***
- ***Cost w/o stations, maintenance facility, ROW and vehicles (Core Cost) Per Route Mile (2014) - $4.8 Million***
- ***Core Cost Per Track Mile (2014) - $4.8 Million***
- ***Cost of Stations (2014 Estimated Dollars)-Unknown***

- ***Cost of Maintenance Facilities (2014 Estimated Dollars)- $0***
- ***Cost of Right-of-way (2014 Estimated Dollars)- $91.2 M***
- ***Cost of Rolling Stock (2014 Estimated Dollars)- $81.3 M***
- ***Cost of Positive Train Control (PTC)- No plans to implement PTC due to cost/benefit. Estimated cost to design PTC is approximately $10M and to construct and implement approximately $40M-$50M.***

Commuter Service:

- ***Monday-Friday: 12 northbound trains, 11southbound trains***
- ***Saturday: Six (6) northbound and southbound combined***
- ***Sunday: Four (4) northbound and southbound combined***

Notes: System began operation in Albuquerque in 2006 and expanded service to Santa Fe in 2008. All construction was performed within existing I-25 right-of-way and BNSF property. No federal funds were used in the construction of the project.

TRIMET

WES Commuter Rail

WESTSIDE EXPRESS SERVICE (PORTLAND, OR)

Commuter Service:	Westside Express Service Commuter Rail (Portland, OR)
Primary Connections:	Wilsonville, OR to Beaverton, OR
System Operator:	TriMet
Freight Operator:	Portland and Western (P&W)
Mainline Tracks:	One shared track with P&W with passing tracks
Date of Service:	2006
Route Miles:	15.3 mi.
Track Miles:	20.0 mi.
Number of Stations:	Five (5) with parking at all stations
Number of Maintenance Facilities:	One (1) facility constructed with with six (6) mechanics
Rolling Stock: spare DMU	Three (3) Diesel Multiple Units (DMU)with trailers plus one (1) and trailer
Construction Contractor(s):	Stacy and Witbeck, Inc.
Type of Signalization:	Automatic Train Control (ATC) system utilizing a fixed block system. System conveys train routes through colored LSG wayside signals. Cab signals are also fed through rails and received and interpreted by train (either passenger or freight). Centralized Traffic Control is also used to control and monitor control points along the corridor by a central dispatch center. Communication is from wayside control points are hard-wired to dispatch with a redundant wireless system in the event the connection fails.

Capital Cost Data Adjusted for inflation using ENR National Indices:

- ***Original Cost of Project (2006)- $161.2 Million***
- ***Overall Cost of Project (Adjusted to 2014 Dollars)- $207 Million***
- ***Overall Cost Per Route Mile (2014 Estimated Dollars)- $13.5 Million***
- ***Overall Cost Per Track Mile (2014 Estimated Dollars)- $10.4 Million***
- ***Cost Per Route Mile w/o Stations, Maintenance Facility, ROW and Rolling Stock - $9.5 Million/Mi.***
- ***Cost Per Track Mile w/o Stations, Maintenance Facility, ROW and Rolling Stock - $9.4 Million/Mi.***
- ***Cost of Stations (2014 Estimated Dollars)- $19.0 Million***
- ***Cost of Maintenance Facilities (2014 Estimated Dollars)- $5.3 Million***
- ***Cost of Right-of-way (2014 Estimated Dollars)- $12.1 Million***
- ***Cost of Rolling Stock (2014 Estimated Dollars)- $30.3 Million***
- ***Cost of Positive Train Control (PTC) (2014 Estimated Dollars) (Currently being implemented)- Budget has been set at $10 Million***

Commuter Service:

- ***Monday-Friday: 30 minute headways during peak hours. Peak hours are from 5:00 am-9:00 am and 3:00 pm-7:00 pm***
- ***Saturday – No service***
- ***Sunday – No service***

Notes:

Track is shared temporally with P&W. P&W uses line during non-peak periods when commuter line is not operating. DMUs seat 74 passengers and have standing room space for 139 passengers. Commuter line received federal funding for 50% of cost. The 150 db horns were replaced shortly after initial operation with 75 db horns. TriMet requested waiver to the 15-second sounding at intersections and replace them with bell sound but the request was rejected by the FRA.

A Centralized Traffic Control System (CTC) and Automatic Train Control were (ATC) were first installed to control freight and commuter train traffic. An upgrade to Positive Train Control (PTC) is being implemented at an approximate cost of $10 M. Some of the CTC infrastructure is being re-used. The PTC will require additional wayside, central office, onboard and communications upgrade (both hardware and software). The upgrade received FRA "type" approval in 2013 and is scheduled to be installed to meet the FRA deadline of 12/31/15.

A-TRAIN – DENTON COUNTY, TEXAS

Commuter Service:	A-Train – Denton County, TX
Primary Connections:	Denton, TX to Trinity Hills Station (Dallas Area Rapid Transit Line)
System Operator:	Denton County Transportation Authority (DCTA)
Freight Operator:	Dallas Garland Northern, Short Line Operator
Mainline Tracks:	Single Track with Six (6) Passing Sidings
Date Service Initiated:	2011
Route Miles:	21.3 Miles
Track Miles:	25.6 Miles
Number of Stations:	5 (Plus One Shared station with DART)
Number of Maintenance Facilities:	1
Rolling Stock:	Eleven (11) Diesel Multiple Unit cars
Construction Contractor(s):	Herzog/Archer Western
Type of Signalization:	Centralized Train Control is being used. Central dispatchers can control signals remotely and can monitor blocks and line. No cameras are being used. Freight trains are allowed to enter track

corridor once commuter trains are in yard. Typical hours of operation for short line operator are 11:00 pm to 3:00 am four (4) days per week.

Capital Cost Data (Adjusted for time inflation from 2010 using ENR National Indices):

- ***Original Cost of Project - $305.0M***
- ***Overall Cost of Project (Adjusted to 2014 dollars) - $340 Million***
- ***Overall Cost Per Route Mile (Adjusted 2014 dollars)- $16.0 Million/Mi.***
- ***Overall Cost Per Track Mile (Adjusted to 2014 dollars)- $13.3 Million/Mi.***
- ***Cost Per Route Mile w/o ROW, Vehicles, Stations and Maintenance Facility - $8.4 Million/Mi.***
- ***Cost Per Track Mile w/o ROW, Vehicles, Stations and Maintenance Facility - $7.0 Million/Mi.***
- ***Cost of Stations (Adjusted to 2014 dollars)- $ 31.2 Million***
- ***Cost of Maintenance Facilities (Adjusted to 2014 dollars)- $22.3 Million***
- ***Cost of Right-of-way (Adjusted only to 2014 dollars)- $ 19.0 Million***
- ***Cost of Rolling Stock (Adjusted to 2014 dollars)-$ 88.1 Million***
- ***Cost of Positive Train Control (PTC)- Agency is currently in procurement stage to implement PTC.***

Commuter Service:

- ***Monday-Friday: Typically 15-20 min. headways peak period, 30-50 min. non-peak***
- ***Saturday-Typically 2 hour headways***
- ***Sunday- No service***

Notes: No federal funding was used on the project. This line acts as an extension of the Dallas Area Rapid Transit (DART) Green Line. Short line operator uses line at night and on weekends when A-Train is not operating (per agreement). The five (5) stations consist of one station with parking facility and four kiss-n-rides. A lease agreement was negotiated with DART for use of right-of-way. The agreement consisted of a one-time up-front payment of $15M and twenty (20) annual payments of $100K.

FRONTRUNNER SOUTH (UTAH)

Commuter Service:	FrontRunner South (Salt Lake City, UT to Provo, UT)
Primary Connections:	Salt Lake City, UT to Provo, UT
System Operator:	Utah Transit Authority
Freight Operator:	Union Pacific Railroad
Mainline Tracks:	Single track paralleling Union Pacific freight track with passing track at several locations. One (1) 2-mi. segment of line is shared by the UTA and Union Pacific RR
Date Service Initiated:	2012
Route Miles:	44.4 Mi.
Track Miles:	55.5 Mi.
Number of Stations:	8 stations with park-n-ride lots
Number of Maintenance Facilities:	1
Rolling Stock:	Seven (7) locomotives plus (1) freight switcher, (10) cab cars, (8) coaches, (10) Comet coaches (re-habilitated)
Construction Contractor(s):	Stacy Witbeck/Herzog
Type of Signalization:	

Capital Cost Data:

- ***Original Cost of Project- $927M***
- ***CMGC GMP for portion of work reached in 2008, majority in 2009 and portion in 2010. 2009 used as base year for inflation factor***

- ***Overall Cost of Project (2014 Estimated Dollars)- $1.07 Billion***
- ***Overall Cost Per Route Mile (2014 Estimated Dollars)- $24.1 Million***
- ***Overall Cost Per Track Mile (2014 Estimated Dollars)- $19.3 Million***
- ***Overall Cost Per Route Mi. w/o stations, facility, ROW and vehicles (Core Cost) - $19.5 Million***
- ***Overall Core Cost Per Track Mi. - $15.6 Million***
- ***Cost of Stations (2014 Estimated Dollars)- $23.4 Million***
- ***Cost of Maintenance Facilities (2014 Estimated Dollars)- $1.4 Million***
- ***Cost of Right-of-way (2014 Estimated Dollars)- $92.2 Million***
- ***Cost of Rolling Stock (2014 Estimated Dollars)- $88.7 Million***
- ***Cost of Positive Train Control (PTC)- $17M (Currently being implemented)***

Commuter Service:

- ***Monday-Friday:*** *(25) round trips per day. 30-minute headways in peak hours, 60-minute headways in non-peak hours*
- ***Saturday:*** *Every 90 minutes from 6:00 am to 1:30 am following day*
- ***Sunday:*** *No service on Sundays*

Notes: Project added one track adjacent to Union Pacific RR. Passing tracks are located at stations. An 11-mile stretch is double tracked. Line went through neighborhoods and significant number of parcels (approximately 800) were acquired. Freight sidings are accessed at night when commuter train is not operating. Entire length of FrontRunner has been approved as a "Quiet Zone". City and town jurisdictions were required to apply for the Quite Zone status and install safety features. Financial assistance was provided to upgrade crossings with gates, flashers, pedestrian safety features, and medians to prevent vehicles from crossing between gates. There are approximately 40 existing crossings. Project was procured through CMGC. Contractor had positive relationship with UPRR which allowed for a smoother process. Approximately 800 cameras have been installed on trains, stations and critical areas. Operations Center is manned 24/7 and has access to cameras. Conversion to Positive Train Control is underway with speed control and block control completed. Grade crossing and worker protection still in process. The Portland TriMet system was used as an example for their PTC procurement. A 20' wide corridor within the UPRR corridor (100' total) was acquired for a length of 175 miles. The total purchase was $185 Million and also included trackage rights and a maintenance shop.

SEATTLE SOUNDER

Commuter Service:	Seattle Sounder Transit (Seattle, WA)
Primary Connections:	M Street to Lakewood/Tacoma
System Operator:	BNSF for Sound Transit/Central Puget Sound Regional Transit Auth.
Freight Operator:	Tacoma Rail (Use is approx. 3-4 trips per week, temporal separation)
Mainline Tracks:	1 (Trains run south to north in am and reverse in pm)
Date Service Initiated:	2012
Route Miles:	10.3 Miles
Track Miles:	10.3 Miles
Number of Stations:	2
Number of Maintenance Facilities:	0
Rolling Stock:	Six (6) locomotives and twenty-four (24) coaches
Construction Contractor(s):	Railworks Track and Systems
Type of Signalization:	Centralized traffic control signaling

Capital Cost Data (Adjusted for time inflation from 2009 using ENR National Indices):

- ***Original Cost of Project - $125.3Million***
- ***Overall Cost of Project (Adjusted to 2014 dollars) - $ 141.6 Million***
- ***Overall Cost Per Route Mile (Adjusted 2014 dollars)- $ 13.7 Million/Mi.***
- ***Overall Cost Per Track Mile (Adjusted to 2014 dollars)- $ 13.7 Million/Mi.***

- ***Overall Route Cost w/o Stations, Facility, ROW and Vehicles (Core Cost) - $4.1 Million/Mi.***
- ***Overall Core Cost/Track Mi. - $4.1 Million***
- ***Cost of Stations (Adjusted to 2014 dollars)- $ 29.4 Million***
- ***Cost of Maintenance Facilities (Adjusted to 2014 dollars)- $ 0***
- ***Cost of Right-of-way (Adjusted only to 2014 dollars)- Unknown***
- ***Cost of Rolling Stock (Adjusted to 2014 dollars)- $71.2 Million***
- ***Cost of Positive Train Control (PTC)- Not applicable***

Commuter Service:

- ***Monday-Friday: Regularly in morning and afternoon peak periods***
- ***Saturday-Occasionally to serve major events***
- ***Sunday- Occasionally to serve major events***

Notes: South Line began service in 2000. North Line began service in 2003. This line is an extension of the South Line and was completed in 2012. Seattle Sounder completed negotiations with BNSF that allows commuter access to the south corridor and allows four (4) additional trips. Agreement cost was $185 M. Currently 6 trains (locomotives with 4 cars each) run one direction in am peak period and other other direction in the pm peak. Installation of PTC is underway. Near future project (2015-2016) will add an additional track in this section and extend a single track to the south.

Appendix E

RTD’s North Metro Rail (Summary Information)

RTD FasTracks
North Metro Rail Line

2015 Fact Sheet

NORTH METRO RAIL LINE AT A GLANCE

- The North Metro Rail Line is part of RTD's 2004 voter-approved FasTracks plan to expand transit across the Denver metro region.
- The 18.5-mile electric commuter rail line will connect Union Station with Commerce City, Northglenn, Thornton and North Adams County.
- When completed, the line will feature eight stations: National Western Stock Show, 72nd, 88th, 104th, 112th, 124th•Eastlake, 144th and 162nd•State Hwy 7.
- Design and construction of the corridor from Union Station to 124th Avenue is underway; the remainder will be built as funds become available.

