

Appendix A – Response to Agency and Public Comments

The following table outlines the responses to public and agency comments received on the Central Corridor Extension draft Environmental Evaluation (EE) document. The draft EE was made available to the public for a 30-day review and comment period between December 9, 2009 and January 11, 2010.

No.	Comment*	Response to Comment
December 16, 2009 Public Meeting Comments		
1	<p>Loralie Cole 3609 Lafayette Street Denver, CO 80205 Comment form submitted at public meeting</p> <p>I was surprised to find that light rail will continue and not a new street car system - I think that finding a compromise and not needing to take the 45 properties originally expected is great. I guess time will tell on if the traffic flow won't become too crazy, but it seems like a thoughtful plan.</p> <p>I DISAGREE with blocking the left-hand turns from 35th onto southbound Downing. Can you wait and see if that really is difficult? I mean, it's only 2 light rail cars every 15 minutes. That leaves a lot of time with low/no traffic when people can make a left turn to southbound Downing.</p>	<p>Anticipated increases in traffic on Downing Street due to future growth will likely prevent vehicles from 35th Avenue to make southbound left turns onto Downing without the addition of the Central Corridor Extension. In addition, the proximity of the 35th Avenue stop just south of this intersection, with vehicles moving around stopped trains, may also add difficulty in making left turns.</p> <p>The implementation of the right-in, right-out restriction on 35th Avenue could be potentially deferred to after the line goes into operation.</p>
2	<p>Unknown Comment form submitted at public meeting</p> <p>From a better point of view, I think light rail in Downtown and Downing St rail system it should be underground. This interferes with street traffic, people, street lights, and weather. I understand that it cause a lot of money but in the feature it would save save time, delays, traffic, and frustration. All lightrail should definitely be underground. Denver's a city like cities along the east and west coast how theres is underground.</p>	<p>Even though some operational issues may be avoided, the cost of constructing such a short segment of transit underground far outweighs the benefits that would be provided.</p>
3	<p>Carla Madison 2713 Welton Street Denver, CO 80205 Comment form submitted at public meeting</p>	<p>Light rail alignments in the center of Downing Street were eliminated from further consideration because they would significantly interfere with traffic operations in an already complex system where the downtown street grid meets the normal road grid. Removing the left-turn lane does not result in</p>

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	<p>I would like to see the tracks move toward the center of Downing allowing for a more comfortable pedestrian experience along the sidewalks. It seems the reason for pushing the tracks to the side is to allow left hand turns. This seems to be putting the car before the pedestrian experience. I'm sure one or two left hand turns might be needed but overall I'd like to see the tracks not running right along the pedestrian sidewalk.</p>	<p>enough width to provide northbound and southbound tracks or platforms in the center, and therefore would result in additional ROW impacts. The pedestrian environment along Downing Street is not anticipated to be significantly affected since single light rail vehicle operations are arguably considered more pedestrian-friendly than bus. Secondly, the preferred alternative design cross-section enhances this environment by incorporating detached sidewalks. Where provided, parking also buffers pedestrians from adjacent street rail and traffic activity.</p>
4	<p>Keith Pryor 2418 Champa Street Denver, CO 80205 Comment form submitted at public meeting</p> <p>The middle turn lane going down Downing needs to be removed to allow for better sidewalks and the complete streets movement to be implimented the street cars need to be in the center away from pedestrians and thought needs to be given to all modes, walking bikes and transit not just the car. Get rid of the turn lane - better street scape, bike lanes, and better pedestrian experience.</p>	<p>Light rail alignments in the center of Downing Street were eliminated from further consideration because they would significantly interfere with traffic operations in an already complex system where the downtown street grid meets the normal road grid. Removing the left-turn lane does not result in enough width to provide northbound and southbound tracks or platforms in the center, and therefore would result in additional ROW impacts. The pedestrian environment along Downing Street is not anticipated to be significantly affected since single light rail vehicle operations are arguably considered more pedestrian-friendly than bus. Secondly, the preferred alternative design cross-section enhances this environment by incorporating detached sidewalks and parking (where provided) which buffers pedestrians from adjacent street rail and traffic activity.</p>
5	<p>Juana Gonzalez 3553 Lafayette Street Denver, CO 80205 Comment form submitted at public meeting</p> <p>What will be the impact (negative) of this corridor in my neighborhood?</p>	<p>A listing of impacts is provided in the Summary section of the report.</p>
6	<p>John Hayden 2418 Champa Street Denver, CO 80205 Comment form submitted at public meeting</p>	<p>RTD will continue to coordinate with CCD regarding pedestrian crossing options in the 36th and 38th Street vicinity as part of the East Corridor project.</p>

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	<p>I think it's essential that the pedestrian bridge be moved to 36th to connect River North to Cole along 36th. 38th is a very bad street for pedestrians 36th is much better.</p> <p>In the future please consider converting Welton to a 2 way street with a double track down the center. Also consider linking this street car to proposed Colfax street car along Downing or Park Avenue.</p>	<p>Conversion of Welton Street to 2-way traffic operations is outside the scope of this study. Light rail alignments in the center of Welton Street would interfere with traffic operations and converting enough roadway width to provide northbound and southbound tracks and platforms in the center would result in the need for additional ROW.</p>
7	<p>John Hayden 2418 Champa Street Denver, CO 80205 Comment form submitted at public meeting</p> <p>Get rid of Park and Ride Facilities along Welton and at 30th and Downing and turn them into TOD developments</p>	<p>As RTD's system of transit facilities expands and ridership distribution and access changes, conversion of existing park-n-Ride facilities for potential TOD use, such as at 30th and Downing, may be considered in the future.</p>
8	<p>Guadalupe Ehavarria 4443 Sherman Street Denver, CO 80216 Comment form submitted at public meeting</p> <p>How is Central Corridor going to impact my neighborhood 45th & Sherman?</p>	<p>The Central Corridor Extension will not affect the Globeville neighborhood surrounding 45th and Sherman.</p>
9	<p>Clementina Carmona 3454 Downing Street Denver, CO 80205 Comment form submitted at public meeting</p> <p>Can you move the station at 35th & Downing to a business area because it is going to cause noise in my property. Is there another option to mitigate noise? I have a concern with the trash that people will leave in front of my property where the stop will be.</p>	<p>The stop at 35th and Downing was chosen to provide a logical point for local neighborhood access to the transit system. Even though noise increases will occur with the Central Corridor Extension, they are not anticipated to be in the severe category which would require mitigation. Current maintenance practices will be applied at the stop for trash removal.</p>
10	<p>Unknown Comment form submitted at public meeting</p> <p>Thank you. Please start later. It is very difficult to get here in time for presentations</p>	<p>Thank you for your comment.</p>

