

COLORADO DEPARTMENT OF TRANSPORTATION REEVALUATION FORM	Original NEPA Approval Date: December 2009	Reevaluation Date: <i>FEBRUARY 2012</i>	Project Code: <i>NH0361-093</i>
Project Name and Location: US 36 Managed Lane Project: Federal Boulevard To Interlocken Loop With A Potential Extension To McCaslin Boulevard			
NEPA Document Title: US 36 Corridor Environmental Impact Statement/Section 4(f) Evaluation			
Region/Program/Residency: CDOT Region 6/North Program			
Project Description: The US 36 Managed Lane Project consists of one phase of planned improvements identified as Phase 1 of the Preferred Alternative in the US 36 ROD. The Managed Lane Project is a multi-modal toll integrated project that includes improvements to the US 36 corridor from Federal Boulevard to Interlocken Loop as the base project, with a potential extension to McCaslin Boulevard. Primary project elements include the addition of a managed lane in each direction of US 36, replacement, widening or rehabilitation of bridge structures, and construction of portions of a commuter bikeway.			
Project Phasing Plan and Portions Completed (if warranted): This is the first phase of the project			
Portion of Project Currently Being Advanced: This phase is from Federal to Interlocken Loop with a potential extension to McCaslin Boulevard.			
Date(s) of Prior Reevaluations: N/A			

I. Document Type

- Categorical Exclusion (CE)
- Environmental Assessment (EA)
- Finding of No Significant Impacts (FONSI)
- Draft Environmental Impact Statement (DEIS)
- Final Environmental Impact Statement (FEIS)
- Supplemental Environmental Impact Statement (SEIS)
- Record of Decision (ROD)
- Other (such as: local funding, etc.) _____

II. Reason for Reevaluation

- Project is proceeding to the next major approval or action [23 CFR 771.129(c)]
- Project changes such as laws, policies, guidelines, design, environmental setting, impacts or mitigation (describe):
The Managed Lane Project design has been refined to include more details related to drainage design, water quality and detention ponds, the bikeway, culverts, the ingress and egress to the managed lane, the design of the median barrier, and noise and retaining walls. There have been changed conditions, including the addition of the 112th Avenue/Old Wadsworth bridge replacement and approach roads, new adjacent property development, new wetlands, and new hazardous materials sites.
- Greater than three years have elapsed since FHWA's approval of the DEIS [23 CFR 771.129(a)] or FHWA's last major approval action for the FEIS [23 CFR 771.129(b)]
- Other:

III. Conclusion and Recommendation


- The above environmental document has been reevaluated as required by 23 CFR 771.129 and it was determined that no substantial changes have occurred in the social, economic, or environmental impacts of the proposed action that would substantially impact the quality of the human, socio-economic, or natural environment. Therefore, the original environmental document or CE designation remains valid for the proposed action. It is recommended that the project identified herein be advanced to the next phase of project development. A summary of the review is documented in Section IV.
- The above environmental document has been reevaluated as required by 23 CFR 771.129 and it was determined that the environmental document or CE designation is no longer valid or more information is required. Additional required documentation is identified in Section VII.



 Regional Planning Environmental Manager or Designee

Date

1/31/12



 Federal Highway Administration Division Administrator or Designee

Date

2/13/12

IV. Evaluation

- Level 1: Less than three years since last major step to advance the action (e.g. approval of NEPA document, authority to undertake final design, authority to acquire significant portion of ROW, approval of PS&E) and there are no changes in project scope, environmental conditions, environmental impacts or regulations and guidelines.- OR - The document being re-evaluated is a programmatic Categorical Exclusion regardless of time since the last major step to advance the action (as long as the project would still be covered by a programmatic Categorical Exclusion). All decisions in the prior NEPA document remain valid. No FHWA concurrence is required. Note to file and to distribution below.
- Level 2: Less than three years since last major step to advance action and there are only minor changes in the project scope and/or updates or explanation needed for one or more resource areas. FHWA concurrence is required.
- Level 3: More than three years since last major step to advance action and there are only minor changes in the project scope and/or updates or explanation needed for one or more resource areas. FHWA concurrence is required.
- Level 4: Major changes in project scope or environmental commitments, or for EISs when greater than three years have elapsed since the last major project action. Updates or new studies maybe required. A Level 4 Reevaluation may require a separate document. FHWA concurrence is required.