PROJECT OVERVIEW

- 2001: RTD completed an investment study to evaluate north I-25 transit from Denver to Brighton.
- 2005: RTD conducted a scoping study to build on previous analyses of the corridor.
- 2006: RTD began an Environmental Impact Statement (EIS) process to analyze transit options for the corridor. The EIS built on previous transit alternative studies, possible adverse implementation impacts and subsequent mitigation.
- 2009: RTD purchased most of the North Metro Rail right-of-way from Union Pacific Railroad for $119 million.
- 2011: RTD issued a final EIS, identifying community benefits and possible impacts of a new transit service in the area; the team received a Federal Transit Administration Record of Decision.
- 2012: RTD committed funding to build the project's first phase from Union Station to the National Western Stock Show Station.
- 2013: RTD received an unsolicited proposal to build the line, opened a competitive bidding process, and later awarded a design-build contract to Regional Rail Partners (RRP) to complete the line to 124th•Eastlake, with options to extend it as funds become available.
- 2014: North Metro Rail Line broke ground in March; design of the project reached 60 percent completion in September; and North Metro received rail delivery and completed tie-in work at Union Station in November.

NORTH METRO RAIL LINE FAST FACTS

- Length: 18.5 miles, 12.5 miles under construction
- Vehicle: Electric commuter rail
- Stations: 8 total, 6 under construction
- Parking: 3,850 total spaces, 2,520 under construction
- Service Frequency: 20 min (peak) / 30 min (off-peak)

For more information or to request a presentation, call 303.299.2895

One region. One mission.

Updated 12/1/2014

Regional Transportation District
303.299.2000 | rtd-denver.com

Appendix F
RTD Loading Standards

THE INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION OF UNDERGROUND AND OTHER UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL-INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING ALL DETERMINATIONS AS TO THE TYPE AND LOCATION OF UNDERGROUND AND OTHER UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO.

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or (811)
CALL 3-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

DESIGN DATA

SPECIFICATIONS:
DESIGN IN ACCORDANCE WITH NORTH METRO PROJECT DESIGN BASIS MANUAL

DESIGN METHOD:
LOAD FACTOR DESIGN (SUPERSTRUCTURES AND SUBSTRUCTURES)
SERVICE LOAD DESIGN (FOUNDATIONS)

DEAD LOADS USED IN DESIGN:
200 LB PER FOOT PER TRACK FOR 2 RAILS, 2 GUARDRAILS AND FASTENERS
100 LB PER FOOT PER TRACK FOR FUTURE UTILITIES
25 LB PER FOOT FOR EACH FENCE

LIVE LOADS USED IN DESIGN:
CRT ELECTRICAL MULTIPLE UNIT: 178.44 KIPS AS SHOWN BELOW
PEDESTRIAN LOAD:
SUPERSTRUCTURE DESIGN: 40 PSF (100 PLF MAX)
DECK DESIGN: 85 PSF

LIVE LOAD IMPACT FACTORS:
DECK TRANSVERSE DESIGN: 1.60
GIRDERS AND SUBSTRUCTURE: 1.30

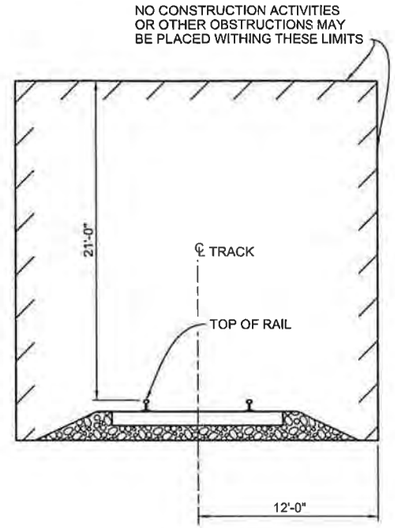
MAXIMUM LIVE LOAD GIRDER DISTRIBUTION FACTORS:
VALUES SHOWN ACCOUNT FOR HORIZONTAL NOSING EFFECTS
POSITIVE MOMENT: 0.XX
SHEAR: 0.XX

LIVE LOAD DEFLECTION CRITERION:
SPAN LENGTH/1000

DESIGN SPEEDS:
SEE TRACK ALIGNMENT DATA SHEETS.

LOAD RATINGS:
RATING IN ACCORDANCE WITH NORTH METRO DESIGN BASIS MANUAL

CRT ELECTRICAL MULTIPLE UNIT	DECK	GIRDERS
NORMAL RATING	1.XX	1.XX
MAXIMUM RATING	1.XX	1.XX

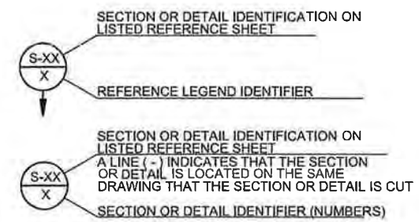


MINIMUM CONSTRUCTION CLEARANCE
AT UPRR TRACKS
(NORMAL TO TRACK)

CONSTRUCTION NOTES:

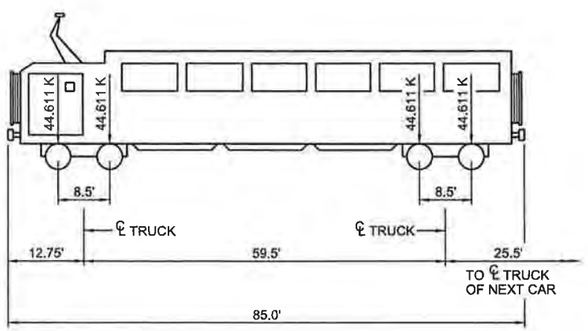
ALL CONSTRUCTION ACTIVITIES AND TEMPORARY WORKS WITHIN THE UPRR OR BNSF RAILROAD RIGHT-OF-WAY SHALL CONFORM TO THE UPRR/BNSF RAILROAD GRADE SEPARATION GUIDELINES AS WELL AS THE RAILROAD GUIDELINES FOR TEMPORARY SHORING, AS APPLICABLE.

UPRR WILL NOT PROVIDE A TEMPORARY HAUL ROAD CONSTRUCTION CROSSING.



STANDARD ABBREVIATIONS

ABUT = ABUTMENT
AH = AHEAD
@ = SPACED AT
BF = BACK FACE
BOT = BOTTOM
BRG = BEARING
CLR = CLEAR
CONT = CONTINUOUS
℄ = CENTERLINE
DIA = DIAMETER
DWG = DRAWING
EF = EACH FACE
EL = ELEVATION
EXP = EXPANSION
FF = FAR FACE
GA = GAUGE
HCL = HORIZONTAL CONTROL LINE
HS = HIGH STRENGTH
JT = JOINT
LIN = LINEAR
MAX = MAXIMUM
MIN = MINIMUM
ML = MAINLINE
NF = NEAR FACE
PCF = POUNDS PER CUBIC FOOT
PGL = PROFILE GRADE LINE
PSF = POUNDS PER SQUARE FOOT
PSI = POUNDS PER SQUARE INCH
REINF = REINFORCING
SPA = SPACES
STA = STATION
TYP = TYPICAL
XX = VALUE OR CALLOUT TO BE DETERMINED PRIOR TO 90% SUBMITAL



LIVE LOADING DIAGRAM
CRT ELECTRICAL MULTIPLE UNIT (EMU)
(ONE CAR SHOWN - 8 CARS OPERATING MAXIMUM)

NO.	REVISIONS	BY	DATE

DESIGNED BY: DB DATE:
DRAWN BY: DEG DATE:
CHECKED BY: PFG DATE:
APPROVED BY: DATE:
HORZ. SCALE:
VERT. SCALE:

RP REGIONAL RAIL PARTNERS
Balfour Beatty / GRAHAM

PARSONS BRINCKERHOFF
555 17TH STREET
SUITE 500
DENVER, CO 80202 (303) 832-9091

RTD FasTracks
North Metro Rail Line
REGIONAL TRANSPORTATION DISTRICT
1600 BLAKE STREET
DENVER, COLORADO 80202
(303) 628-9000

NORTH METRO RAIL LINE

NORTH METRO OVER WASHINGTON ST & PLATTE
GENERAL INFORMATION
(SHEET 2 OF 2)

DWG No. SB-201

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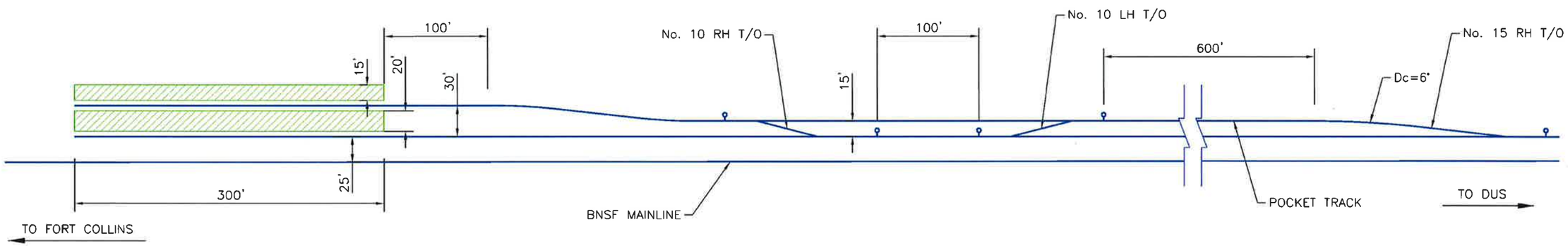
Appendix G

At-grade Rail/highway Crossing Protection and Grade Separated Crossings

FORT COLLINS STC STATION



SCALE – NTS

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LEGEND

- ICS / HSR
- COMMUTER RAIL
- SHARED TRACK
- NEW BRIDGE
- NEW MSE/RETAINING WALLS
- EXISTING TRACK
- PROPOSED ROW
- PROPOSED STATION

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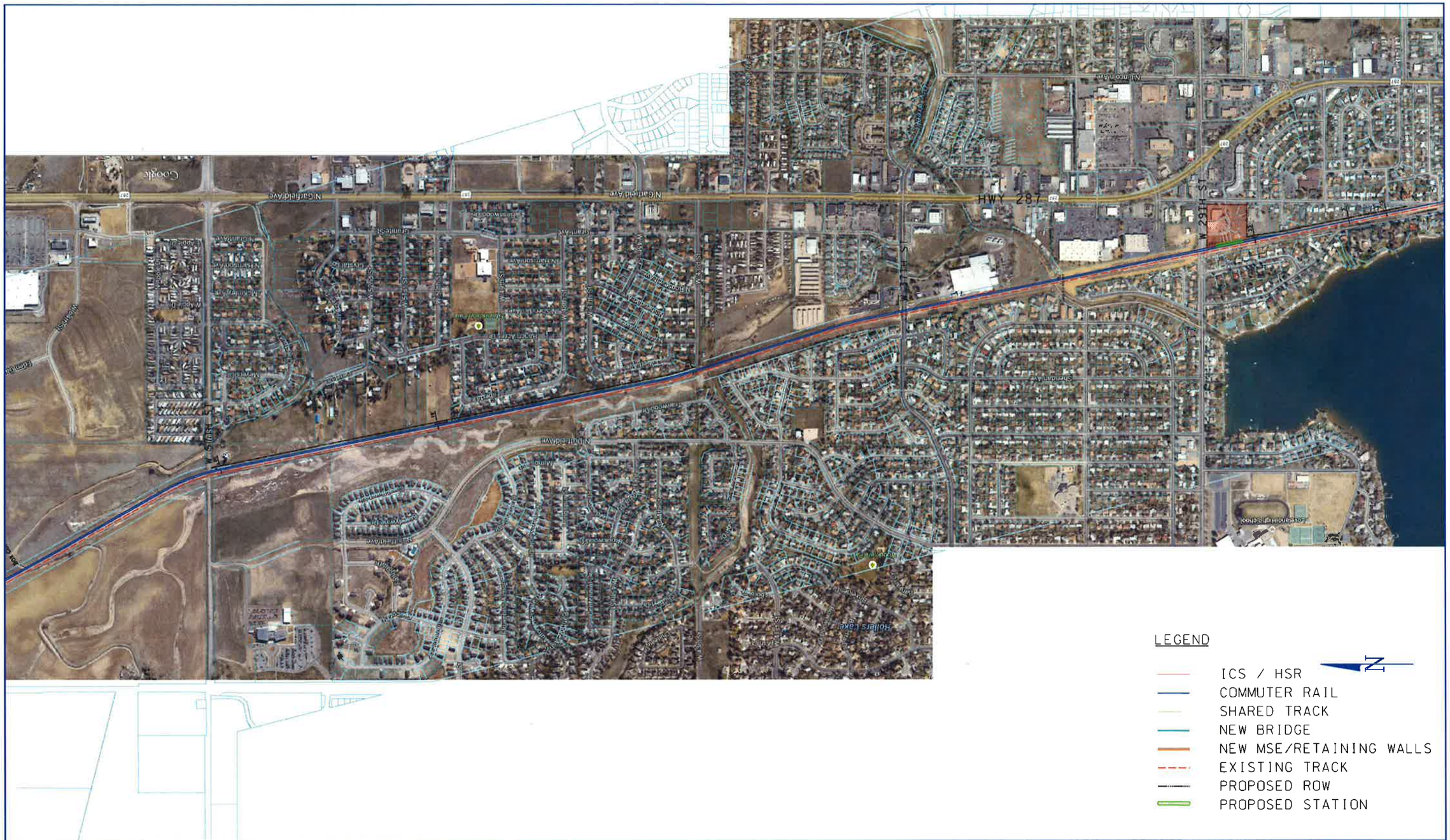