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Stakeholder comments		
11	<p>Imogene Tassian Sharing and Caring Ministries 3739 Downing Street Denver, CO 80205 Comment form submitted via regular mail</p> <p>So far I'm in favor of Fastracks but it certainly create a parking problem and I not sure how we can supplement. We are on 37th & Downing & Walnut and high concern about this area. We'll be inquiring to find alternative. We ask for suggestions.</p> <p>Will there be parking provided for those who park n Ride?</p> <p>Perhaps we could use those spaces on event.</p>	<p>Parking for the CCE north end of line will be provided by the East Corridor 38th and Blake station; 200 spaces when the park-n-Ride opens and 300 more by 2030 as demand increases.</p>
12	<p>Peter Widhalm 3860 Vrain Street Denver, CO 80212 Comment form submitted via website</p> <p>I am totally flabbergasted that you idiots think it is ok to completely inhibit traffic on Downing Street when you would not seriously consider street car service, leaving an open traffic lane in both directions, on W. 38th Ave. for the Gold Line.</p> <p>Your selected plan for the Gold Line is absurd since it makes it much more difficult for people to walk to the stations to get service.</p>	<p>Each project that considers streetcar as an alternative must take into account various factors. The primary deciding factors in this project were traffic versus property impacts. An alternative with dedicated ROW for transit would have resulted in approximately 40 parcel acquisitions as well as associated business relocations. The traffic analysis included in Chapter 4 shows that there are no significant traffic impacts to traffic flow with the implementation of the Preferred Alternative, including associated mitigation measures. The short length of the CCE also makes the use of shared travel lanes appropriate because transit will not experience significant delays as a result of traffic operations or congestion.</p>
13	<p>Bryon Pigott 510 25th Street Denver, CO 80205 Comment Form submitted via website</p> <p>The station spacing in this plan continues a series of bad decisions for the entire corridor - WAY too many stations close together.</p>	

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	<p>What is the benefit of stations at 33rd and 35th when you could do one at 34th (Bruce Randolph)? It only adds 1/2 block walk to some riders, saves money, and makes the RIDE experience more pleasant with less stops bunched together. It also creates MUCH more of a "center" of activity rather than diffusing the impact of stations in the neighborhood.</p> <p>On that note, RTD should consider dropping the 29th Street station altogether as it is literally around the corner from the 30th station as well as the 27th St. station as both makes for an excruciatingly slow ride without adding to the community. Again, 5 block spacing would make the remaining stations much more of a community destination and center.</p>	<p>During the early stages of analysis only one stop was originally considered between the 30th/Downing and 38th/Blake stations due to space limitations along the corridor using the three-car train alternative at that time. When the shift to a single-car train alternative was made, community support for more local access at both 33rd and 35th Streets could be accommodated and was therefore incorporated into the Preferred Alternative design.</p>
14	<p>Warren Gregoery 325 SE Rachal lane Bartlesville, OK 74006 Comment Form submitted via website</p> <p>As a Denver area native and someone who now live out of state but soon plans to move back to central Denver, I wish to make a comment. I recently read about them moving forward about looking into a Colfax Streetcar Line. Then I see this Central Corridor Connector is going to be streetcar-like and use single light rail cars. Why not end the full light rail line at the downtown loop? Have this Connector run down Broadway/Lincoln to Civic Center Station, where in the future it could continue on down Colfax, Speer and even Broadway to I-25 station. This would be a perfect starter line for a streetcar system with it's hub being at Civic Center Station. Lets bring it on down to Civic Center Station, it's a perfect idea.</p>	<p>The change in routing the Central Corridor Extension into the downtown loop rather than the Civic Center alternative was made for two primary reasons: 1) better operations in connecting passengers to downtown Denver and other existing light rail lines, and 2) a requirement to meet the project budget by reducing the amount of new track construction.</p>
15	<p>Joel Noble 2705 Stout Street Denver, CO 80205 Comment form submitted via website</p> <p>Comments: Here is a collection of miscellaneous observations / corrections / edits for the Central Corridor Draft EE.</p> <p>Page i (entire references section)</p>	<p>The References section is documented in APA style. In APA style, when the publisher is also the author, the style requires "Author" be put where the publisher's name would go.</p>

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	<p>Fill in "Author" on each line, or omit</p> <p>Page 2-3 Welton Street "Typical Section" is not a typical section of Welton. Typically on Welton Street there is parking on both sides of the street, plus the traffic lanes and light-rail. The illustration seems to reflect the arrangement near the 29th Street rail station, where parking is not present on the southeast side of the street.</p> <p>Page 3-15 Some schools are missing from the diagram, including Denver Public Schools such as Ebert. Also the southernmost recreation center icon is almost certainly misplaced. There may be other errors, but it's hard to tell without labels.</p> <p>Page 3-32 The omission of the Curtis Park Neighborhood Plan (1987) is unexpected. As the current adopted plan for the Curtis Park Neighborhood, its consideration is quite relevant. I believe the Central Corridor Extension, as designed, is compatible with that plan.</p> <p>Page 4-13 The preferred alternative for traffic control at the intersection of Arapahoe and Downing is not specified -- unlike all other streets, Arapahoe is not mentioned.</p> <p>Page 4-21, 4.3.1.6 The first paragraph indicates that 35 parking spaces would remain along Downing Street. Yet the maps on pages 2-23 through 2-25, which denote parking spaces with small white rectangles, only depict 26 parking spaces. If the maps' depiction is correct, does the analysis need to be revisited regarding whether or not the existing structures on Downing will have adequate parking after so much parking is removed? (There are other references in the document to the change in on-street</p>	<p>The graphic notation has been amended.</p> <p>The graphic has been corrected.</p> <p>Table 3.4-1 has been revised to include the Curtis Park Neighborhood Plan.</p> <p>The document does not reference intersections along the Central Corridor Extension where the traffic control and vehicle movements remain unchanged between existing and preferred conditions. Arapahoe Street is an example of an intersection where the Preferred Alternative does not make a change in the traffic control or vehicle movements. The documents has been updated to better summarize the conditions.</p> <p>The text has been updated: 26 parking spaces are anticipated. As mentioned in the document, parking needs can be accommodated on adjacent roadways near Downing Street without the need to add specific parking improvements as part of the project.</p>

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	<p>parking spaces that should also be reviewed for consistency with the final design.)</p> <p>Page 4-26 and Page 4-37 The RTD bus maps should be reviewed for accuracy. For instance, they show the 38 bus operating only on California Street, when it actually operates on both California and Stout in the Curtis Park neighborhood.</p> <p>Thank you,</p> <p>Joel Noble jnoble@frii.net</p>	<p>The graphics have been corrected.</p>
16	<p>Curtis Park Neighborhood Association 2655 Stout Street Denver, CO 80205 Comment submitted via emailed letter</p> <p>Central Corridor Extension Project Team c/o PBS&J 4601 DTC Boulevard, Suite 700 Denver, CO 80237 Attn: Central Corridor Extension Draft EE</p> <p>Subject: Curtis Park Neighbors Feedback and Questions on RTD FasTracks Central Corridor Extension Environmental Evaluation</p> <p>In reviewing the draft of the Central Corridor Extension Environmental Evaluation, Curtis Park Neighbors has developed the following feedback and questions. We request answers to each of the questions. If clarification is needed on these items, please contact us at curtis-park-neighbors-board@googlegroups.com so that we all have the best possible result from this process.</p>	
	<p>Frequency Commitment Please confirm for us that the service frequency for the central corridor after the</p>	<p>Commitment to a 15-minute service frequency is based upon the best available current information. Schedule adjustments</p>