ENVIRONMENT SETTING, AFFECTED ENVIRONMENT, AND ENVIRONMENTAL IMPACT ASSESSMENT:						
Document changes to human, socio economic, or natural environment for environmental setting or circumstances. Document changes in impact status. Place check-mark or description where relevant. Note: this list may be expanded or adjusted to match the headings in the original environmental document reviewed.						
Setting/Resource/Circumstance	Change in Affected Environment or Setting		Change in Environmental Impact		Date Reviewed	Highlight Section VI Additional Studies Required or Section IX Attachments
	Yes	No	Yes	No		
Air Quality	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	September 2011	
Geologic Resources and Soils	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	September 2011	
Water Quality	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	September 2011	
Floodplains	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	September 2011	See Attachment A
Wetlands/Waters of U.S.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	September 2011	See Attachment B
Vegetation and Noxious Weeds	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	September 2011	
Fish and Wildlife	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	September 2011	See Attachment B
Threatened/Endangered Species	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	September 2011	
Historic Resource (includes bridges)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	January 2012	See Attachment C
Archaeological Resources	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	September 2011	
Paleontological Resources	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	September 2011	
Land Use	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	September 2011	
Social Resources	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	September 2011	
Economic Resources	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	September 2011	
Environmental Justice	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	September 2011	
Residential/Business Right-of-Way Impacts	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	September 2011	See Attachment D
Transportation Resources (roadway, rail, bus, bike, pedestrian, etc.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	September 2011	See Attachment E
Utilities and Railroads	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	September 2011	
Section 4(f)/6(f)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	January 2012	See Attachment I
Farmlands	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	September 2011	
Noise	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	September 2011	See Attachment F
Visual Resources/Aesthetics	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	September 2011	
Energy	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	September 2011	
Hazardous Materials	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	September 2011	See Attachment G
Cumulative Impacts	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	September 2011	
Other(s)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	September 2011	

DESIGN ALTERATIONS:
Document changes to project scope and or design criteria:
 Since the time the US 36 ROD was issued, CDOT has advanced the engineering design. This has resulted in changes in the following design elements. These changes are based on an approximate thirty percent level of design. Continued refinement of design is expected.

112th Avenue Improvements: The ROD stated that the Old Wadsworth bridge would be replaced in a new location at 112th Avenue. The FEIS stated in 3.5.5 that "Realignment of Wadsworth Boulevard to intersect with an extended 112th Avenue would be completed by the US 36 project. The new crossing would replace the obsolete Wadsworth Boulevard bridge. The extension of 112th Avenue to cross US 36 would be a project by others." Impact limits as illustrated on the FEIS/ROD design plans appear to include a replacement bridge and abutment fills at the new 112th location, but not the approaches or connections to existing roadways.

The Managed Lane Project includes the removal of the existing Old Wadsworth bridge, and construction of a new bridge at 112th with approaches and connecting roads required to connect the new bridge to the existing street system as shown on Exhibit 1 - 112th Avenue Overcrossing.

The change from the FEIS/ROD scope was made since funding for the replacement of the existing bridge and approaches was made available through the Colorado Bridge Enterprise program. Replacement of the bridge required that approaches and connections be made to the existing street system.

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Major Drainage Crossings: The advanced drainage design has resulted in refinements to the type of drainage structure proposed for Coal Creek, the culvert size at Rock Creek, and the design of the Airport Creek channel, outfall, and adjacent water quality pond.

Coal Creek: The ROD (for Phase 1) proposed a widening of the existing US 36 bridges over Coal Creek to accommodate the Phase 1 pavement width. The FEIS (for the entire Preferred Alternative) proposed a significant grade raise of US 36 and construction of a bridge structure to accommodate the required drainage flows including freeboard to the bottom of the bridge, at a width to accommodate the ultimate US 36 and McCaslin ramps improvements. The FEIS bridge did not appear to address raised benches required for the existing pedestrian trail or a wildlife corridor.