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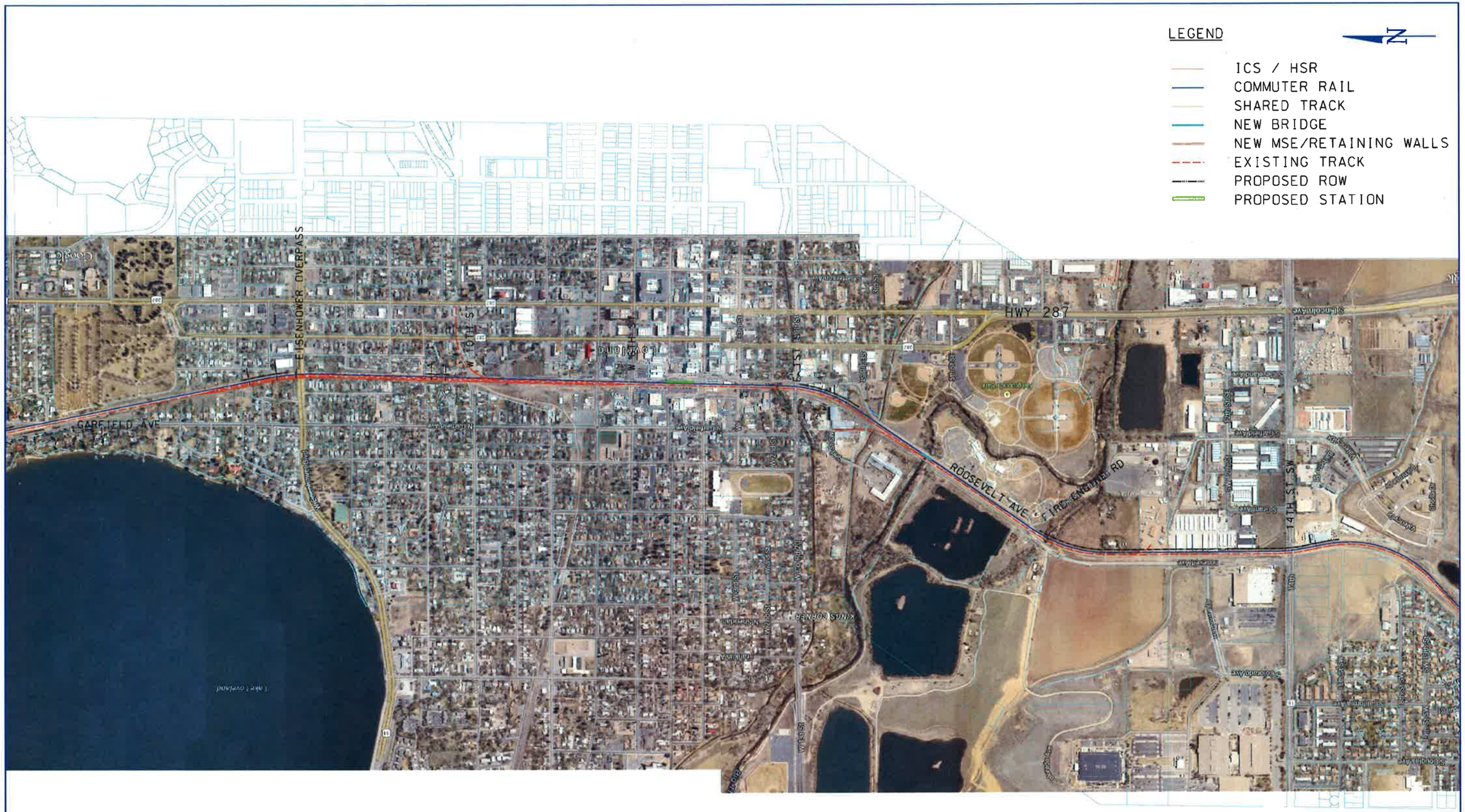

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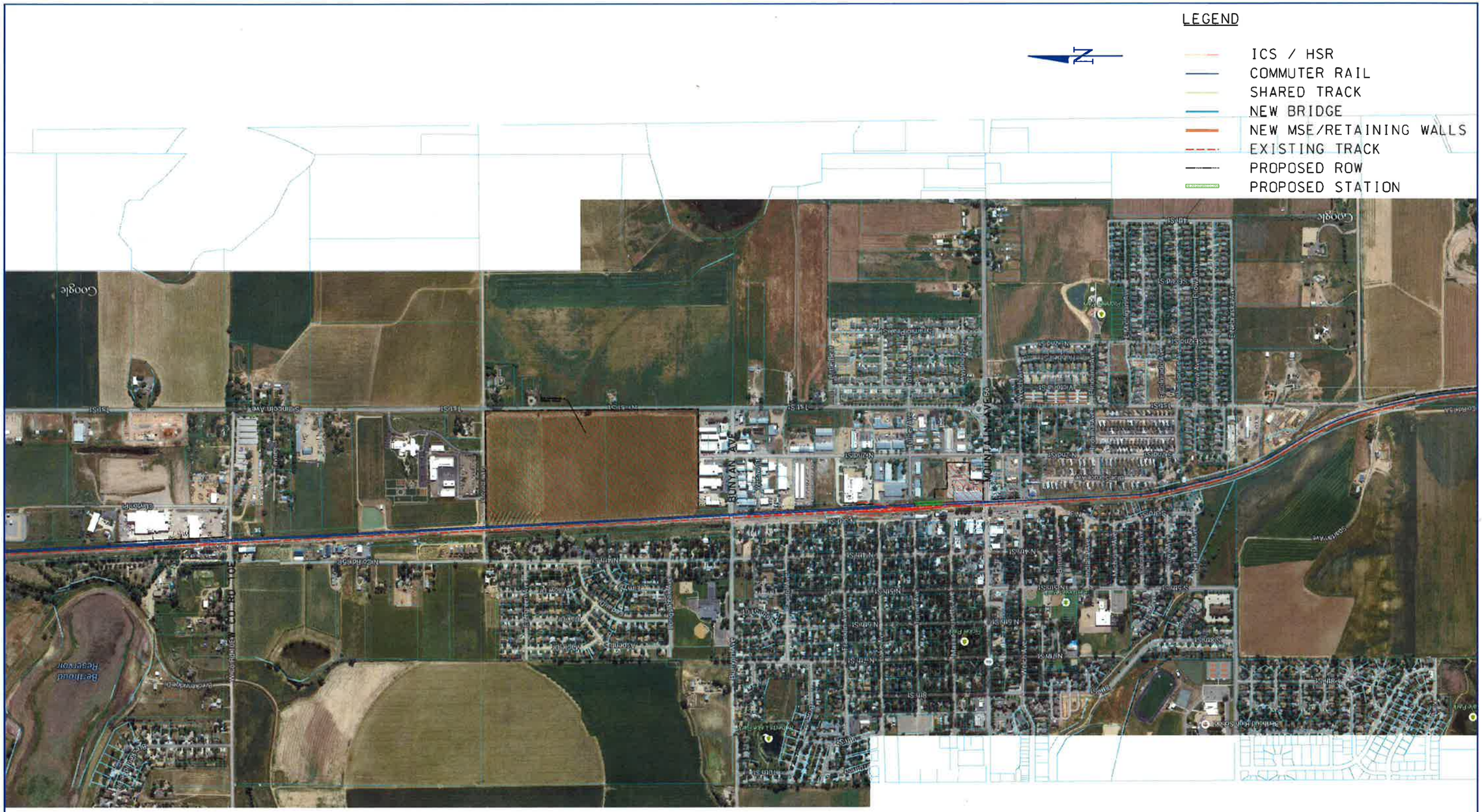

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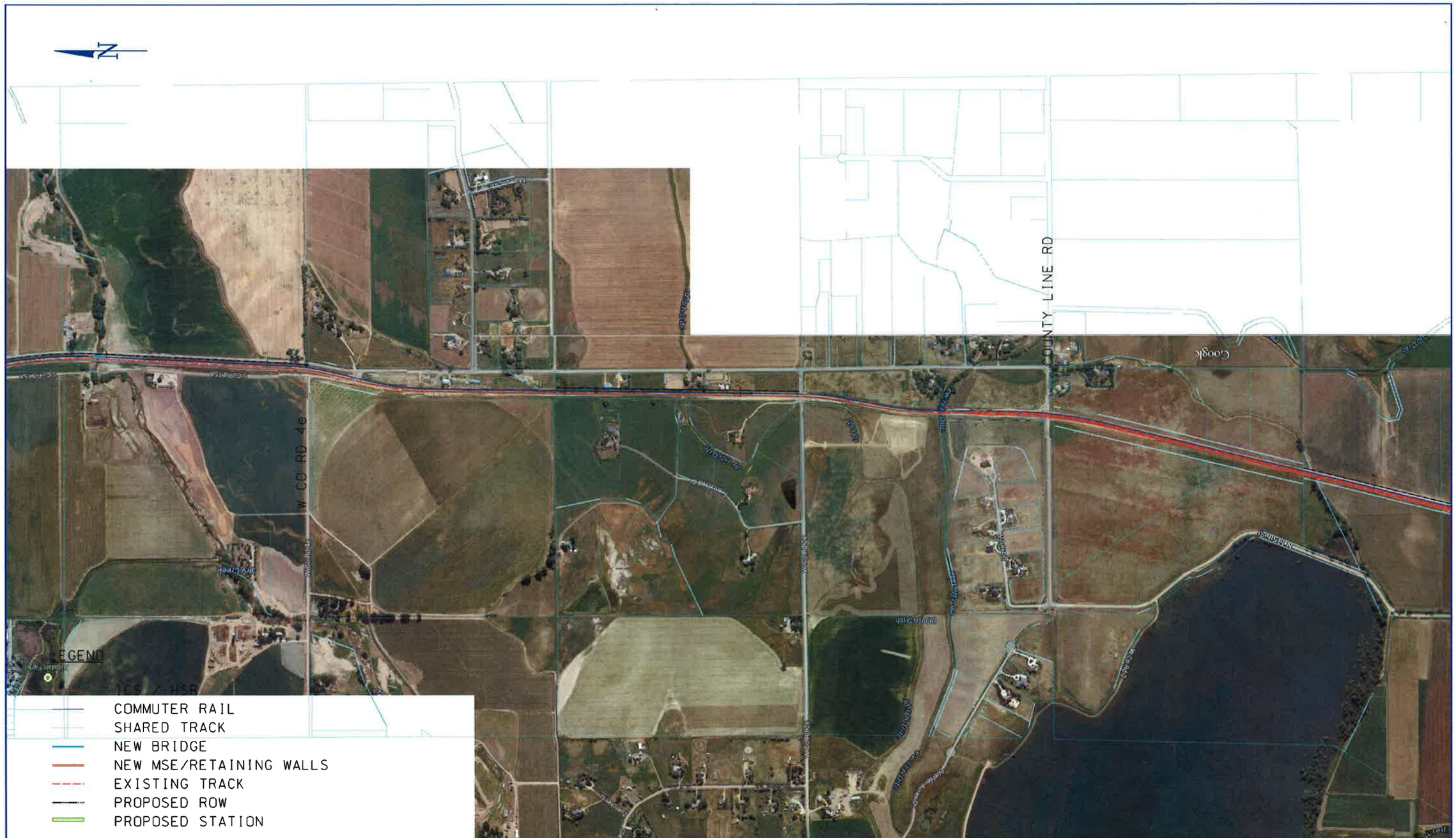

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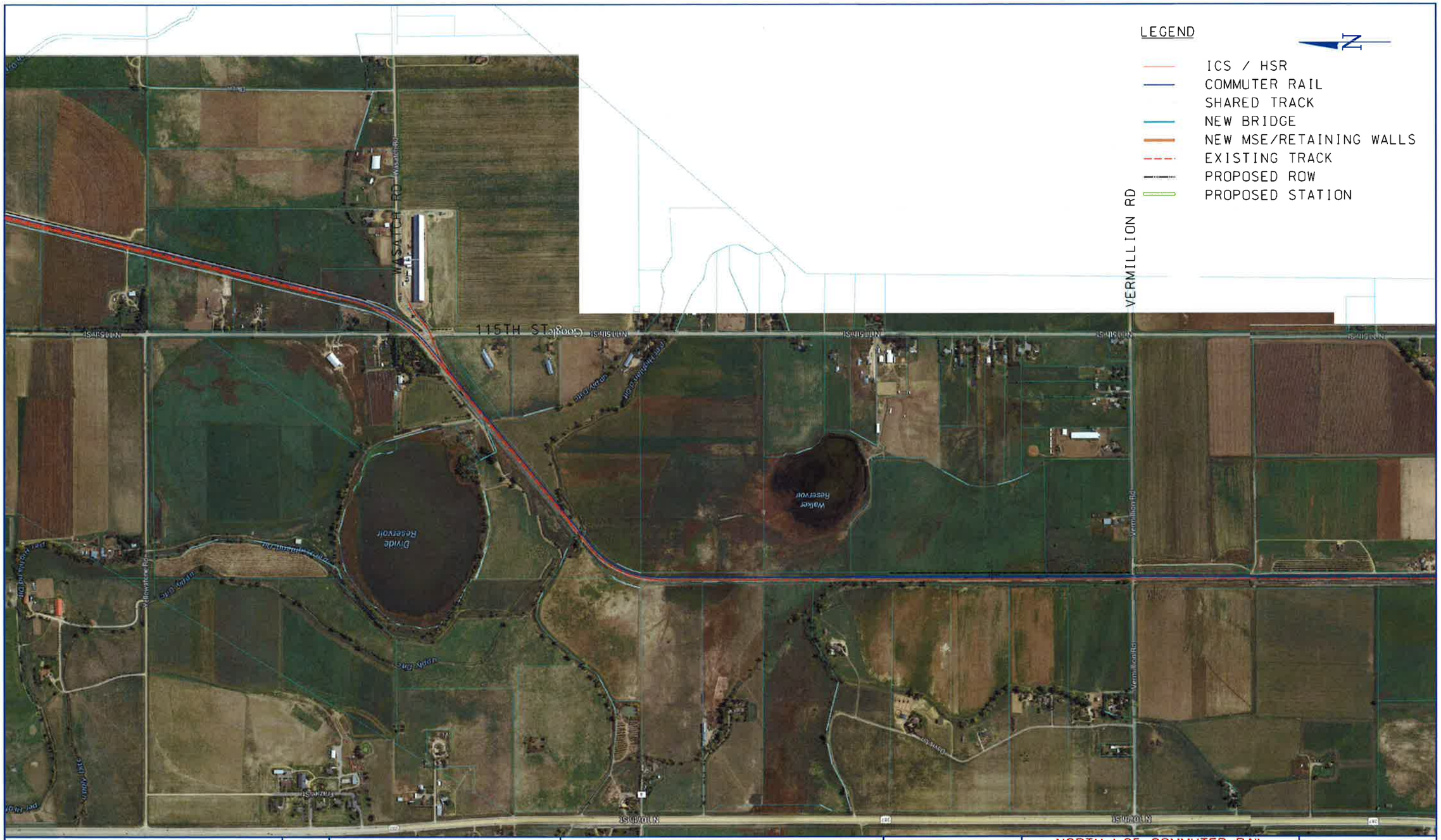