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	<p>extension is built out and is in operation will be substantially similar to the service frequency existing today.</p> <p>We currently have 15-minute service, and would like to be assured that service will not become less frequent after this rail section is no longer part of the “D” line. (Table 2-1 on page 2-16, which has been presented on posterboards at many public meetings, portrays that service will have 15-minute service.)</p> <p>If notable service frequency changes can be anticipated compared to current operations, please explain what those changes are expected to be.</p>	<p>for all RTD transit routes are undertaken periodically due to ongoing changes in ridership, operations, and traffic conditions, among others. Periodic schedule adjustments may be made through RTD's standard public process.</p>
	<p>Scheduled Service, Not Headways</p> <p>Please confirm for us that service on the Downing/Welton/Downtown Loop central corridor will continue to operate on a published schedule. We believe that approximately 15-minute service is not frequent enough to warrant “going scheduleless” with headway times instead of actual schedules (as is done with the 16th Street Mall Shuttle). Riders looking to make transfers will be best served by continuing with published schedules as is done today.</p> <p>This topic does not appear to be addressed specifically the EE draft, but page S-5 has the parenthetical “(15-minute headway),” and several places in chapter 4 use the term “15-minute headways,” possibly suggesting that a change from scheduled times to headways may be in the works.</p> <p>If this topic is outside of the scope of the EE, please have someone from RTD operations respond to the best of their ability.</p>	<p>The Central Corridor Extension will operate on a published schedule.</p>
	<p>Risk for Continued Single-Track Timing Issues</p> <p>Today, it is common for the “D” line coming north in the afternoons to run behind schedule to the point where the southbound train leaving from 30th/Downing must enter the extended single-track section of Welton Street prior to the northbound train traversing that segment as scheduled. The northbound train must wait at approximately 24th Street (by the library) for up to seven minutes before the single track section clears. This exacerbates the delay for northbound passengers who fall ever farther behind in making their connections and reaching their destinations.</p>	<p>The proposed operating plan for the Central Corridor Extension will help to reduce delays at the single track section along Welton Street. The D-Line will no longer operate along Welton Street and a new light rail line will operate between Downtown Denver and the East Corridor. This new route will be timed where the passing of the northbound and southbound trains will occur beyond the limits of the single track segment and there will be enough recovery in the schedule whereas a delay within the Downtown loop or along Downing Street will not</p>

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	<p>Because the Downing/Welton/Downtown Loop central corridor will no longer be part of the “D” line, the opportunity for delay should be significantly reduced, as the overall route is significantly shorter. Additionally, the project team has explained to the public that planned layover times between runs are designed to keep departures on schedule despite typical timing variability in actual operations.</p> <p>Nevertheless, can you please describe for us, based on your timing analysis:</p>	<p>create delays at the single-track section.</p>
	<p>How much delay time (compared with schedule) can accumulate in a train’s run from 38th/Blake to the Downtown Loop and back to 24th and Welton before it is too late to enter the single-track section and must wait for the next southbound train to clear that section before proceeding?</p> <p>Will a southbound train on the Downing/Welton/Downtown Loop central corridor be able to proceed on 19th Street across California and thus enter the Downtown Loop with the traffic signal whenever it arrives, or will it have to linger between California and Broadway to meet a scheduled entry time?</p> <p>(We know that the Downing/Welton/Downtown Loop central corridor train can wait on 19th between California and Stout until the 18th/California station clears, unlike other longer trains. But what we don’t know is if a previous waiting point before entering the downtown loop will be required as well.)</p> <p>If there may be a requirement to delay before entering the downtown loop (from the previous point), does that mean that delays on the light rail runs from the southeast and southwest lines (D, F, and H) will translate to delays on the central corridor due to interactions entering the downtown loop? And if that is true, can you estimate the likely range of those delay impacts to the Downing/Welton/Downtown Loop central corridor trip? We would like to understand if these sorts of interactions may lead to delays which return us to the current situation where northbound trains often must wait for a southbound train before entering the single-track section on Welton.</p>	<p>Current analysis suggests that there is approximately five minutes of delay that could accumulate in a train’s run time before a northbound train would be delayed by a southbound train entering the single track section. RTD anticipates that there will be enough recovery time in the schedule to make up that five minutes before such a delay would actually occur. Additional operations and travel time analysis will be conducted during Final Design.</p> <p>A southbound train from the Central Corridor Extension should be able to proceed to the Downtown loop without delay unless the train must wait for a delayed southeast or southwest train to clear the 18th/California Station. Additional operations analysis and scheduling will be conducted during Final Design.</p> <p>As noted above, the Central Corridor Extension trains should not be delayed when entering the Downtown Loop. additional operations analysis and scheduling will be conducted during Final Design.</p>
	<p>Once again, if this topic is outside of the scope of the EE, please have someone from RTD operations respond to the best of their ability.</p>	<p>RTD will continue to coordinate with CCD on these issues during Final Design.</p>

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	<p>Pedestrian Buffer from Moving Traffic on Downing It is widely known and accepted that pedestrians are more comfortable when there is a “buffer” between themselves and moving traffic. These “buffers” are typically on-street parking, tree lawns, parking meters, etc. Looking forward to redevelopment on the east side of Downing, which is designated for “mainstreet” development patterns, we are interested in opportunities to preserve and improve the pedestrian experience along that corridor.</p> <p>Unfortunately, with the removal of all of the parking from the east side of Downing, an important element that gives pedestrians a sense of protection from moving traffic has been eliminated. Most areas still appear to retain a tree lawn between the sidewalk and the street (based on a close inspection of pages 2-23 through 2-25).</p> <p>We ask that you collaborate with the City of Denver’s Community Planning and Development and Public Works staff members to explore if reasonable modifications could be made to improve the pedestrian experience on Downing in this regard, without compromising the streetcar ridership experience or streetcar operations.</p>	
	<p>Right Turns In Front of Streetcar Stops What will be done to mitigate any safety concerns with autos turning right in front of streetcar vehicles which are departing their stops at 33rd/Downing and 35th/Downing? (This situation is illustrated by the little blue car cutting in front of the streetcar in each of the illustrations on page 2-26.)</p>	<p>This situation is similar in some respects with operator practices on Welton Street with vehicles making turns in front of trains. RTD will continue to coordinate with CCD on these details during Final Design.</p>
	<p>Incorrect Existing Land Use Map in Curtis Park Area The “Existing Land Use” map on page 3-31 (figure 3.4-2) is completely wrong. It appears to be a minor reworking of the “Existing Zoning” map from the previous page. Perhaps someone made the assumption that the existing zoning map translated well enough to existing land uses, but this is not the case. In particular, a large portion of the residential Curtis Park neighborhood is zoned “B-8”, but yet is residential in predominant land use.</p> <p>The City of Denver’s Community Planning and Development department should be able to help with a corrected map of land use based on summarized/simplified categories from the Assessor’s office.</p>	<p>The graphic has been corrected.</p>
	<p>Stout Conversion to Two-Way The City of Denver has agreed that the conversion of the residential streets through</p>	<p>Since there is no timeframe, plans for a potential two-way conversion of Stout Street were not included in the report</p>

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	<p>Curtis Park to two-way is desirable, following a series of studies, the most recent of which is the Fehr and Peers study from 2001 (as cited in the EE's references). Based on this direction, California and Lawrence streets have already been converted, and Stout's two-way conversion has been on the multi-year capital improvement plan. While there is no timeframe set yet, Stout is expected to be converted in the coming years – and it may save re-work to do so in coordination with FasTracks work on Downing.</p> <p>Despite the project team being aware of this direction (both having reviewed the Fehr and Peers 2001 study, and by numerous public comments reminding your team of the planned conversion of Stout to two-way operation over the past several years), Page 4-11 shows a one-way Stout street as both the present and future arrangement.</p> <p>We are concerned that important opportunities may be missed to plan the implications of two-way Stout Street operations, and to coordinate work with Denver to avoid future re-work.</p>	<p>based upon consultation with CCD staff. No design changes to the Preferred Alternative would be anticipated if this conversion were implemented in the future.</p>
	<p>Construction Schedule</p> <p>Anyone who reads the news knows there are challenges and unanswered questions regarding the construction schedules for all of the RTD FasTracks corridors and projects. However, we would like to confirm that the plan and intention is for construction of the Central Corridor Extension to be timed such that it opens at the same time as the East Corridor line. This makes particular sense as they will share the 38th/Blake station, and coordinated construction would avoid future disruption at that station.</p> <p>Thank you for your attention to these items, Curtis Park Neighbors</p>	<p>RTD's intent is to proceed with construction of the two corridors concurrently. This will be dependent upon the resolution of the noted financial issues.</p>
Agency Comments		
17	<p>Pamela Fischhaber Public Utility Commission 1560 Broadway, Suite 250 Denver, CO 80202 Comment submitted via mailed letter</p>	