The Managed Lane Project proposes a minor grade raise of US 36 and the construction of a permanent three cell box culvert at the site of the existing channel to accommodate minor drainage flows, the pedestrian trail, and wildlife movement. The culvert cells would be sized to provide a cell for the pedestrian trail with minimum dimensions of 14 feet wide with a clearance of 10 feet, a cell for minor drainage flows with benches on each side for small wildlife, and a cell for a large mammal wildlife crossing with a natural bottom and minimum opening dimensions of 16.5 feet wide and a vertical clearance of 10 feet. The trail and wildlife crossing platforms will be raised above the ordinary high water elevation. Based on preliminary hydraulic modeling, the cells will each more likely be 20 feet wide. Major drainage flows will utilize all cells.

The change was made based on the following:

- Widening of the existing bridges as proposed in the ROD is not a reasonable interim alternative since:
 - Widening reduces the already substandard vertical clearance of 8 feet to less than 7.5 feet for the pedestrian trail and reduces clearance for large mammal wildlife movement.
 - Widening does not mitigate the existing condition of the 100 year flood overtopping of US 36
 - The 60 year age and condition of the existing bridges may not allow widening
 - Widening does not accommodate the ultimate improvements (McCaslin ramp tapers) and would be throw-away
- Construction of a new bridge for the Phase 1 project was analyzed but was eliminated since raising the grade of US36 approximately 6 feet to accommodate the bridge structure depth, vertical clearance requirements, wider channel, and ultimate US36 would result in greater riparian area impacts of 0.3 acre, greater initial and ultimate ROW needs, and approximately \$2 million greater construction costs than the box culvert alternative. The length of the box culvert will be set to accommodate the future US36 widening and ramp construction with no channel impacts. As a comparison, if a bridge is constructed, it would need to be widened at a future date to accommodate the ultimate US 36 and ramp section.
- The proposed box culvert alternative with separate cells and elevations for the trail, low flows, and wildlife provides the required hydraulic capacity to pass the 100 year flows, provides a more acceptable vertical clearance for trail users than existing, and provides a wildlife opening that meets wildlife crossing criteria.

See Exhibit 2 – Coal Creek Impacts for additional information.

Big Dry Creek: The proposed improvements at Big Dry Creek are similar to the ROD with the exception of the bikeway connection west of US-36 and south of the creek, discussed under the "Bikeway Alignment Change between Big Dry Creek and Westminster Blvd" sections.

Rock Creek: The ROD and FEIS proposed a three cell 16' x 12' box culvert to replace the existing two cell box culvert. The Managed Lane Project proposes a permanent two cell box culvert, one with an opening of 14' x 14' and a second with a natural bottom and an opening of 20' x 16', which enhances the size of the opening for use by wildlife. The two cell culvert provides the same hydraulic capacity as the ROD/FEIS concept, but with a larger opening for wildlife.

The reason for this change from three cells to two cells is to provide a larger opening for wildlife while providing the same hydraulic capacity.

Airport Creek: The ROD and FEIS proposed a water quality pond on a vacant portion of property north of the Airport Creek channel, with limited changes to Airport Creek itself. No detention or floodplain mitigation was included. The pond was planned to outfall east to the railroad via a strip ROW acquisition.

The Managed Lane Project proposes to construct a defined channel with a ten foot bottom and 3:1 side slopes to contain the Airport Creek flows, to construct a combined detention/water quality pond south of the channel, and to improve the creek crossings under the Old Wadsworth and Wadsworth Boulevard roadways downstream to convey the 100 year creek flows without overtopping of these roads.

The change from the FEIS/ROD concept was made to address the existing floodplain issues and place the detention/water quality pond in a location that allows it to function better, and reestablish the Airport Creek channel closer to its historic path. The existing Airport Creek channel downstream of US 36 flows through private residential

properties and even minor flows result in frequent drainage impacts to these properties.

See Attachment A which includes a letter to Mr. John Cater with additional information regarding this change at Airport Creek.

Minor Drainage/Irrigation Crossings: Culvert designs have changed for three crossings of Allen Ditch, one crossing of the Niver Canal and one crossing of Farmers Highline Canal. In most cases, the FEIS showed extensions of the existing culverts.