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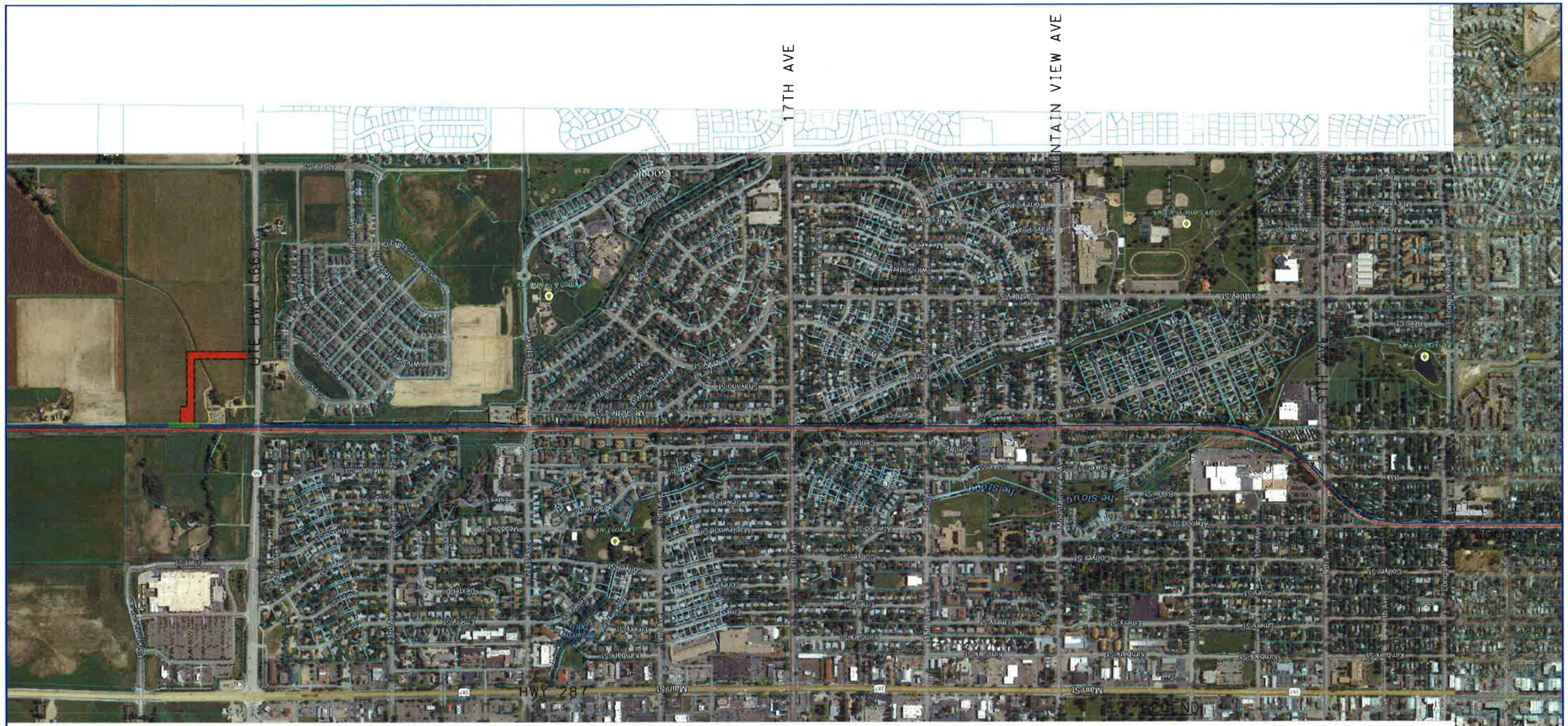

—	ICS / HSR
—	COMMUTER RAIL
	SHARED TRACK
—	NEW BRIDGE
—	NEW MSE/RETAINING WALLS
- - -	EXISTING TRACK
—··—	PROPOSED ROW
▨	PROPOSED STATION

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- COMMUTER RAIL
- SHARED TRACK
- NEW BRIDGE
- NEW MSE/RETAINING WALLS
- EXISTING TRACK
- PROPOSED ROW
- PROPOSED STATION

N

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- SHARED TRACK
- NEW BRIDGE
- NEW MSE/RETAINING WALLS
- EXISTING TRACK
- PROPOSED ROW
- PROPOSED STATION

N

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LEGEND

- ICS / HSR
- COMMUTER RAIL
- SHARED TRACK
- NEW BRIDGE
- NEW MSE/RETAINING WALLS
- EXISTING TRACK
- PROPOSED ROW
- PROPOSED STATION

N

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Unit Information / Unit Leader Initials				Void:	Detailer: B. WARDELL	Sheet Number
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Unit Information / Unit Leader Initials				Revised: FEB 2015	Designer: R. GRAUBERGER / Detailer: B. WARDELL / Structure Numbers	
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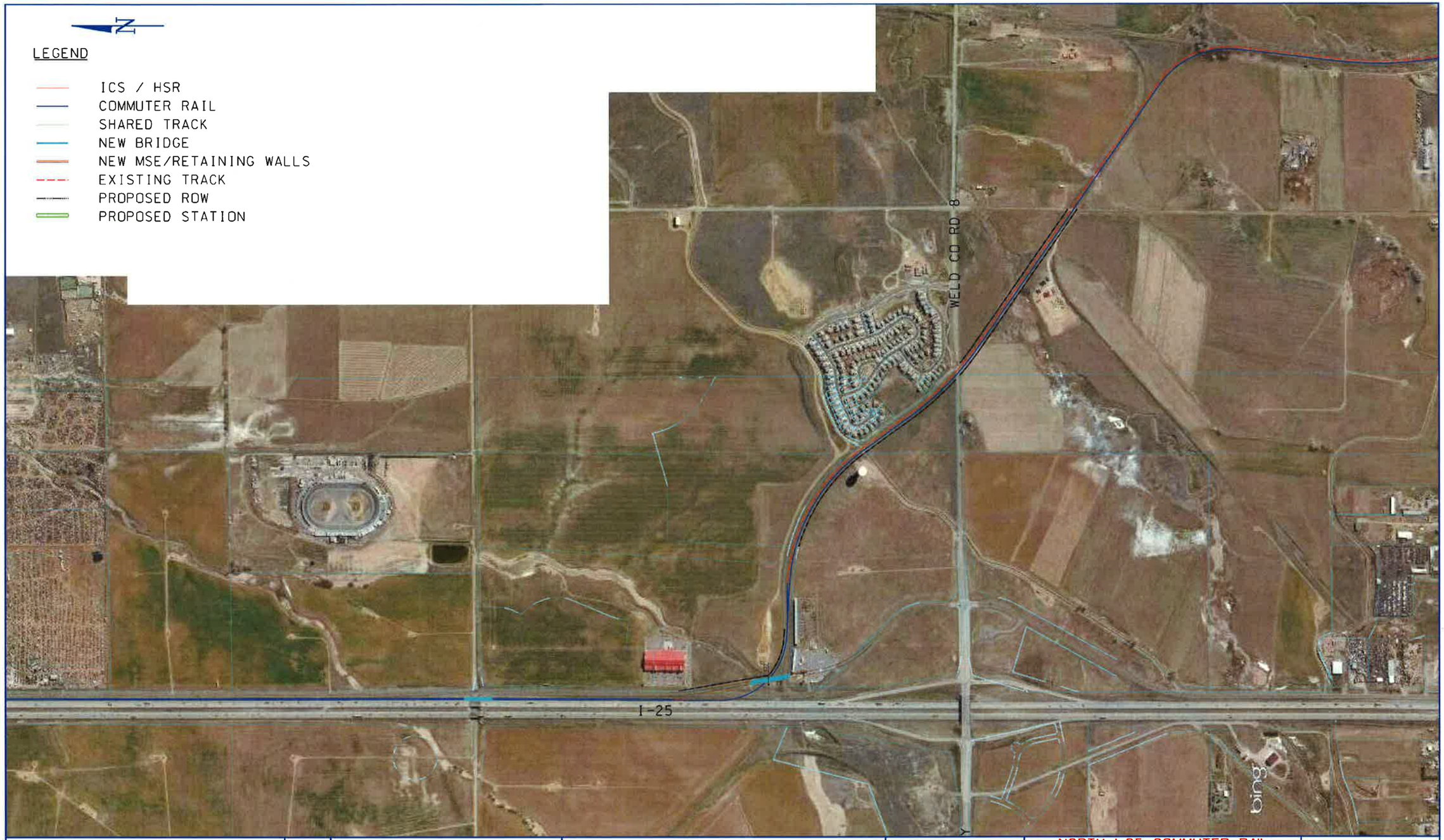

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File Name:		Date:	Comments	Init.		
Horiz. Scale: Vert. Scale: As Noted	R-X				No Revisions:	
Unit Information Unit Leader Initials					Revised: FEB 2015	Designer: R. GRAUBERGER / Structure Numbers
PARSONS BRINCKERHOFF 555 17th Street, Suite 500 Denver, CO 80202 Phone: (303) 832-9091 Fax: (303) 728-1936					Void:	Detailer: B. WARDELL / Sheet Subset: / Subset Sheets: 14 of 15 / Sheet Number

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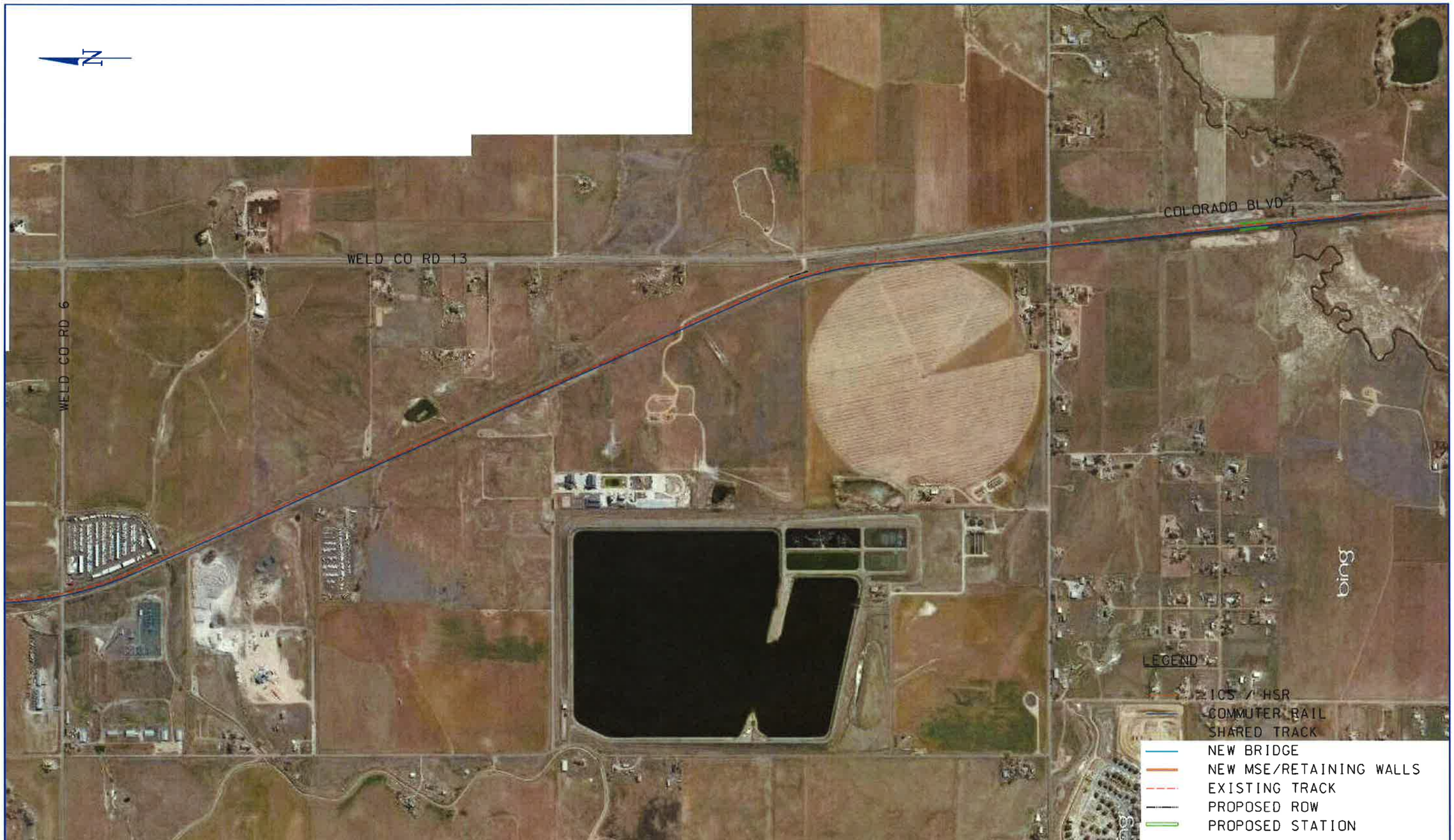

Print Date:		Sheet Revisions	Colorado Department of Transportation		NORTH I-25 COMMUTER RAIL DRAFT - CONCEPTUAL ALIGNMENT EAST ALTERNATIVE	Project No./Code
File Name:		Date: / Comments / Init.				
Horiz. Scale: / Vert. Scale: As Noted	R-X			No Revisions:		
Unit Information / Unit Leader Initials				Revised: FEB 2015	Designer: R. GRAUBERGER / Structure Numbers	
PARSONS BRINCKERHOFF 555 17th Street, Suite 500 Denver, CO 80202 Phone: (303) 832-9091 Fax: (303) 728-1936					Detailer: B. WARDELL	
				Void:	Sheet Subset: / Subset Sheets: 15 of 15	Sheet Number