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No.	Comment*	Response to Comment
	<p>RTD FasTracks Team Mark Baudermann, Project Manager, Central Corridor Extension 1560 Broadway, Suite 700 Denver, CO 80202</p> <p>RE: Central Corridor Extension Draft Environmental Evaluation</p> <p>Dear Mr. Baudermann:</p> <p>Staff of the Colorado Public Utilities Commission (PUC) has reviewed the Central Corridor Extension Draft Environmental Evaluation (DEE) and has the following comments:</p> <p>1) The PUC has jurisdiction in Colorado to determine all public highway-rail crossing matters including the proper location of crossings and the proper safety measures for a highway-rail crossing. The Central Corridor Extension will be a special situation in which the entire extension will need an application and approval from the PUC given that vehicles and rail transit are proposed to use the same corridor. Although the DEE may make certain recommendations regarding the proposed number of crossings and configuration of highway-rail crossings and travel lanes for the Central Corridor Extension, the PUC is not bound by these recommendations and may order a different number and/or configuration of the crossings/lanes than those proposed in the DEE once the applications for these crossings and corridor have been filed.</p>	<p>The Central Corridor Extension acknowledges that the PUC is not bound by recommendations proposed in the EE and may require different configurations at crossing during final design.</p>
	<p>2) Section 3.12 of the DEE cites to a PUC rule that has not existed for approximately four years. The DEE should be updated to cite to the current PUC rule regulating rail fixed guideway systems.</p>	<p>The document has been changed to reflect the new rule: Rule 4 Code of Colorado Regulations 723-7, Part 7 Rules Regulating Railroads, Rail-Fixed Guideways, Transportation by Rail, and Rail Crossings.</p>
	<p>3) The DEE discusses that the current RTD light-rail line will terminate at the 30th and Downing Station with the proposed in-street rail transit beginning at this point. Transfer from light-rail to in-street rail transit would occur at this station. However, no figures were provided in the DEE (similar to Figures 2-25 and 2-</p>	<p>The fact that there is no transfer of rail operations has been clarified with the commenter.</p>

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	<p>26 showing the proposed stops at 33rd/Downing and 35th/Downing respectively) showing the proposed configuration of this station to accommodate the two different methods of transit. Additionally, the DEE provided no discussion of how operations of the two different methods would occur, such as how will the new in-street rail transit vehicles turnaround from southbound to northbound operations. Have the operations at the 30th and Downing station been determined, or is there a figure available that would show the proposed operations? This would be useful information for the Environmental Evaluation.</p> <p>If you have any questions regarding my comments, please feel free to call or email me. I can be reached by phone at 303-894-2529 or by email at pamela.fischhaber@dora.state.co.us.</p> <p>Sincerely,</p> <p>Pamela M. Fischhaber, P.E. Chief of Rail/Transit Safety and Water</p>	
18	<p>Sharon Terranova Denver Regional Council of Governments (DRCOG) 1290 Broadway Denver, CO 80203 Comment form submitted via website</p> <p>Comments: Page 2-27 Operating Plan If expansion capacity for projections beyond 2030 would need to be accommodated during peak hours with longer trains rather than higher frequencies, assuming the section of Welton Street remains single track, platform extensions will be required to accommodate the increased consist length. There doesn't appear to be enough street frontage to accommodate a two-car platform for the southbound train between Lawrence Street and Arapahoe Street. (See Figure 2-26.)</p> <p>Chapter 4 Transportation System Comments from DRCOG's Traffic Signal Engineer have been forwarded to the Signal Group in Traffic Engineering Services at the City and County of Denver for consideration since they are ultimately responsible for the operation, maintenance and installation of traffic signals on city streets.</p>	<p>The EE has evaluated the necessary improvements for the CCE to accommodate projected ridership through the year 2030, which indicates a single car train will be sufficient to meet the demand. The expansion of the station at 35th/Downing could have an impact to adjacent driveways/alleyways. Should the corridor require expansion to provide 2-car train service in the future, RTD will coordinate with the CCD and the property owners to develop an appropriate solution at this location.</p>

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19	<p>City and County of Denver 201 West Colfax Avenue Denver, CO 80202 Comment submitted via email</p> <p>Central Corridor Extension Environmental Evaluation City and County of Denver Comments</p> <p>Summary The City and County of Denver supports the establishment of streetcar-type service between the existing 30th and Downing station and the proposed 38th and Blake station. The Central Corridor Extension will connect the Central Corridor to the East Corridor, benefitting the users of both of these transit lines and the surrounding neighborhoods. The list of comments that follows was generated by City staff from Community Planning and Development, Public Works Policy and Planning, Public Works Traffic Engineering Services, Public Works Development Engineering Services, and Environmental Health. The City and County of Denver requests that these comments be considered and addressed as RTD proceeds with the Environmental Evaluation process and initiates additional design work on the Central Corridor Extension. Additionally, it is important to note that Public Works Traffic Engineering Services will soon be kicking off a transportation operations study in this area (commonly referred to as the 38th & Blake Next Steps Study), and that new information will be produced by that study that could affect the Central Corridor Extension.</p>	<p>RTD will continue to coordinate with CCD throughout the 38th & Blake Next Steps Study analysis.</p>
	<p>Community Planning and Development Comments</p> <p>1. We are concerned with the potential for motorist confusion with an unfamiliar street cross section and mixed traffic condition.</p> <p>a. Because the shared transit/vehicular condition does not occur anywhere else in the city, motorists may be unsure of where they are expected to drive, particularly since vehicular traffic in the adjacent downtown core is very intentionally separated from in-street transit. Temporary educational/familiarization outreach will be necessary, as will permanent signage advising motorists of the mixed traffic condition.</p>	<p>RTD will continue to coordinate with the CCD regarding an educational safety campaign prior to operation.</p>