The Managed Lane Project now proposes permanent replacements of culverts for the Allen Ditch and Farmers Highline Canal. In the case of the Niver Canal, since it has been abandoned, the existing culvert would be removed and replaced by 36" pipe that will also function as a small mammal wildlife crossing.

The reason for this change is that culvert replacement is needed to provide acceptable structural integrity since analysis since completion of the ROD indicates that their age and condition no longer supports extensions. (See Attachment C: Historic Resources Documentation for more detail.)

Water Quality/Detention Ponds: The FEIS and ROD defined conceptual locations for water quality and detention ponds.

The advanced design performed as a part of the Managed Lane Project has refined the locations and configurations of these ponds and in some cases eliminated ponds. A total of ten water quality or detention ponds were changed since the ROD. The changes are in the following locations:

- Station 1336-1340, Rt.: Reduced footprint of two WQ ponds at Coal Creek
- Station 1397, Rt.: Added a WQ pond to treat flows coming from west since there is limited room to east at West Flatiron Crossing (FEIS and ROD concept did not appear to address the treatment of these flows)
- Station 1432, Lt.: Reduced size of WQ pond at Rock Creek
- Station 2034, Lt.: Added WQ pond on vacant portion of private parcel since impractical to convey flows 3000 feet further west to ROD pond location, and would have required increasing size of pond at ROD location and impacting additional wetlands and ROW.
- Station 2130, Lt.: Moved WQ pond at Airport Creek and added detention
- Station 2166, Lt.: Moved WQ pond near BNSF to reduce ROW impact and maximize size of remaining parcel
- Station 2209, Lt.: Reduced size of WQ pond near Big Dry Creek
- Station 2216 and 2240, Lt.: Replaced large WQ pond on private parcel (shown in the ROD) with 2 smaller ponds between US 36 and WM Boulevard.
- Station 2402, Rt.: Eliminated WQ pond requiring residential relocation at Lowell.

The change to the FEIS/ROD concepts were made to provide adequately sized ponds at locations required to function properly and provide adequate maintenance access.

Bikeway Design at BNSF Railroad: At the crossing of the BNSF railroad, the FEIS plan indicated that the bikeway would be placed on the same structure as the ultimate replacement US 36 bridge over the railroad.

The Managed Lane Project proposes to build a separate underpass for the bikeway, underneath the BNSF railroad.

The change was made as a result of input received during the series of Bikeway Workshops. Multiple requests were made to route the bikeway under the railroad via an underpass, which would allow an easier grade for bicyclists, improve bicyclist safety and improve access to the future rail station in this vicinity.

See Attachment C: Historic Resources Documentation for more detail about this design refinement.

Bikeway Design at Walnut Creek: At Walnut Creek, the FEIS plan for the bikeway was for it to be located between the realigned interchange eastbound on-ramp and the realigned Walnut Creek.

During the series of workshops with the Bikeway Group, the request was made to change the bikeway alignment since neither the ramp nor channel realignment is included in the current project. The Managed Lane Project assumes the bikeway will be located to the south from the existing US 36 eastbound on-ramp at 104th.

The change takes advantage of a segment of bikeway that is being built by an adjacent development, crosses Walnut Creek via a small bridge, and utilizes a segment of existing trail to connect to the Big Dry Creek trail, resulting in less "throw-away" infrastructure in the future. The changed bikeway alignment is included in the documentation in the Biological Resources Report, Attachment B.

Bikeway Alignment Change between Big Dry Creek and Westminster Blvd: The FEIS and ROD included a conceptual bikeway alignment for this segment that crossed under US36 to the east side in a culvert at Big Dry Creek, then paralleled the shoulder of Westminster Boulevard to the south. The FEIS bikeway then departed from

Westminster Blvd., crossed under the bridge over US 36, and required a steep, sharp loop back up onto the other side of Westminster Blvd., crossing US 36 on the existing bridge sidewalk, before ramping back down to continue on the west side of US 36.

The Managed Lane Project proposes to move the bikeway alignment to the west side of US 36 to provide a more direct and safer commuting route with an improved user experience.