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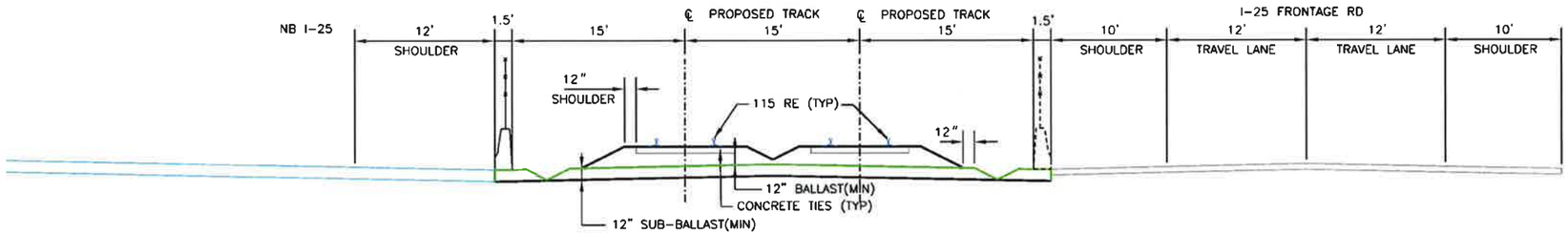
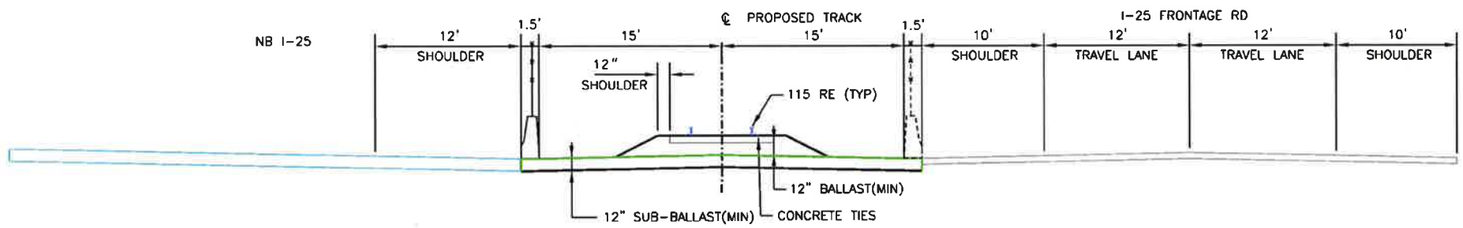
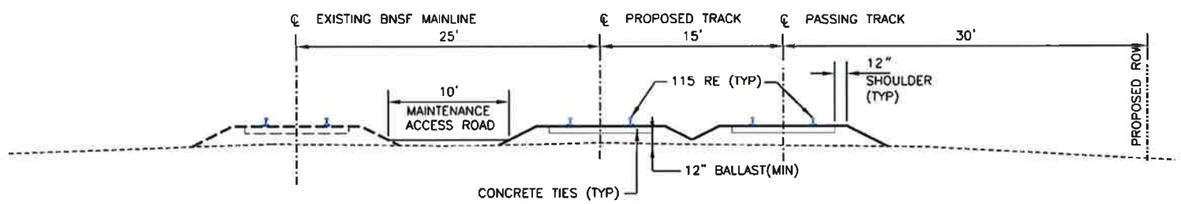


TYPICAL SECTION - I-25 CORRIDOR



TYPICAL SECTION - I-25 CORRIDOR



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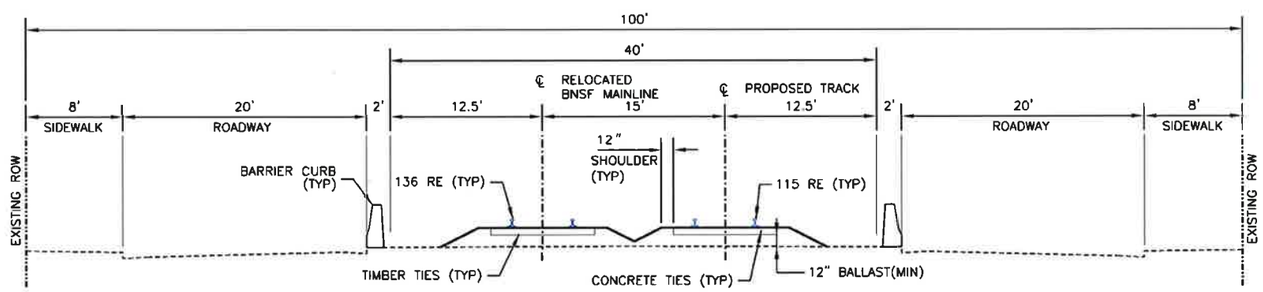

TYPICAL SECTION - ATWOOD STREET

SCALE – NTS

Print Date:		Sheet Revisions	Colorado Department of Transportation		NORTH I-25 COMMUTER RAIL DRAFT - CONCEPTUAL ALIGNMENT TYPICAL SECTIONS	Project No./Code
File Name:		Date: / Comments / Init.		No Revisions:		
Horiz. Scale: / Vert. Scale: As Noted	R-X			Revised: FEB 2015	Designer: R. GRAUBERGER / Structure Numbers	
Unit Information / Unit Leader Initials				Void:	Detailer: B. WARDELL	
PARSONS BRINCKERHOFF 555 17th Street, Suite 500 Denver, CO 80202 Phone: (303) 832-9091 Fax: (303) 728-1936					Sheet Subset: / Subset Sheets: of	Sheet Number

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Appendix H

Detailed I-25 Cost Spreadsheet

APPENDIX ____

North I-25 Commuter Rail Preliminary Cost Estimate Up-Date
February 9, 2015
(North I-25 Crossover With Sugar Mill Station)

	ITEM No.	ITEM	UNIT	UNIT COST	162ND Station to HWY 52 PNR Segment 1 APPROX. QUANTITY	162ND Station to HWY 52 PNR Segment 1 ESTIMATED COST	HWY 52 PNR to Sugar Mill PNR Segment 2 APPROX. QUANTITY	HWY 52 PNR to Sugar Mill PNR Segment 2 ESTIMATED COST	Sugar Mill PNR to N Longmont PNR Segment 3 APPROX. QUANTITY	Sugar Mill PNR to N Longmont PNR Segment 3 ESTIMATED COST	N Longmont PNR to Berthoud PNR Segment 4 APPROX. QUANTITY	N Longmont PNR to Berthoud PNR Segment 4 ESTIMATED COST	Berthoud PNR to Downtown Loveland PNR Segment 5 APPROX. QUANTITY	Berthoud PNR to Downtown Loveland PNR Segment 5 ESTIMATED COST	Downtown Loveland PNR to N Loveland PNR Segment 6 APPROX. QUANTITY	Downtown Loveland PNR to N Loveland PNR Segment 6 ESTIMATED COST	N Loveland PNR to South Transit Center Segment 7 APPROX. QUANTITY	N Loveland PNR to South Transit Center Segment 7 ESTIMATED COST	CRMF BERTHOUD/ DMU VEHICLES APPROX. QUANTITY	CRMF BERTHOUD/ DMU VEHICLES ESTIMATED COST	Corridor Total APPROX. QUANTITY	Corridor Total ESTIMATED COST	SCC Totals
		Length in feet -->			39700		51220		22180		38750		33900		8760		37380				43.92		
	10 GUIDEWAY & TRACK ELEMENTS																					$163,447,070.99	
10.01	**10.01**	**GUIDEWAY: AT-GRADE EXCLUSIVE RIGHT-OF-WAY**																					$ 5,899,345.04
10.01		ROW FENCE	LF	$15.53	70,550	$1,095,641.50	54,650	$848,714.50	34,850	$541,220.50	33,225	$515,984.25	41,419	$643,237.07	8,174	$126,942.22	38,500	$597,905.00			281,368	$4,369,645.04	
10.01		EGRESS GATES	EA	$4,500.00	6	$27,000.00	8	$36,000.00	1	$4,500.00	1	$4,500.00	16	$72,000.00	5	$22,500.00	5	$22,500.00			42	$189,000.00	
10.01		EGRESS OFF STRUCTURES	EA	$446,900.00	1	$446,900.00	2	$893,800.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00			3	$1,340,700.00	
10.02	**10.02**	**GUIDEWAY: AT-GRADE SEMI-EXCLUSIVE (ALLOWS CROSS-TRAFFIC)**																			0	$0.00	$0.00
10.03	**10.03**	**GUIDEWAY: AT-GRADE IN MIXED TRAFFIC**																			0	$0.00	$0.00
10.04	**10.04**	**GUIDEWAY: AERIAL STRUCTURE**																			0	$0.00	$15,975,222.00
		Simple Span Concrete Girder - Re-alignment of I-25 Frontage Rd.	SF	$138.36	2700	$373,572.00															2,700	$373,572.00	
10.04		Simple Span Concrete Girder - Side road crossing	SF	$138.36	4,050	$560,358.00		$0.00		$0.00		$0.00		$0.00		$0.00		$0.00			4,050	$560,358.00	
10.04		Simple Span Concrete Girder - Highway 52 Crossing	SF	$138.36	32,900	$4,552,044.00		$0.00		$0.00		$0.00		$0.00		$0.00		$0.00			32,900	$4,552,044.00	
10.04		Simple Span Concrete Girder - Bella Rosa Parkway	SF	$138.36		$0.00	2,700	$373,572.00		$0.00		$0.00		$0.00		$0.00		$0.00			2,700	$373,572.00	
10.04		Concrete Girder - North Crossing of I-25	SF	$181.44		$0.00	18,000	$3,265,920.00		$0.00		$0.00		$0.00		$0.00		$0.00			18,000	$3,265,920.00	
10.04		Simple Span Concrete Girder - Boulder Crk. (St. Vrain Crk.) Crossing of Hwy. 119	SF	$138.36		$0.00	4,200	$581,112.00		$0.00		$0.00		$0.00		$0.00		$0.00			4,200	$581,112.00	
10.04		Concrete Girder - Over Highway 119	SF	$181.44		$0.00	27,000	$4,898,880.00		$0.00		$0.00		$0.00		$0.00		$0.00			27,000	$4,898,880.00	
10.04		Simple Span Concrete Girder - Over Third Ave.	SF	$138.36		$0.00	1,500	$207,540.00		$0.00	0	$0.00		$0.00		$0.00		$0.00			1,500	$207,540.00	
		Simple Span Concrete Girder - Drainage south of Big Thompson	SF	$138.36		$0.00		$0.00		$0.00				$0.00	4200	$581,112.00		$0.00			4,200	$581,112.00	
		Simple Span Concrete Girder - Over Big Thompson River	SF	$138.36		$0.00		$0.00		$0.00				$0.00	4200	$581,112.00		$0.00			4,200	$581,112.00	
10.05	**10.05**	**GUIDEWAY: BUILT-UP FILL**																			0	$0.00	$13,052,592.20
10.05		EMBANKMENT MATERIAL (CIP)	CY	$16.05	37,500	$601,875.00	45,000	$722,250.00	15,000	$240,750.00	52,500	$842,625.00	52,500	$842,625.00	15,000	$240,750.00	52,500	$842,625.00			270,000	$4,333,500.00	
10.06		UNCLASSIFIED EXCAVATION	CY	$9.36	46,125	$431,730.00	37,500	$351,000.00	7,500	$70,200.00	30,000	$280,800.00	30,000	$280,800.00	7,500	$70,200.00	30,000	$280,800.00			188,625	$1,765,530.00	
10.05		CLEAR AND GRUBBING	AC	$1,850.00	46	$84,303.26	59	$108,766.07	25	$47,099.40	44	$82,285.93	39	$71,986.91	10	$18,601.93	43	$79,376.72			266	$492,420.22	
10.05		TOPSOIL REMOVE AND REPLACE	CY	$4.35	8271	$35,978.13	10671	$46,418.13	4621	$20,100.63	8073	$35,117.19	7063	$30,721.88	1825	$7,938.75	7788	$33,875.63			48,310	$210,150.31	
10.05		SUBGRADE PREPERATION	SY	$3.25	132,333	$430,083.33	170,733	$554,883.33	73,933	$240,283.33	129,167	$419,791.67	113,000	$367,250.00	29,200	$94,900.00	124,600	$404,950.00			772,967	$2,512,141.67	
10.05		ACCESS ROAD WITH SUB-BALLAST	LF	$18.50	32,650	$604,025.00	42,350	$783,475.00	20,150	$372,775.00	32,500	$601,250.00	30,850	$570,725.00	8,000	$148,000.00	35,600	$658,600.00			202,100	$3,738,850.00	
10.06	**10.06**	**GUIDEWAY: UNDERGROUND CUT & COVER**																			0	$0.00	$0.00
10.07	**10.07**	**GUIDEWAY: UNDERGROUND TUNNEL**																			0	$0.00	$0.00
10.08	**10.08**	**GUIDEWAY: RETAINED CUT OR FILL**																			0	$0.00	$ 48,925,729.45
10.08		RETAINING WALLS																			0	$0.00	
10.08		MSE Walls 0-10' HIGH	LF	$374.64	3,895	$1,459,222.80	6,860	$2,570,030.40	3,500	$1,311,240.00	3,500	$1,311,240.00	3,500	$1,311,240.00	2,500	$936,600.00	3,500	$1,311,240.00			27,255	$10,210,813.20	
10.08		MSE Walls 10-20' HIGH	LF	$702.45	2,800	$1,966,860.00	8,550	$6,005,947.50	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00			11,350	$7,972,807.50	
10.08		Ballast Walls	LF	$159.25	22,990	$3,661,157.50	45,455	$7,238,708.75	0	$0.00	2,600	$414,050.00	4,500	$716,625.00	5,500	$875,875.00	0	$0.00			81,045	$12,906,416.25	
10.08		Concrete Retaining Walls 0-10' HIGH	LF	$420.25	2,500	$1,050,625.00	6,270	$2,634,967.50	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00			8,770	$3,685,592.50	
10.08		SOIL NAIL WALLS 10-20' HIGH	LF	$525.00	800	$420,000.00	800	$420,000.00	2,000	$1,050,000.00	0	$0.00	700	$367,500.00	600	$315,000.00	0	$0.00			4,900	$2,572,500.00	
10.08		TANGENT CAISSON WALLS 10-20' HIGH	LF	$2,775.00	0	$0.00	0	$0.00	1,500	$4,162,500.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00			1,500	$4,162,500.00	
10.08		Wall Fencing (42") CIP TO MATCH MSE	LF	$55.00	32,985	$1,814,175.00	67,935	$3,736,425.00	7,000	$385,000.00	6,100	$335,500.00	8,700	$478,500.00	8,600	$473,000.00	3,500	$192,500.00			134,820	$7,415,100.00	
10.09	**10.09**	**TRACK: DIRECT FIXATION**																			0	$0.00	$0.00
10.11	**10.10**	**TRACK: EMBEDDED**																			0	$0.00	$0.00
10.11	**10.11**	**TRACK: BALLASTED**																			0	$0.00	$ 73,379,291.10
10.11		DOUBLE BALLASTED TRACK,115 RE,CONCRETE TIES, NOMINAL 15-FT CTRS	TF	$421.92	13,420	$5,662,166.40	11,155	$4,706,517.60	3,100	$1,307,952.00	9,088	$3,834,408.96	11,572	$4,882,458.24	300	$126,576.00	15,340	$6,472,252.80			63,975	$26,992,332.00	
10.11		SINGLE BALLASTED TRACK, 115 RE, CONCRETE TIES	TF	$231.04	26,280	$6,071,731.20	40,065	$9,256,617.60	19,080	$4,408,243.20	29,662	$6,853,108.48	22,328	$5,158,661.12	8,460	$1,954,598.40	22,040	$5,092,121.60			167,915	$38,795,081.60	
10.11		FREIGHT TRACK, BNSF (RE-ALIGNMENT AND SIDINGS)	TF	$263.15		$0.00		$0.00	3,500	$921,025.00	21,000	$5,526,150.00	0	$0.00	4,350	$1,144,702.50	0	$0.00			28,850	$7,591,877.50	
10.12	**10.12**	**TRACK: SPECIAL (SWITCHES, TURNOUTS)**																			0	$0.00	$ 6,214,891.20
10.12		NO. 20 TURNOUT, POWER OPERATED	EA	$205,750.00	1	$205,750.00	1	$205,750.00	1	$205,750.00	2	$411,500.00	1	$205,750.00	1	$205,750.00	1	$205,750.00			8	$1,646,000.00	
10.12		NO. 11 TURNOUT, BNSF INSTALLED	EA	$173,125.50	0	$0.00	0	$0.00	0	$0.00	3	$519,376.50	0	$0.00	0	$0.00	0	$0.00			3	$519,376.50	
10.12		NO. 20 TURNOUT, BNSF INSTALLED	EA	$257,187.50	0	$0.00	0	$0.00	0	$0.00	2	$514,375.00	0	$0.00	0	$0.00	0	$0.00			2	$514,375.00	
10.12		DIAMOND CROSSOVER	EA	$351,605.00	0	$0.00	1	$351,605.00	0	$0.00	0	$0.00	0	$0.00	2	$703,210.00	2	$703,210.00			5	$1,758,025.00	
10.12		GUARD RAIL	TF	$64.18	3,875	$248,697.50	2,890	$185,480.20	1,900	$121,942.00	1,500	$96,270.00	1,500	$96,270.00	1,000	$64,180.00	1,000	$64,180.00			13,665	$877,019.70	
10.12		POCKET TRACK FOR RAIL CAR STORAGE AT FT. COLLINS STATION	EA	$900,095.00		$0.00		$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	1	$900,095.00			1	$900,095.00	
10.13	**10.13**	**TRACK: VIBRATION & NOISE DAMPENING**																			0	$0.00	$0.00
	20 STATIONS, STOPS, TERMINALS, INTERMODAL																					$14,957,274.00	
20.01	**20.01**	**AT-GRADE STATION, STOP, SHELTER, MALL, TERMINAL, PLATFORM**																			0	$0.00	$14,957,274.00
20.01		3 CAR SIDE PLATFORM	EA	$2,016,879	1	$2,016,879.00	1	$2,016,879.00	1	$2,016,879.00	1	$2,016,879.00	1	$2,016,879.00	1	$2,016,879.00	0	$0.00			6	$12,101,274.00	
20.01		3 CAR ISLAND PLATFORM	EA	$2,856,000		$0.00		$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	1	$2,856,000.00			1	$2,856,000.00	
20.02	**20.02**	**AERIAL STATION, STOP, SHELTER, MALL, TERMINAL, PLATFORM**																			0	$0.00	$0.00
20.03	**20.03**	**UNDERGROUND STATION, STOP, SHELTER, MALL, TERMINAL, PLATFORM**																			0	$0.00	$0.00
20.04	**20.04**	**OTHER STATIONS, LANDINGS, TERMINALS: INTERMODAL, FERRY, TROLLEY, ETC.**																			0	$0.00	$0.00
20.05	**20.05**	**JOINT DEVELOPMENT**																			0	$0.00	$0.00
20.06	**20.06**	**AUTOMOBILE PARKING MULTI-STORY STRUCTURE**																			0	$0.00	$0.00
20.07	**20.07**	**ELEVATORS, ESCALATORS**																			0	$0.00	$0.00
20.07		PEDESTRIAN BRIDGE	SF	$225.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00			0	$0.00	
20.07		ELEVATOR	EA	$475,000.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00			0	$0.00	
	30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS																					$25,448,013.10	
30.01	**30.01**	**ADMINISTRATION BUILDING; OFFICE, LOCKER RM, STORAGE, REVENUE COUNTING**																			0	$0.00	$4,125,000.00
		ADDMINISTRATION AND CONTROL CENTER	SF	$275.00															15000	$4,125,000.00	15,000	$4,125,000.00	
30.02	**30.02**	**LIGHT MAINTENANCE FACILITY**																			0	$0.00	$0.00
30.03	**30.03**	**HEAVY MAINTENANCE FACILITY**																			0	$0.00	$19,480,347.00
30.03		MAINTENANCE FACILITY WITH TRESSLE RAIL AND MAINTENANCE PITS	LS	$13,340,547.00															1	$13,340,547.00	1	$13,340,547.00	
30.03		SITE UTILITIES	LS	$350,000.00															1	$350,000.00	1	$350,000.00	
30.03		EMBANKMENT MATERIAL (CIP)	CY	$16.00															25000	$400,000.00	25,000	$400,000.00	
30.03		UNCLASSIFIED EXCAVATION	CY	$15.00															30000	$450,000.00	30,000	$450,000.00	
30.03		FACILITY EQUIPMENT INCLUDING WHEEL TRUING MACHINE, CRANES, AND JAC	LS	$4,939,800.00															1	$4,939,800.00	1	$4,939,800.00	
30.04	**30.04**	**STORAGE OR MAINTENANCE OF WAY BUILDING**																			0	$0.00	$0.00
30.05	**30.05**	**YARD AND YARD TRACK**																			0	$0.00	$1,842,666.10
30.05		SINGLE BALLASTED TRACK, 115 RE, CONCRETE TIES	TF	$227.25															3080	$699,930.00	3,080	$699,930.00	
30.05		No. 10 TURNOUT, POWER OPERATED	EA	$114,273.61															10	$1,142,736.10	10	$1,142,736.10	