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No.	Comment*	Response to Comment
	<p>b. In order to accommodate wider transit vehicles, and to allow motorists to ‘split’ the transit track instead of driving directly on the rails, the shared transit/vehicular lane is wider than normal. This width, combined with the confusion noted in item ‘a’ above, may lead some motorists to believe that the combined lane is in fact two lanes, causing them to drive alongside a transit vehicle. This confusion could also lead to unsafe motorist behavior when a transit vehicle is NOT present, with vehicles occupying what is perceived as two narrow lanes. Such a condition could lead to conflict when encountering opposing turn lanes, actual passing lanes, on-street parking, or pedestrian crossings. Clear, permanent signage and a public education program will be necessary.</p>	<p>RTD will continue to coordinate with CCD on these issues through Final Design.</p>
	<p>2. There is an opportunity to improve pedestrian safety at the Curtis/Downing pedestrian crossing by providing a larger center-of-street pedestrian refuge. The southbound left turn storage lane on Downing could be reduced in length, beginning south of the pedestrian crossing. In tandem with this lane shortening, the center-of-street pedestrian refuge could be widened.</p>	<p>RTD will continue to coordinate with CCD on these issues through Final Design.</p>
	<p>3. As an un-signalized intersection with potentially poor sight lines when a train is stopped at the station, the intersection of 33rd Ave & Downing may pose greater-than average accident risk for northbound cars on Downing, and for westbound cars on 33rd Ave executing a southbound turn. We recommend that three possibilities be considered:</p> <ul style="list-style-type: none"> a. remove the northbound passing lane at the transit station b. shift the transit station on the east side of Downing to the south to improve sight lines c. redesign 33rd Ave as a right-in-right-out only at Downing. 	<p>Chapter Four, Transportation Systems, recommendations included a redesign of the 33rd and 35th Avenue intersections as a right-in/right-out movement only. The other alternatives noted in this comment could also be evaluated during Final Design.</p>
	<p>4. We have similar concerns at the 35th Ave & Downing intersection, for the same reasons of it being an un-signalized intersection with potentially poor sightlines when a train is present. We recommend that three possibilities be considered:</p> <ul style="list-style-type: none"> a. remove the northbound passing lane at the transit station b. shift the transit station on the east side of Downing to the south to improve sight lines c. redesign 35th Ave as a right-in-right-out only at Downing. 	<p>Chapter Four, Transportation Systems, recommendations included a redesign of the 33rd and 35th Avenue intersections as a right-in/right-out movement only. The other alternatives noted in this comment could also be evaluated during Final Design.</p>

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	<p>5. Arapahoe Square has been identified by the City as a redevelopment priority. An additional station within Arapahoe Square could promote and contribute to the attractiveness of this area for development, and enhance the transportation options of current and future residents. An additional station at 22nd or Park Avenue would be spaced approximately 2 blocks from existing stations at 20th & Welton and 25th & Welton. This spacing would align with current spacing along the Welton/Downing corridor, and would align with RTD's operating plan to run the Central Corridor Extension as a streetcar system. Please provide clarification on RTD's policy for adding infill stations on existing transit lines. What criteria are considered for adding new stations and funding their construction?</p>	<p>Any new stations proposed on the RTD system would need to be reviewed by the RTD Board under its Rapid Transit Station Addition Policy (adopted by the Board – 2003, revised June 15, 2009) . The policy covers various criteria related to capital costs, operational costs, travel time, community support and other items. A staff analysis would need to be conducted on these criterion and presented to the Board for their consideration. The ultimate decision to add a new station rests with the Board and they could choose to consider other issues not addressed in the station addition policy in making their final decision.</p>
	<p>6. The Central Corridor tracks turn into the 38th/Blake station at the intersection of 36th Street and Blake Street. This turning movement intersects with a pedestrian crosswalk across Blake Street. The EE should address this condition, including the likely need for the signal at this intersection to be phased so as to avoid the situation where pedestrians have a light rail vehicle approaching from behind and crossing their path on a green light.</p>	<p>The figures in the document are schematic and are not intended to reflect final design details necessary to construct the project. RTD will continue to evaluate all crosswalks during the final design portion of the CCE to ensure that pedestrians are provided the safest possible means to cross the roadways and trackways. At this particular location it is likely that the crosswalk on the northeast side of the 36th/Blake intersection will be angled to the northeast so the tracks and crosswalk do not intersect.</p>
	<p>7. The design of the 38th & Blake station is not addressed by this EE, presumably because station design was already addressed by the East Corridor EIS. That EIS, however, did not directly address pedestrian movement at the station, specifically rail-to-rail transfers between the East Corridor and the Central Corridor. This transfer movement is a key issue for the Central Corridor, as this EE assumes that the East Corridor will be built as planned. We request that a plan view diagram of the 38th & Blake station be provided to illustrate pedestrian access to the station as well as pedestrian movements within the station for rail-to-rail transfers. If there are access problems, they will need to be addressed via further coordination between RTD and CCD.</p>	<p>A plan view diagram of the 38th & Blake station to better demonstrate pedestrian circulation was provided to the CCD on 1/22/2010. Further coordination will occur between RTD and CCD during final design.</p>

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	<p>8. The 38th & Blake Station Area Plan (2009) included a concept where the Central Corridor terminus at the 38th & Blake station could be relocated to 36th Street. The EE eliminates this alternative on page 2-20, stating the benefits of providing a direct rail-to-rail transfer at the 38th & Blake station and a desire to minimize potential conflicts caused by pedestrians crossing Blake Street. Although we understand that the 36th Street option may not be the preferred alternative, we would encourage the EE to maintain it as a possible alternative for the following reasons: 1) It has not been demonstrated that the walking distance of a direct transfer at the 38th/Blake station is any shorter than crossing Blake Street at 36th Street. 2) The issue of safety for pedestrians crossing Blake at 36th Street to get to the station is not mitigated by providing a direct rail-to-rail transfer at the 38th & Blake station because 36th Street will still be the primary route to the station for pedestrians from the Cole, Curtis Park, and Whittier neighborhoods. 3) Public Works has yet to complete the 38th & Blake Next Steps study, which may provide further guidance on this issue.</p>	<p>By default, the Preferred Alternative selection process includes the elimination of other options. However, RTD will continue to coordinate with the CCD through final design based on the outcome of the Next Steps Study.</p>
	<p>9. The construction of the Central Corridor will likely result in the reconstruction of Downing, presenting an opportunity to reconfigure overly-complicated intersections such as Stout/Downing, which features two pedestrian islands and cut-throughs to enable vehicles to make free right turns that bypass the traffic signal. We recommend that RTD coordinate with CCD in the future to determine if eliminating the two free rights could simplify traffic movements at this intersection without negatively affecting access to adjacent properties.</p>	<p>The CCE completed the traffic analysis of the planned improvements with minimum recommended changes to the roadway geometry and vehicle movements possible. RTD recognizes that CCD staff has on-going planning and traffic engineering studies in the area of the CCE including the station area at 38th/Blake, which will be making recommendations for improvements to the roadways in and around the CCE study area. RTD will continue to coordinate with CCD to incorporate appropriate changes into the final design.</p>
	<p>10. Champa/Downing is another intersection that could be reconfigured and simplified, subject to future coordination between RTD and CCD. This intersection features a free right segment from Downing onto Champa that could be eliminated.</p>	<p>The CCE completed the traffic analysis of the planned improvements with minimum recommended changes to the roadway geometry and vehicle movements possible. RTD recognizes that CCD staff has on-going planning and traffic engineering studies in the area of the CCE including the station area at 38th/Blake, which will be making recommendations for improvements to the roadways in and around the CCE study area. RTD will continue to coordinate with CCD to incorporate appropriate changes into the final design.</p>
	<p>11. Update the maps on pages 2-25 and 4-16 to show that the tracks for the Central Corridor will feature a crossover at the 38th & Blake station. As shown, it appears that trains would be forced to run in the opposite direction of oncoming traffic on</p>	<p>The figures have been updated to include the planned crossover tracks.</p>

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	the return trip.	
	12. A portion of the Arapahoe/Downing intersection is cut-off between Figures 4-4 and 4-5 (pages 4-15 and 4-15). Please reposition the graphic so that the entire preferred alternative for traffic control at this intersection can be viewed on a single page.	The figures have been revised to provide adequate coverage.
	13. We have concerns about the constraints on expansion of LRT service due to 1) the feasibility of running two-car trains and 2) the operational constraints that are imposed by the single-tracked section of the Welton line between 25th and 30th streets. If the EE will not evaluate the impacts and design for two-car trains, please outline the process for how RTD will work with CCD in the future to address the block segment lengths on Downing Street and signal timing in the Downtown loop. Also, please outline the process for how RTD and CCD can collaborate in the future on designing and constructing a double track on Welton.	<p>Additional coordination will be required between CCD and RTD before 2-car operations would be recommended. A technical memorandum with further information about potential future impacts due to two-car operations was provided to CCD on 1/22/2010. The detailed analysis of 2-car impacts is beyond the scope of this project because ridership projections can be accommodated with one car through the planning horizon year of 2030.</p> <p>Double-tracking Welton Street was looked at during the screening process of this project and eliminated because the anticipated improvements in operations did not outweigh the potential associated impacts to traffic, parking, and businesses.</p>
	14. It seems like a missed opportunity to not have a stop at 14th Street when the streetcar is passing by two major destinations (the Convention Center and Performing Arts Center). Are there other turnaround and/or stop locations that could be considered to provide service to 14th Street?	There are no turnaround locations that could provide direct service to the Theatre District/Performing Arts Station from the Central Corridor Extension. The closest turnaround location is the I-25/Broadway Station but due to the peak period frequencies of the Southeast and Southwest Corridor light-rail lines, turning trains continually at this location would be problematic.
	15. Do the white boxes shown at the edge of the street on figures 2-22 through 2-24 and 4-2 through 4-7 represent proposed on-street parking? If so, the number of boxes shown does not match up with the number of on-street spaces that will be preserved according to section 4.3.1.6.	The text has been updated: 26 parking spaces are anticipated. As mentioned in the document, parking needs can be accommodated on adjacent roadways near Downing Street without the need to add specific parking improvements as part of the project.
	16. The proposed Central Corridor Extension lies wholly within an 'Area of Change', as designated by Blueprint Denver. As such, both sides of the roadway have the potential for future redevelopment that could benefit from on-street parking. The grid intersection along Downing Street, however, results in shorter, more irregular	RTD will continue to coordinate with the CCD on these issues through final design.

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	<p>block lengths on the west side of the roadway. The western blocks also tend toward odd sizes and configurations that will be a challenge for redevelopment. It is recommended that on-street parking be moved from the west side of the street (as identified in the EE document) to the east side of the street, in order to serve the more-likely-to-redevelop blocks on the east side of the roadway. It is also anticipated that this configuration will result in more on-street parking spaces, due to the longer block lengths.</p>	
	<p>Public Works Policy and Planning Comments</p> <p>1. The Environmental Evaluation does not identify the length of the line and all of the graphics state they are not to scale. Other documents indicate the extension will be 0.8 mile long (1.6 lane miles). At a capital cost of \$67.3 million, a cost estimate for this project would seem to be \$42.06 million per lane mile. This cost seems relatively high for this type of project. The EE should explain the cost estimate in detail, and the estimated cost should be incorporated into a discussion of the need for funding and the options available for securing that funding.</p>	<p>The decisions regarding funding options for this project are being made outside of this study at the FasTracks program level.</p>
	<p>2. The base map, which is repeated for the entire document, misidentifies Sherman Street as Grant Street.</p>	<p>Graphics have been corrected.</p>
	<p>3. The City and county of Denver (CCD) reserves the right to retain Larimer Street as a one-way from Downing to 35th Street. CCD anticipates continuing to work with RTD as traffic operational concepts are refined.</p>	<p>The EE and associated analysis have been revised to reflect CCD's desire to leave Larimer Street between 35th Street and Downing Street as one-way. RTD will continue to coordinate with CCD regarding traffic operations through final design and construction.</p>
	<p>4. Throughout the EE, the impact analyses state that the No Action Alternative would have no impacts, or that the primary impacts are characterized by the lack of benefits that would have resulted from the implementation of the preferred alternative. The impacts of no action need to be explained better. Taking no action on the preferred alternative should not be construed to mean that all other conditions stay static.</p>	<p>No Action alternative analyses for many of the topical areas discussed in Chapter 3 (such as Regional economic conditions, Historic, Visual and Aesthetic, Noise/Vibration, Energy) result in little or no impact due to the established inner city nature of the corridor within the overall project study area. A more representative condition (Transportation) which does not remain static under the No Action is discussed separately in more detail in Chapter 4.</p>
	<p>5. Page 3-22, paragraph 2 states that, while there would be no disproportionate impacts to low income or minority populations in the study area, these populations would not benefit from increased jobs or redevelopment resulting from the No Action Alternative. However, page S-3, second paragraph, states that the project</p>	<p>The text has been changed to correct this inconsistency. All populations will benefit from increased jobs and redevelopment in the No Action Alternative</p>

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	area is experiencing rapid growth and redevelopment. The discussions need to be corrected.	
	6. Page 3-35, Table 3.4-2 identifies broad land use changes in the study area since 1950, but does not discuss them or really what they mean, or why they may provide a good or bad base for the proposed project. It would seem the project could affect land use in some way other than just the possibility of transit oriented development (TOD) at the 38th/Blake station.	The broad land use trends identified in Table 3.4-2 cover a much larger regional context as identified in Figure 3.4-3 than the immediate CCE project study area.
	7. Page 3-37, Table 3.5-1 shows numbers of jobs by employment sector and the earnings associated with those jobs for Denver County and the Denver PMSA. Presumably, dividing the earnings by the number of jobs for a sector should give the average income by individual in that sector. The numbers seem to indicate extremely low incomes. The Denver County totals indicate 549,040 employees earn \$8.9203 million, or \$16.24 per person. The table and its values should be confirmed.	Information within this table has been updated to 2007 data, which corrected the noted inconsistencies.
	8. Page 3-38, last paragraph refers to three geographic areas. Two areas are discussed and shown in Figure 3.5-2, however. The text should be corrected.	The text has been corrected.
	9. Page 3-45, Secondary and Cumulative Impacts does not discuss the effects of the existing D Line on the economics of the study area, either from a transit project implementation in the study area or existing system that should have an effect on the Central Corridor Extension. These effects should be evaluated.	Since the Central Corridor Extension will continue historic transit operations dating from 1994 within the Five Points portion of the study area, no additional changes to economics are anticipated as a result of the Preferred Alternative. Data regarding development subsequent to the D Line opening has been added to the document.
	10. Page 3-79, No Action Alternative states the No Action Alternative would have no impacts on energy. While this use may not be quantifiable, there would be continued reliance on automobiles and increased use of petroleum-based fuels.	This clarification has been made.
	11. Page 3-79, last paragraph identifies several bases of fuel for electricity, but does not mention a requirement for 20% of Colorado electricity to be provided by wind, solar and other renewable sources by 2020. This discussion should be added.	A statement has been added.
	12. Page 3-80, second paragraph identifies construction of the Preferred Alternative as requiring energy, but does not discuss whether the project would involve construction methods similar to traditional light rail transit or the less-intrusive being used for streetcar system construction. The discussion should recognize the possibility for options.	The text has been revised.
	13. Page 3-102, fifth and sixth paragraphs and Figure 3.11-1 discuss National Priorities List (NPL) sites in the study area. The first reference and the figure reflect active NPL sites, the second reference is to delisted sites. The ensuing discussion	The text was modified to clarify the status of the delisted NPL site. The Vasquez Boulevard and I-70 Superfund site is located on Figure 3.11-1 in the Elyria/Swansea neighborhood as a single