North I-25 Commuter Rail Preliminary Cost Estimate Up-Date
February 5, 2015
(North I-25 Crossover With Sugar Mill Station)

	ITEM No.	ITEM	UNIT	UNIT COST	162ND Station to HWY 52 PNR Segment 1 APPROX. QUANTITY	Segment 1 ESTIMATED COST	HWY 52 PNR to Sugar Mill PNR Segment 2 APPROX. QUANTITY	Segment 2 ESTIMATED COST	Sugar Mill PNR to N Longmont PNR Segment 3 APPROX. QUANTITY	Segment 3 ESTIMATED COST	N Longmont PNR to Berthoud PNR Segment 4 APPROX. QUANTITY	Segment 4 ESTIMATED COST	Berthoud PNR to Downtown Loveland PNR Segment 5 APPROX. QUANTITY	Segment 5 ESTIMATED COST	Downtown Loveland PNR to N Loveland PNR Segment 6 APPROX. QUANTITY	Segment 6 ESTIMATED COST	N Loveland PNR to South Transit Center Segment 7 APPROX. QUANTITY	Segment 7 ESTIMATED COST	CRMF BERTHOUD/ DMU VEHICLES APPROX. QUANTITY	CRMF BERTHOUD/ DMU VEHICLES ESTIMATED COST	Corridor Total APPROX. QUANTITY	Corridor Total ESTIMATED COST	SCC Totals
		Length -->			39700		51220		22180		38750		33900		8760		37380				43.92		
	40 SITEWORK & SPECIAL CONDITIONS																					$132,821,145.97	
40.01	40.01	DEMOLITION, CLEARING, EARTHWORK																					$5,376,201.75
40.01		TRACK REMOVAL (Seg1 track removal performed by BNSF, cost included in 60.02)	TF	$37.94	15,000	$569,100.00		$0.00	3,500	$132,790.00	10,500	$398,370.00	0	$0.00	0	$0.00	0	$0.00			29,000	$1,100,260.00	
40.01		BALLAST REMOVAL	CY	$6.00	12500	$75,000.00		$0.00		$0.00	1500	$9,000.00		$0.00	0	$0.00	0	$0.00			14,000	$84,000.00	
40.01		BUILDING DEMOLITION	CF	$0.75		$0.00	150,000	$112,500.00		$0.00	0	$0.00	3,315	$2,486.25	0	$0.00	0	$0.00			153,315	$114,986.25	
40.01		DEMO PAVED SURFACES																					
40.01		REMOVE ASPHALT PAVEMENT	SY	$6.34	16,250	$103,025.00	75,000	$475,500.00	35,000	$221,900.00	20,000	$126,800.00	25,000	$158,500.00	5,000	$31,700.00	25,000	$158,500.00			201,250	$1,275,925.00	
40.01		REMOVE CONCRETE CURB AND GUTTER	LF	$6.34	7,500	$47,550.00	2,500	$15,850.00	2,155	$13,662.70	1,500	$9,510.00	1,500	$9,510.00	500	$3,170.00	2,500	$15,850.00			18,155	$115,102.70	
40.01		REMOVE CONCRETE SIDEWALK	SY	$6.28	850	$5,338.00	850	$5,338.00	1,060	$6,656.80	1,000	$6,280.00	1,000	$6,280.00	1,000	$6,280.00	1,000	$6,280.00			6,760	$42,452.80	
40.01		REMOVE EXISTING TRACK PANEL	LF	$156.36	0	$0.00	60	$9,381.60	540	$84,434.40	120	$18,763.20	300	$46,908.00	180	$28,144.80	240	$37,526.40			1,440	$225,158.40	
40.01		CLEARING & GRUBBING	AC	$2,358.20	8	$18,865.60	5	$11,791.00	10	$23,582.00	10	$23,582.00	10	$23,582.00	10	$23,582.00	10	$23,582.00			63	$148,566.60	
40.01		EARTHWORK																					
40.01		UNCLASSIFIED EXCAVATION	CY	$9.36	10,000	$93,600.00	5,000	$46,800.00	25,000	$234,000.00	10,000	$93,600.00	10,000	$93,600.00	10,000	$93,600.00	10,000	$93,600.00			80,000	$748,800.00	
40.01		EMBANKMENT MATERIAL (CIP)	CY	$16.01	25,000	$400,250.00	5,000	$80,050.00	10,000	$160,100.00	10,000	$240,150.00	15,000	$240,150.00	20,000	$320,200.00	10,000	$160,100.00			95,000	$1,520,950.00	
40.02	40.02	SITE UTILITIES, UTILITY RELOCATION																			0	$0.00	$22,123,603.98
40.02		DRAINAGE AND IRRIGATION (2% OF CBI)	LS	1-2%	1%	$898,219.71	1%	$1,315,351.79	2%	$1,270,268.30	2%	$1,440,553.60	2%	$1,414,823.38	1%	$284,880.28	1%	$750,437.60			0	$7,374,534.66	
40.02		WET UTILITIES (WATER, SANITARY SEWER) (2% OF CBI)	LS	1-2%	1%	$898,219.71	1%	$1,315,351.79	2%	$1,270,268.30	2%	$1,440,553.60	2%	$1,414,823.38	1%	$284,880.28	1%	$750,437.60			0	$7,374,534.66	
40.02		DRY UTILITIES (GAS, ELECTRIC, COMMUNICATIONS) (2% OF CBI)	LS	1-2%	1%	$898,219.71	1%	$1,315,351.79	2%	$1,270,268.30	2%	$1,440,553.60	2%	$1,414,823.38	1%	$284,880.28	1%	$750,437.60			0	$7,374,534.66	
40.03	40.03	HAZ. MAT'L, CONTAM'D SOIL REMOVAL/MITIGATION, GROUND WATER TRTMT																			0	$0.00	$10,623,424.04
40.03		2% OF CBI	LS	2%	1	$1,796,439.42	1	$2,630,703.58	1	$1,270,268.30	1	$1,440,553.60	1	$1,414,823.38	1	$569,760.56	1	$1,500,875.20			7	$10,623,424.04	
40.04	40.04	ENVIRONMENTAL MITIGATION, E.G. WETLANDS, HISTORIC/ARCHEOLOGIC, PARKS																			0	$0.00	$21,246,848.08
40.04		Environmental Mitigation Compliance (2% CBI)	LS	2%	1	$1,796,439.42	1	$2,630,703.58	1	$1,270,268.30	1	$1,440,553.60	1	$1,414,823.38	1	$569,760.56	1	$1,500,875.20			7	$10,623,424.04	
40.04		NOISE MITIGATION	LS	2%	1	$1,796,439.42	1	$2,630,703.58	1	$1,270,268.30	1	$1,440,553.60	1	$1,414,823.38	1	$569,760.56	1	$1,500,875.20			7	$10,623,424.04	
40.05	40.05	SITE STRUCTURES INCLUDING RETAINING WALLS, SOUND WALLS																			0	$0.00	$787,500.00
40.05		MINOR RETAINING WALL - AT STATIONS	LF	$75	750	$56,250.00	750	$56,250.00	750	$56,250.00	750	$56,250.00	750	$56,250.00	750	$56,250.00	750	$56,250.00			5,250	$393,750.00	
40.05		MINOR RETAINING WALL - ALONG ROADS & TRAILS	LF	$75	750	$56,250.00	750	$56,250.00	750	$56,250.00	750	$56,250.00	750	$56,250.00	750	$56,250.00	750	$56,250.00			5,250	$393,750.00	
40.06	40.06	PEDESTRIAN/BIKE ACCESS AND ACCOMMODATION, LANDSCAPING																			0	$0.00	$627,800.00
40.06		PEDESTRIAN ACCESS	LS	$25,000.00	1	$25,000.00	1	$25,000.00	1	$25,000.00	1	$25,000.00	1	$25,000.00	1	$25,000.00	1	$25,000.00			7	$175,000.00	
40.06		BIKE ACCESS AND ACCOMMODATION	LS	$10,000.00	1	$10,000.00	1	$10,000.00	1	$10,000.00	1	$10,000.00	1	$10,000.00	1	$10,000.00	1	$10,000.00			7	$70,000.00	
40.06		LANDSCAPING	SY	$7.25	9,500	$68,875.00	4,600	$33,350.00	4,600	$33,350.00	7,500	$54,375.00	4,600	$33,350.00	10,000	$72,500.00	12,000	$87,000.00			52,800	$382,800.00	
40.07	40.07	AUTOMOBILE, BUS, VAN ACCESSWAYS INCL ROADS, PARKING LOTS																			0	$0.00	$5,051,075.00
40.07		ROADWAY CONSTRUCTION																			0	$0.00	
40.07		UNIT RATE PER LINEAR FOOT	LF	$183.50	1,000	$183,500.00	500	$91,750.00	1,150	$211,025.00	150	$27,525.00	50	$9,175.00	450	$82,575.00	150	$27,525.00			3,450	$633,075.00	
40.07		PARK N RIDE LOTS				$0.00		$0.00		$0.00		$0.00		$0.00		$0.00		$0.00			0	$0.00	
40.07		UNIT RATE PER STALL ASPHALT	EA	$3,650.00	300	$1,095,000.00	90	$328,500.00	30	$109,500.00	50	$182,500.00	40	$146,000.00	120	$438,000.00	130	$474,500.00			760	$2,774,000.00	
		CROSSING APPROACHES								$0.00		$0.00		$0.00		$0.00		$0.00			0	$0.00	
		UNIT RATE PER CROSSING FOR QUITE ZONE ROADWAY PROFILE	EA	$68,500.00	0	$0.00	1	$68,500.00	9	$616,500.00	2	$137,000.00	5	$342,500.00	3	$205,500.00	4	$274,000.00			24	$1,644,000.00	
40.08	40.08	TEMPORARY FACILITIES AND OTHER INDIRECT COSTS DURING CONSTRUCTION																			0	$0.00	$66,984,693.12
40.08		INDIRECTS 18% OF CBI	LS	18%		$11,121,275.52		$16,408,045.62		$9,580,108.14		$8,398,857.96		$8,888,917.32		$3,835,154.34		$8,752,334.22				$66,984,693.12	
		Base CBI			$89,821,971.00		$131,535,179.00		$ 63,513,415.00		$ 72,027,680.00		$ 70,741,169.00		$ 28,488,028.00		$ 75,043,760.00						
	50 SYSTEMS																					$241,266,301.65	
50.01	50.01	TRAIN CONTROL AND SIGNALS																			0	$0.00	$131,755,681.82
		TRAIN CONTROL AND SIGNALS WITH PTC	MILE	$3,000,000.00	7.5	$22,556,818.18	9.7	$29,102,272.73	4.2	$12,602,272.73	7.3	$22,017,045.45	6.4	$19,261,363.64	1.7	$4,977,272.73	7.1	$21,238,636.36			44	$131,755,681.82	
50.02	50.02	TRAFFIC SIGNALS AND CROSSING PROTECTION																			0	$0.00	$37,765,440.00
50.02		TRAFFIC SIGNALS	EACH	$350,000.00	2	$700,000.00	3	$1,050,000.00	2	$700,000.00	2	$700,000.00	2	$700,000.00	3	$1,050,000.00	4	$1,400,000.00			18	$6,300,000.00	
50.02		REMOVE EXISTING CROSSING GATE AND FOUNDATION	EACH	$2,500.00	0	$0.00	2	$5,000.00	18	$45,000.00	4	$10,000.00	10	$25,000.00	6	$15,000.00	8	$20,000.00			48	$120,000.00	
50.02		CROSSING GATE AND SIGNALS	EACH	$168,000	4	$672,000.00	30	$5,040,000.00	12	$2,016,000.00	6	$1,008,000.00	10	$1,680,000.00	3	$504,000.00	8	$1,344,000.00			73	$12,264,000.00	
50.02		AT-GRADE CROSSING PANELS	LF	$284.00	240	$68,160.00	180	$51,120.00	720	$204,480.00	240	$68,160.00	360	$102,240.00	180	$51,120.00	240	$68,160.00			2,160	$613,440.00	
		CROSSING EQUIPMENT BNSF (GATES, PANELS, MISC.)	EACH	$286,500.00	0	$0.00	1	$286,500.00	9	$2,578,500.00	2	$573,000.00	5	$1,432,500.00	3	$859,500.00	4	$1,146,000.00			24	$6,876,000.00	
		EXISTING BNSF/GWR CROSSING UPGRADED EQUIPMENT AND ITEGRATION	EACH	$483,000.00	0	$0.00	1	$483,000.00	9	$4,347,000.00	2	$966,000.00	5	$2,415,000.00	3	$1,449,000.00	4	$1,932,000.00			24	$11,592,000.00	