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	<p>does not identify these sites, nor does it describe the contamination associated with them. Table 3.11-2 identifies the Vasquez Boulevard and I-70 Superfund site. The site is not located on a figure and the other NPL sites are not located or identified. This section should be rewritten with consideration of the justifiable concerns the community might have regarding disturbance of areas that are sufficiently contaminated to rate listing on the NPL, which is a more significant classification than guiding “EPA in determining which sites warrant further investigation (page 3-23, fifth paragraph). Site locations, contaminants and a clear assessment of current conditions should be provided. The mitigation measures should then be reassessed and made more specific to this project.</p>	<p>dot, but as noted on page 3-108, it is actually a 4.5 square mile area that only partially overlaps the Central Corridor Extension project area. The other NPL site includes multiple locations and Figure 3.11-1 was revised to show only a single icon for the listing at the location closest to the Preferred Alternative to avoid confusion. The environmental management plan required during final design will outline the more detailed mitigation specific to the project.</p>
	<p>14. The Cole Science and Arts Academy is located east of the corridor on Humboldt between MLK Blvd and 33rd Ave. The proposed placement of crosswalks on Downing is such that there is over 500 ft. between the proposed crossing at Curtis/Downing and the southern, existing crossing at MLK/Downing. Because of the long distance between crossings, it is possible that some students will choose to cross Downing between these two crosswalks, especially at 33rd Ave where the school is located. Future guidance from TES will be necessary to ensure that student safety is maintained.</p>	<p>RTD will continue to coordinate with TES.</p>
	<p>Public Works Traffic Engineering Services Comments 1. TES is concerned about the safety of their Signal Technicians working on overhead traffic signals with the overhead catenary lines right next to the signals.</p>	<p>All NCEES clearance requirements will be met during the final design and construction for maintenance access to OCS appurtenances as well as surrounding fixtures.</p>
	<p>2. We are also concerned with the interaction of a separate streetcar line with the other light rail lines in the downtown loop. RTD’s intention is to have 20 trains/hour processed through the downtown loop. How does the streetcar maintain its schedule in mixed flow to arrive at the downtown loop at the correct time? TES’s CBD retiming project is creating a VISSIM model of the light rail system from 7th & Colfax to 30th & Downing. This model also includes the downtown loop. This VISSIM model will be available to use to study this concern. RTD will need to add the streetcar operations to the model to test the operations of the downtown loop. This issue can be delayed until the Central Corridor proceeds to 60% design. At that time, this issue needs to be resolved. RTD's intended frequencies may not be achievable.</p>	<p>RTD will address at 60% design phase, as requested.</p>
	<p>3. The new streetcar will operate as one light rail vehicle with its own line on 15-minute headways. Given the issues with the downtown loop and the single vehicle design, there is no allowance for additional service if the line is successful. The roadway/streetcar operations will not accommodate a 2 or 3 car train and</p>	<p>Increase in demand would be addressed with additional cars on the corridor rather than higher frequency service. Although there are 2- and 3-car trains there now, they are sized for the entire D line corridor, not for the section along</p>

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	frequencies can not be increased without decreasing the frequencies of D-line service into downtown. The proposed service is reduced from the 2 or 3 car train currently being provided to 30th & Downing today.	Welton/Downing. (Current peak line load occurs at Colfax and Auraria), driving the need for longer D-line trains.
	4. Will the light rail/street cars be “street ready” with bumpers, tail lights, and blinkers? The mixed flow operations will result in rear end crashes that currently do not occur with existing LRT line.	Modifications to the vehicles will be determined during final design and implementation.
	5. The light rail vehicle has different acceleration and deceleration characteristics than a car or even a semi-truck. The Synchro model does not reflect these variations.	Light rail vehicle acceleration characteristics are very similar to automobiles, better than commercial vehicles and transit buses, and with only one vehicle every 15-minutes the variations in performance would not show up traffic analysis models.
	6. The Synchro model does not reflect the proper all red intervals that will be needed to clear the light rail vehicle. Longer all red intervals are needed.	All red intervals in the model are consistent with current CCD timing at the Welton/Downing intersection for transit movements. In addition, the transit vehicle movement phase in the CCE Synchro model is 30 seconds (as compared to the existing 22-seconds provided at the existing Welton crossing.)
	7. Proposed cycle lengths of 110, 120 and 150 are longer than is usually experienced by users in Denver, especially on a smaller street like Downing. Can a shorter cycle length work? Cycles above 100 seconds are not likely to be implemented.	RTD will continue to coordinate with CCD staff to ensure traffic signal timing is adjusted to appropriately balance the needs of the automobile, pedestrian, and transit vehicle needs in the future. Efforts to keep cycle lengths as short as possible will be the focus of future signal timing modifications, which may include the need to use advanced or new technology.
	8. Bypass areas around the LRT stops along Downing are a concern. Vehicles going around the LRT when it is stopped pose a conflict when the LRT starts back up and tries to re-enter the traffic stream.	A new law in Colorado requires the traffic to yield to transit vehicles. Special lights and signals will be detailed during later design phases. RTD will also coordinate with CCD staff to make a future determination if the passing lanes can be eliminated and acceptable operations maintained.
	9. Volumes at/on 36th St only account for LRT. Traffic volumes may increase once the station is operational and may attract more volume to the station area. Either 36th St will need to accommodate passenger vehicles or other streets will need traffic volumes revised to accommodate for the increased demand.	Once the development and transportation options around the station are better defined by CCD planning efforts underway, traffic volumes can be revisited.
	10. Intersection with exclusive transit phases will require special intersection/LRT check-in and check-out detection.	The interconnects between the track signal and traffic signal systems will be designed during a later phase.
	11. Depending on future land use 36th and Blake may need an additional phase to accommodate vehicles coming out of the station area side onto Blake or 36th.	Based on the current track configurations for both East Corridor and CCE, as well as the possibility of locating a pedestrian bridge at 36th Street, a vehicular access point as noted is not

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		expected. However, it can be revisited during a later design phase if appropriate.
	12. The striping layout along Downing will need to be reviewed in more detail as the station locations are finalized to determine the most appropriate design at these locations. We have concerns about the operations of vehicles at these station areas and the conflicts between the stations, vehicles, and pedestrians.	All modes of access will continue to be considered as design progresses. The interactions between vehicles and trains along Downing Street will be similar to bus operations where a pullout is provided.
	13. There is not a well defined sidewalk area currently provided between the proposed curb ramp across from Curtis and 33rd Avenue. New sidewalk will be required along this section of Downing Street.	Walk ramps will be detailed during final design. As noted above, the crosswalk at 33rd Avenue would be moved 150' north.
	14. Are the tracks planned to be built in concrete? The roadway sections adjacent to the tracks and all intersections where the track crosses through the intersection will need to be rebuilt in concrete to tie into the new tracks and to allow for future maintenance of Downing Street and the associated intersections.	RTD will continue to coordinate with CCD staff to determine the surface materials to be used for the roadway improvements associated with, and adjacent to, the CCE. The trackway will be concrete; maintenance and cost factors will be weighed in the decision-making process.
	15. The pedestrian crossings at Downing, 30th, California will need to be reviewed in more detail with upcoming designs to determine how pedestrians can cross Downing Street, and California Street, especially the southeast corner of the intersection where the tracks are located.	The figures in the document are schematic and are not intended to reflect the design details of improvements for the CCE. RTD will continue to evaluate the crosswalks at all intersections during the final design portion of the project to ensure that pedestrians are provided the safest possible means to cross roadways and the CCE tracks.
	16. The conceptual curb design currently shown creates a large offset for NB traffic on Downing Street crossing 30th Avenue.	The figures in the document are schematic and are not intended to reflect final design details necessary to construct the project. RTD will coordinate with CCD staff during the final design phase to ensure lane offsets are acceptable. It is possible the northbound approach of Downing Street may need to be shifted slightly to the east with improvements to the curb/gutter/sidewalks in the southeast corner of the intersection in order to eliminate the offset.
	17. Expansion of service from one car to two car trains to maintain level of service based upon public comment will require additional analysis prior to PWTES approval.	RTD will coordinate with CCD staff to complete the necessary analysis if it is determined that service should be expanded to include 2-car trains. The detailed analysis of 2-car impacts is beyond the scope of this project because ridership projections can be accommodated with one car through the planning horizon year of 2030. Final design should accommodate the future expansion with minimal reconstruction after revenue

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		service begins.
	(p.4-10) The comparison between a light rail vehicle and a single unit bus operating in the traffic stream is too optimistic. The operation characteristics and the size of a LR vehicle with the overhead cable with supporting structures are to me significantly different than the bus operations. Making them equal and analyze their "in-traffic" impacts in a "qualitative" approach is perhaps too optimistic and objective.	Light rail vehicle acceleration characteristics are very similar to automobiles, better than commercial vehicles and transit buses, and with only one vehicle every 15-minutes the variations in performance would not show up traffic analysis models.
	(p.4-22) If my understanding is correct, Synchro was used for the analysis noted in this section. To my understanding, Synchro does not have a feature or function for analyzing the impact of LRT operations (not even bus operations) in the traffic stream - need some justification/clarification here.	Light rail vehicle acceleration characteristics are very similar to automobiles, better than commercial vehicles and transit buses, and with only one vehicle every 15-minutes the variations in performance would not show up traffic analysis models.
	(p.4-22) Looking at the projected volumes, traffic characteristics, signal spacing (current and future) etc, the possibility of using 120s or 150s cycle lengths for traffic signals operations in the study area, in my opinion, is highly unlikely. Therefore, the results/comparisons in this section is difficult to accept.	RTD will continue to coordinate with CCD staff to ensure traffic signal timing is adjusted to appropriately balance the needs of the automobile, pedestrian, and transit vehicle needs in the future. Efforts to keep cycle lengths as short as possible will be the focus of future signal timing modifications, which may include the need to use advanced or new technology.
	(p.4-23) For a better comparison, in Table 4-8, suggest to add a column/section between the two alternatives for "mitigated condition w/o LRT" (see Footnote #5)	Because the light rail vehicles will operate similar to automobiles and since there are only 4 trains per hour the analysis without LRT would basically remove 4 vehicles from the traffic stream and the results would be very similar to those shown in the Table for the mitigated conditions. Most of the mitigation measures are not due to the addition of LRT service, but are more related to 20 years of traffic growth along the corridor which result in the need to add turn lanes at intersections.
	<p>Public Works Development Engineering Services Comments</p> <p>1. According to City and County of Denver Storm Drainage Design and Technical Criteria, on site detention and water quality will be required for any disturbed area that is 0.5 acre or larger. A drainage report is required. Hydrological and hydraulic analysis related to any basin and sum condition changes is required. Please also address the street car track drain issues. How does the street drain where the flat track slab is right up against or very near the gutter pan? Is there any area design provision at the low point along the track to let the water in the track go to the storm sewer system? It appears that these areas will pond and create icing issues in the winter. Some measurements to improve the nuisance flow may also need to be</p>	Hydrological and hydraulic calculations as well as drainage details will be provided during Final Design. There are no anticipated changes to any basins or to the overall conditions except some additional pavement for turn lanes and platforms.

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	taken.	
	2. Water quality treatment is required for the entire project site, the proposed impervious concrete foundation may not be a standard City and County of Denver (CCD) and Urban Drainage and Food Control District (UDFCD) approach and may not be used to replace the standard water quality treatment device (Please see the Criteria Manual Vol. 3 of UDFCD). CCD is focusing on the detention capture volume with water quality treatment design. The impervious concrete foundation may be counted as a portion of the water quality credit pending on the design. Furthermore, geo-tech report will be required to support the design with adequate infiltration.	The conversion of asphalt pavement to concrete pavement will not noticeably change the imperviousness of the project area. Surface area is not available for ponds so end-of-pipe treatment may be investigated.
	3. All platform elevations should be 1' above the 100 year storm water surface elevation to meet the building finished floor elevation requirement.	The platform elevations will match existing walks, they aren't occupied structures.
	4. Storm discharge management plans and storm water discharge permits are required per State of Colorado and CCD.	Permits will be obtained.
	5. All the storm and sanitary sewers crossing the track shall be protected per CCD standards. The public storm and sanitary sewer cannot be parallel with and directly under the street car track. Relocation of the sewers will be required. Otherwise, RTD will be responsible for maintenance or for reimbursing CCD due to extra maintenance cost. Easements or an IGA will be required for all public storm and sanitary sewers within rail ROW. Manhole access cannot be directly under the tracks. Eccentric manhole or relocation may be needed for some manholes if there is an accessibility issue.	Coordination with CCD has been conducted and preliminary utility relocation recommendations were agreed to during meetings between the project team and CCD, even though not all will meet typical standards.
	6. All the storm and sanitary sewer improvements, including relocation, replacement, and proposed new sewers, shall be in compliance with CCD master drainage plans and master sanitary plans.	Coordination will continue as the project designs are further developed. RTD will continue to coordinate with CCD regarding planned infrastructure projects in the CCE project area.
	7. RTD will be responsible for Public Utilities Application.	RTD will make the PUC application.
	8. All infrastructure directly related and affected by the streetcar system shall be replaced or built to the current CCD transportation and wastewater standards, such as inlet, storm and sanitary pipe, manhole, tree lawn and sidewalk, curb and gutter, access ramps, street light, streetscape, and others. CCD standard amenity zone is 8' tree lawn and 5' sidewalk. A minimum 5 foot wide pedestrian sidewalk must be maintained throughout the project site without obstructions. All platforms and non CCD standard structures within CCD ROW will require revocable permit(s) (Major Encumbrance Permits). All access points that cross any proposed track will require owner approval prior to full closure.	The roadwork on Downing will be limited to that necessary to construct the project. If CCD plans to improve Downing Street, RTD will coordinate with the City to make the process most efficient for both agencies.
	9. ROW acquisition may be required if there is not enough existing ROW to	See previous response.

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No.	Comment*	Response to Comment
	accommodate the RTD streetcar ROW, CCD roadway, and amenities zone (tree lawn and sidewalk).	
	10. It is not clear whether the 2009 year data used for TIS is newly measured data from the field or is derived from the 2001 year date referenced in the TIS. The new data shall be collected and used for the analysis. A more detailed analysis with the streetcar impact should be performed.	The majority of traffic data used to complete the analysis of the CCE was collected in 2009 and provided to RTD by CCD staff.
	<p>Environmental Health Comments</p> <p>1. In Table 3.11-3 the authors have identified the need for a materials management plan when handling hazardous materials. The authors should also note that a soil characterization and management plan (SCMP) is required. The SCMP details the response for managing asbestos in soil. The absence of a SCMP for the FasTracks West Corridor has delayed construction in the vicinity of Knox Ct to Hazel Ct.</p>	The text has been revised.
	2. Section 3.10 appears to make no mention of local noise regulations. The authors might note that Chapter 36 of the Denver Revised Municipal Code (“Noise Control”) regulates the generation of noise in Denver, including that from construction. An application for variance to the Board of Environmental Health is required to be considered for approval of nighttime construction activities. Additionally, operational issues are likely to be covered by Chapter 36, in cases where they are not already regulated by federal law.	Reference to Chapter 36 of Denver RMC was added under construction impacts.

* Comments recorded verbatim.