50.04	50.04	SYSTEM-WIDE ELECTRICAL	MILE	$500,000.00	7.5	$3,759,469.70	9.7	$4,850,378.79	4.2	$2,100,378.79	7.3	$3,669,507.58	6.4	$3,210,227.27	1.7	$829,545.45	7.1	$3,539,772.73			44	$21,959,280.30	$21,959,280.30
50.05	50.05	COMMUNICATIONS / CENTRAL CONTROL	MILE	$864,611.11	7.5	$6,500,958.54	9.7	$8,387,382.79	4.2	$3,632,021.68	7.3	$6,345,394.04	6.4	$5,551,196.34	1.7	$1,434,468.43	7.1	$6,121,053.66			44	$37,972,475.48	$48,595,899.52
40.04		SECURITY WITH CAMERAS	LS	2%	1	$1,796,439.42	1	$2,630,703.58	1	$1,270,268.30	1	$1,440,553.60	1	$1,414,823.38	1	$569,760.56	1	$1,500,875.20			7	$10,623,424.04	
50.06	50.06	FARE COLLECTION SYSTEM AND EQUIPMENT	EACH	$85,000.00	2	$170,000.00	2	$170,000.00	2	$170,000.00	2	$170,000.00	2	$170,000.00	2	$170,000.00	2	$170,000.00			14	$1,190,000.00	$1,190,000.00
	SUBTOTAL CONSTRUCTION BID ITEMS (CBI)					$92,057,476.97		$134,730,639.79		$66,290,100.39		$80,019,957.41		$72,712,978.70		$30,469,923.63		$76,210,715.72		$25,448,013.10		$577,939,805.71	$577,939,805.71
	60 ROW, LAND, EXISTING IMPROVEMENTS																					$129,813,000.00	
60.01	60.01	PURCHASE OR LEASE OF REAL ESTATE																			0.00	$0.00	$122,000,000.00
60.01			LS	$122,000,000.00	17.12%	$20,886,627.28	22.09%	$26,947,431.97	9.56%	$11,669,153.48	16.71%	$20,386,821.34	14.62%	$17,835,180.47	3.78%	$4,608,736.90	16.12%	$19,666,048.56			0.00	$122,000,000.00	
60.02	60.02	RELOCATION OF EXISTING HOUSEHOLDS AND BUSINESSES																			0.00	$0.00	$7,813,000.00
		BNSF (RELOCATION, CROSSINGS, RECONSTRUCT) FLAGGING	LS						1	$803,000.00	1	$1,700,000.00	1	$1,700,000.00	1	$1,700,000.00	1	$1,700,000.00			3.00	$7,603,000.00	
		GWR (RELOCATION, CROSSINGS, RECONSTRUCT) FLAGGING	LS				1	$140,000.00													1.00	$140,000.00	
		RTD (RELOCATION, CROSSINGS, RECONSTRUCT) FLAGGING	LS		1	$70,000.00															1.00	$70,000.00	
60.02						$0.00		$0.00		$0.00		$0.00		$0.00		$0.00		$0.00			0.00	$0.00	
	70 VEHICLES																					$91,000,000.00	
70.03	70.03	DMU																					$91,000,000.00
		POWERED UNIT	EACH	$4,500,000.00															7	$31,500,000.00	7	$31,500,000.00	
		UN-POWERED WITH CONTROL CAB UNIT	EACH	$4,300,000.00															7	$30,100,000.00	7	$30,100,000.00	
		UN-POWERED UNIT	EACH	$4,200,000.00															7	$29,400,000.00	7	$29,400,000.00	
	80 PROFESSIONAL SERVICES																					$123,771,337.29	
80.01	80.01	ENGINEERING DESIGN PRELIMINARY - CONSULTANT	LS	$39,307,111.74	17.12%	$6,729,450.76	22.09%	$8,682,178.03	9.56%	$3,759,678.03	16.71%	$6,568,418.56	14.62%	$5,746,306.82	3.78%	$1,484,886.36	16.12%	$6,336,193.18			1	$39,307,111.74	$ 39,307,111.74
80.02	80.02	ENGINEERING DESIGN 100% - CONSULTANT - 8% CBI	8%	$46,235,184.46	17.12%	$7,915,549.71	22.09%	$10,212,454.82	9.56%	$4,422,339.86	16.71%	$7,726,134.80	14.62%	$6,759,121.80	3.78%	$1,746,604.92	16.12%	$7,452,978.55			1	$46,235,184.46	$ 46,235,184.46
80.03	80.03	PROJECT MANAGEMENT FOR DESIGN AND CONSTRUCTION CDOT	LS	$4,611,448.86	17.12%	$789,488.64	22.09%	$1,018,579.55	9.56%	$441,079.55	16.71%	$770,596.59	14.62%	$674,147.73	3.78%	$174,204.55	16.12%	$743,352.27			1	$4,611,448.86	$4,611,448.86
80.03	80.03	RFP DEVELOPMENT	LS	$2,000,000.00	17.12%	$342,403.73	22.09%	$441,761.18	9.56%	$191,297.60	16.71%	$334,210.19	14.62%	$292,380.01	3.78%	$75,553.06	16.12%	$322,394.24			1	$2,000,000.00	$2,000,000.00
80.04	80.04	CONSTRUCTION ADMINISTRATION & MANAGEMENT (included in 80.03)	LS	$5,000,000.00	17.12%	$856,009.31	22.09%	$1,104,402.95	9.56%	$478,243.99	16.71%	$835,525.46	14.62%	$730,950.02	3.78%	$188,882.66	16.12%	$805,985.60			1	$5,000,000.00	$ 5,000,000.00
80.05	80.05	INSURANCE	3.0%	$17,338,194.17	17.12%	$2,968,331.14	22.09%	$3,829,670.56	9.56%	$1,658,377.45	16.71%	$2,897,300.55	14.62%	$2,534,670.67	3.78%	$654,976.85	16.12%	$2,794,866.95			1	$17,338,194.17	$ 17,338,194.17
80.06	80.06	LEGAL; PERMITS;REVIEW FEES BY OTHER AGENCIES	LS	$1,000,000.00	17.12%	$171,201.86	22.09%	$220,880.59	9.56%	$95,648.80	16.71%	$167,105.09	14.62%	$146,190.00	3.78%	$37,776.53	16.12%	$161,197.12			1	$1,000,000.00	$ 1,000,000.00
80.07	80.07	SURVEYS, TESTING, INVESTIGATION, INSPECTION (OVT FROM DIVINESS)	1.0%	$5,779,398.06	17.12%	$989,443.71	22.09%	$1,276,556.85	9.56%	$552,792.48	16.71%	$965,766.85	14.62%	$844,890.22	3.78%	$218,325.62	16.12%	$931,622.32			1	$5,779,398.06	$ 5,779,398.06
80.08	80.08	CRT ACTIVATION / SYSTEM INTEGRATION	LS	$2,500,000.00	17.12%	$428,004.66	22.09%	$552,201.47	9.56%	$239,122.00	16.71%	$417,762.73	14.62%	$365,475.01	3.78%	$94,441.33	16.12%	$402,992.80			1	$2,500,000.00	$ 2,500,000.00
	90 UNALLOCATED CONTINGENCY																					$284,391,646.83	
90	90.00	UNALLOCATED CONTINGENCY (30% of CBI)	30.0%	$173,381,941.71	17.12%	$29,683,311.42	22.09%	$38,296,705.57	9.56%	$16,583,774.49	16.71%	$28,973,005.48	14.62%	$25,346,706.73	3.78%	$6,549,768.47	16.12%	$27,948,669.55	30.00%	$34,934,403.93	1	$208,316,345.64	$284,391,646.83
		UNALLOCATED CONTINGENCY ROW, LAND, EXISTING IMPROVEMENTS	30.0%	$38,943,900.00	17.12%	$6,667,268.23	22.09%	$8,601,951.61	9.56%	$3,724,937.26	16.71%	$6,507,724.03	14.62%	$5,693,208.89	3.78%	$1,471,165.48	16.12%	$6,277,644.50			1	$38,943,900.00	
		UNALLOCATED CONTINGENCY PROFESSIONAL SERVICES	30.0%	$37,131,401.19	17.12%	$6,356,965.06	22.09%	$8,201,605.80	9.56%	$3,551,573.93	16.71%	$6,204,846.25	14.62%	$5,428,239.68	3.78%	$1,402,695.56	16.12%	$5,985,474.91			1	$37,131,401.19	
	SUB-TOTAL			TOTALS		$176,911,532.49		$244,257,020.73		$114,461,119.32		$164,475,175.32		$146,810,446.76		$50,877,941.93		$157,740,136.25		$151,382,417.03		$1,206,915,789.83	$1,206,915,789.83
				Totals		$176,911,532.49		$244,257,020.73		$114,461,119.32		$164,475,175.32		$146,810,446.76		$50,877,941.93		$157,740,136.25		$151,382,417.03		$1,206,915,789.83	
			Cost per mile			$23,528,788.20		$25,179,169.65		$27,247,733		$22,411,069		$22,866,052		$30,666,156.78		$22,281,110.74					

Appendix I

Analysis of Similar Commuter Rail Properties in United States

- BNSF will consider accommodating passenger trains speeds up to but not beyond 90 MPH.
- Passenger equipment and rolling stock used has to be FRA compliant.
- Any commuter operation cannot degrade BNSF's freight service; negatively affect BNSF's freight customers or BNSF's ability to provide them with service.
- BNSF will not incur any liability for commuter operations that it would not have but for those operations.
- Capital investments necessary for commuter service are the responsibility of the public.
- BNSF will limit commuter operations to the commuter schedules initially agreed upon and for which the capital improvement plan has been designed.
  - Future expansions will have to undergo the same analysis and provide any required capital improvements before schedules can be changed, services or stations added.
- Investments made for commuter projects must not result in BNSF incurring a higher tax burden.
  - Property improvements should not become part of BNSF's tax base.
  - Materials used should be exempt from all sales and use taxes, etc., or BNSF must be made whole for any increased tax burden.
- Studies of how commuter service might be provided must take into account not only the current freight levels, but projected freight traffic growth.
- Studies must reflect BNSF's actual operating conditions and cost structures.
  - Construction cost estimates must reflect BNSF labor costs.
  - Passenger schedules cannot assume that BNSF will not operate any freight trains during peak commuter periods.
- BNSF must retain operating control of rail facilities used for commuter services.
  - All dispatching, maintenance and construction must be done under the control of BNSF.
  - Passenger stations, parking lots and other non-rail facilities may be publicly owned and operated.
- BNSF must be compensated for any and all costs incurred in providing commuter service and make a reasonable return for providing the service.
- Improvements must include grade crossing protection and inter-track fencing as required to minimize the risk of accidents due to liability and service interruption concerns.

Appendix J

Commuter Rail Checklist (Ohio Statewide Rail Plan – 2010)

Appendix B: Commuter Rail Checklist

The purpose of this Appendix is to define steps in the planning process for an analysis of a potential commuter rail service. The list is not definitive. Rather, it cites tasks that are fairly commonly performed when commuter rail feasibility is being investigated and service is being implemented. It is included in the Ohio State Rail Plan as a check list for Ohio urban area planners who might be entertaining studying or establishing commuter rail services alone or as a compliment to the planned rail passenger services.

Commuter Rail Analysis Checklist

Any plan must follow the accepted planning processes of the organization sponsoring the study and potential implementation of commuter rail service. If federal funding is sought, federal requirements must be followed as well. It is important to actively engage the freight railroads during initial discussions and throughout the commuter rail planning process. The majority of freight rail lines are privately owned and discussions concerning use of their lines must involve them. The decision to allow commuter trains on private rail lines is a privilege granted by the private owners of the rail lines. It is not a legal right. Successful partnerships with the private railroads are necessary before attempting to begin any efforts to establish commuter rail services. Interaction with the host railroads is something that needs to be emphasized throughout the process of examining commuter rail. The rail line owner must be in agreement to allow commuter rail trains on their lines before any of the following steps can advance.

Listed below are 20 steps likely to be part of the planning process.

1. ***Determine need and prerequisites for a commuter rail service.*** Chief among the prerequisites are potential ridership, existence of a rail line, chronic congestion on the parallel highway, and transit supportive land uses. As regards potential demand, an order-of-magnitude ridership forecast might be performed, based on a comparative analysis with existing rail systems. The other prerequisites could be confirmed in a similarly informal, high-level fashion. A likely performer of these informal analyses would be the local Metropolitan Planning Organization. Initial patronage forecasts can also be performed by FTA's Aggregate Rail Ridership Forecasting Model.
2. ***Develop a conceptualized operating plan.*** A conceptual operating plan should be developed that would include schedule, station stop, rolling stock type, maintenance facility location, and capacity improvement concepts. The plan should be developed in partnership with track owner and freight service operator (often one and the same) for initial comments on capacity improvements. If conceptual ridership estimates are enough to fill two or three trains, and if the freight railroad's reaction to the operating plan is positive, the effort should proceed to a more formal preliminary feasibility study. The MPO could also assist in developing this operating plan.
3. ***Identify preliminary feasibility study sponsor.*** The study sponsor could be the MPO or an aggregation of jurisdictions to be served by the commuter trains. It might also be the local transit service provider. The sponsor would secure funding for the preliminary feasibility study and initiate the study. A consultant could be retained to progress the study, at the direction of the study sponsor.
4. ***Consult with the Federal Railroad Administration.*** The Federal Railroad Administration (FRA) has published guidelines on railroad corridor transportation plans.[1] The guidelines specify steps which the FRA will insist upon in order to secure the agency's support for the project. The FRA is the federal agency charged with safety oversight of the national railroad system. The study sponsor

[1] *Railroad Corridor Transportation Plans, a Guidance Manual*, Federal Railroad Administration, Revised July 8, 2005.

should consult with the FRA about the commuter rail concept, share the conceptual ridership and operating plan, and obtain the agency's comments. If study sponsors anticipate that federal funding might be sought to help fund the implementation, then sponsors should also consult with the Federal Transit Administration (FTA) and the Federal Highway Administration (FHWA) and obtain their comments.

5. ***Establish a study steering committee.*** The committee could consist of service area stakeholders to guide the analysis and offer feedback throughout the study effort. The freight rail operator should be a member of this committee. With funding secured and a steering committee in place, the preliminary feasibility study, inclusive of Steps 6 through 14 below, can begin. The study may take between 6 to 12 months to complete.

6. ***Define the service concept.*** Moving beyond the conceptual operating plan, and in partnership with the rail owner, the study sponsor should identify the specific endpoints, the intermediate station locations, and the equipment maintenance and layover facilities, also known as support facilities. Detailed schedules for the commuter trains would be developed.

7. ***Develop a ridership and revenue forecast.*** The forecast should include one for the start-up year, and another 10 or even 20 years thence. The ridership forecast should be prepared using a traditional travel demand model calibrated to produce a commuter rail ridership forecast. While most large metropolitan MPOs have a commuter rail mode in their models, many do not. The study sponsor should ensure that the model to be used will meet the requirements of the FTA, if federal funding might be sought. Revenue estimates can be based by multiplying an average fare (e.g. 15 cents per train mile, assuming a mix of monthly passes, 10-ride tickets, senior discounts, disabled person discounts, student discounts, and cash fares) by total anticipated ridership. Defensible average fares can be estimated by a comparative analysis of existing systems' fare structures.

8. ***Select a rolling stock type.*** Three general types of rolling stock are potentials for a new commuter rail service. One option is electric locomotives or electric trainsets, which would imply expensive electrification of the rail route. Another option is self-propelled diesel railcars, known DMUs. However, no DMUs are being manufactured in the U.S., as previously noted. To this point, the most start-up commuter rail rolling stock have consisted of diesel locomotive-hauled trainsets and trailing coaches. While there a limited number of passenger diesel locomotive builders in the U.S., used and serviceable locomotives are available. There are multiple commuter car builders in the U.S. Regardless of equipment type, each prospective equipment manufacturer should be contacted to learn equipment specifics and lead times for delivery, which can be up to 2 years. Locomotive-hauled commuter rail trainsets operate in bi-directionally in push-pull mode: a locomotive on one end and a trailing coach with a driver's compartment on the other, obviating the need to turn a trainset at each terminus.

9. ***Perform an operations simulation.*** This step requires the use of a computer program which can route trains over a network and resolve how trains operating in opposing directions pass each other. Large freight railroads have such programs, which resolve meet-pass conflicts on the basis of priority. Passenger trains usually have higher priority than freight trains. Thus on a single-track network, passenger trains pass opposing freight trains, which are directed by the program to passing sidings. Key inputs to the simulation are the existing track configuration, the existing freight movements on the line, and the proposed passenger schedules and rolling stock. Output will enable identification of specific capacity improvements to ensure commuter and passenger trains reliability. The simulation should also consider any freight service increases, either in numbers of trains or train length, likely to exist in the future. Ideally, the potential host freight railroad would perform the simulation, and provide the results for review and validation by the study sponsor.

10. ***Calculate operating and maintenance (O&M) costs.*** O&M costs include costs for crews, maintenance of equipment, maintenance of facilities, professional fees, insurance, management expenses, rents, and general and administrative expenses. These can be estimated through comparative analysis of existing commuter rail systems' O&M costs and making appropriate adjustments.

11. ***Calculate capital costs.*** Capital costs include rolling stock, support facilities, improvements to structures, stations, signal system improvements, new track to improve line capacity, track upgrades, grade crossing safety improvements, communications systems including electronic message signs, ticket vending machines, among other things. Improvements can include highway-rail separations, often costing millions of dollars. However, these would occur only at crossings that already have high volumes of both rail and motor vehicle traffic.

12. ***Define transit integration.*** Typically, the majority of commuter rail riders drive to their origin stations. At a destination station, however, those whose jobs are not within walking distance are dependent on local transit to move them to their work centers and back to the station in the afternoon. The point of this task is to determine how commuter rail and local transit can work together to provide a reliable, efficient, and effective transfer of passengers.

13. ***Develop a pro forma financial plan.*** This plan will identify the required operating subsidies, i.e. operating expenses in excess of fare revenue. The plan will also detail when costs for required capital improvements will be incurred. The plan will make specific assumptions about funding sources to cover expenses. At this point, study sponsor will make a decision on whether or not to seek federal assistance.

14. ***Produce a transportation plan.*** This plan should be consistent with FRA guidelines and compatible with the operations of the rail owner. Beyond specification of likely ridership, revenue and costs, the plan should detail the public benefits of the new rail service through such metrics as transit time savings, greenhouse gas emissions and VMT reductions, opportunities for transit-oriented development around stations, and general economic development consequent with establishment of the service. The plan should specify the likely environmental impacts to the service area of building and operating a commuter rail service, and how these might be mitigated. If the plan is adopted by they study sponsor, then concrete steps toward implementation can begin.

15. ***Craft the institutional agreements for funding.*** These agreements will detail the future rail service sponsors and their funding shares.

    Federal funding requirements: If federal funding is to be sought, the FTA's New Starts process (49 USC Section 5309) must be followed[2]. The process specifies that an Alternatives Analysis (AA) will be required. The AA can last 18 to 24 months. The purpose of the AA to confirm that commuter rail is indeed the best solution to the transportation need, that is, it is the Locally Preferred Alternative (LPA). It will revisit anticipated ridership, revenue, and costs to the degree required by the FTA, the likely source of federal funding for the project. At local discretion, the AA may include the undertaking of a Draft Environmental Impact Statement (DEIS). FTA strongly encourages the involvement of a wide range of stakeholders – including the general public – in the AA study process. The DEIS effort can require another 18 to 24 months. If FTA accepts the AA and the LPA, federal funding can be obtained for preliminary engineering, final design, and construction.

    If no federal funding is sought, the service sponsors can move directly to right-of-way purchase, design, construction, rolling stock acquisition, and implementation. It is important to note that

[2] More detail on the New Starts process can be found at: http://www.fta.dot.gov/planning/newstarts/planning_environment_2608.html

modifications for railroad rights-of-way are exempt from environmental review. However, construction of stations and support facilities, which normally are at least partially outside of a rail right-of-way, would require environmental assessment.

16. ***Establish a service management team.*** The team is required to move ahead with the federal requirements, if federal assistance is sought, or to move ahead directly to design, construction, etc., and to secure operating agreements with the freight carrier/track owner. The team will need to continue to involve the FRA and FTA, and potentially the FHWA, in planning and oversight.
17. ***Order equipment and build the system.*** These tasks can occur concurrently. They could take another 18 to 24 months. Shorter lead times for equipment could be achieved, if orders are added to already contracted production runs. Time could be slashed if used but serviceable rolling stock could be found. Nashville's Music City Star purchased surplus rolling stock from Chicago's Metra service to begin operations. Negotiations for any land acquisitions required for stations and support facilities could push back the start of construction.
18. ***Hire an operator and an equipment maintainer.*** The management team could contract with Amtrak, with a private contractor, or with the track-owning freight railroad for operations and maintenance of equipment. For example, Caltrain on the San Francisco Peninsula contracts with Amtrak to operate and maintain trains. A non-railroad private contractor provides these services to Altamont Commuter Express (ACE) in Northern California. Operating on BNSF Railway track, Sounder in Seattle relies on BNSF to run trains and on Amtrak for equipment maintenance. The host freight railroad may wish to retain responsibility for higher track maintenance levels consequent with the implementation of passenger trains, and be reimbursed for this work by the commuter service.
19. ***Test and debug the system.*** Once the track and signaling systems have been improved, the stations and support facilities built, the rolling stock delivered, ticketing and communications systems installed, and the operator trained, testing and debugging must be performed prior to start of revenue service. Inevitably there will be glitches that will need to be fixed. Testing and debugging could require a further 6 months.
20. ***Cut the ribbon and begin revenue service.*** Services for which federal funding was not sought can start within 2 to 3 years of when the service concept was adopted by project sponsors. Start-up of services for which federal funding was obtained can take twice that time, or even more. Regardless, opening day is a long anticipated and eagerly awaited event. Some services have kicked off operations by temporarily offering train rides free to the public in an effort to engender support and interest in the service.

With an Eye to the Future

Once the service is up and running, service sponsors will likely continue to grapple with securing funding for regular operations and capital improvements. If service sponsors include multiple agencies, recurring debates over who should contribute how much can be expected.

As ridership builds, the service managers may seek to expand the service, either in terms of more trains, more lines, or line extensions, or all three. Such expansion will require a critical long-term strategic assessment of the system: what it has accomplished, and where it needs to go. For example, new outlying housing developments along the rail line or beyond the existing terminus may indicate a need for new stations or a line extension. Rapid ridership growth may indicate a need for either more cars per trainset or more trains.

The results of that assessment will share elements with the preliminary feasibility study discussed above: forecasts of ridership and revenue, estimates of operating and capital costs, and perhaps even modifications of

the institutional structure if new jurisdictions are to be served. Based on that analysis, work for the future can begin. As stated, it is critical to work in partnership with the rail track owner and consider the economic value of sustaining effective freight capacity throughout the process.