The change was made as a result of extensive option analyses and reviews during the Bikeway Workshops including input from the City of Westminster and other stakeholders. Removing the bikeway from the east side also freed up room for water quality ponds to use this area, eliminating the need for large ROW takes and prairie dog impacts on the east side of Westminster Blvd.

Managed Lane Access Ingress/Egress: Refinements have been made to the proposed ingress and egress for the managed lanes. The FEIS/ROD assumed separate ingress/egress to and from the managed lane.

The Managed Lane Project includes combined ingress/egress in nine locations.

The changes have been made to reduce the amount of signage needed and to provide for overall corridor consistency since in some locations there was not adequate space for separate ingress and egress.

The proposed changes are documented in more detail in Attachment E.

Noise Wall Design/Location:

Rotary Park: The proposed FEIS /ROD noise wall location at Rotary Park (from the side of the widened highway) has been changed to the current location which is identical to the existing noise wall location within Rotary Park.

The reason for this change is the existing wood noise wall needs to be removed and some sort of replacement fence erected in its place to keep park users out of the CDOT ROW and the pond outfall structure, therefore it was logical to just place the new noise wall in the existing location and avoid a second fence.

Madison Hills: The ROD committed to build the noise walls in the Preferred Alternative location in the Westminster segment. The ROD included the construction of the eastbound off-ramp to 92nd Avenue, which required the acquisition of a number of units in the Madison Hills Townhomes development, and placement of the noise wall at the outside edge of the ramp.

The Managed Lane Project design proposes the construction of interim noise mitigation in this area. The interim barrier will provide equivalent noise reduction.

The reason for this change is because the Managed Lane Project is not proposing to build the eastbound off-ramp nor acquire the residential units in the Madison Hills Townhome development. In addition, the City of Westminster has stated a preference to reduce the amount of walls along the corridor and this area allows for contractor innovation and the possible use of noise reducing berms. The updated noise analysis can be found in Attachment F.

Tuscany Trails: The ROD recommended the construction of a noise wall north of Madison Hills along the proposed Tuscany Trails development.

The updated noise analysis done for the Managed Lane Project indicates that depending on the elevation of the reconstructed US 36, the existing berm and wall may or may not provide adequate interim noise mitigation. Constructing the noise wall in the ultimate FEIS location will require construction of additional pavement. The Design-Build contractor will be responsible for updating the analysis and providing noise abatement in the ultimate location that meets CDOT noise requirements.

The reason for this change is that the Tuscany Trails housing development has included a berm and masonry wall on the property line adjacent to US 36 and the Managed Lane Project does not require the additional pavement for US 36 in its ultimate location.

US 36 Median Barrier Width: The Typical Sections in the FEIS and ROD depicted a 4 foot wide concrete median barrier along US 36 rather than a standard 2 foot wide barrier. Reasons the 4 foot wide barrier was shown included: it provided a wider barrier to contain the ITS duct bank if it went in the median; the wider normal barrier width would minimize the magnitude of bump-outs required for signs, light poles, and bridge piers; the wider barrier was used on some portions of the US 36 projects recently constructed to the east from Federal to Pecos.

The Managed Lane Project proposes to reduce the barrier width to the standard CDOT 2 foot barrier.

The change to the barrier width was made based on the following:

- The ITS duct bank will be located at the side of the highway rather than the median
- CDOT State Highway and Interstate projects throughout the state use a standard 2 foot barrier with bump-outs around obstructions on facilities with narrower inside shoulders than proposed for US 36, with no apparent history of reduced safety due to additional penetration of the obstruction into the shoulder.

- The existing I-25 HOV lanes were constructed with 2 foot barrier and bump-outs
- Construction difficulties and cost of the wide median barriers on the US 36 projects to the east did not justify its continued use for the Managed Lanes Project.

US 36 Horizontal and Vertical Design Refinements: The FEIS/ROD design plans assumed a new US 36 alignment that was at a certain elevation and horizontal location, and included a footprint based on a conceptual assessment of retaining wall locations.

The Managed Lane project has refined the horizontal and vertical design of US 36 and interchange ramps and retaining wall sizes and locations to minimize right-of-way acquisition and optimize cost effectiveness.

The primary reason for the changes in retaining wall locations and heights is to minimize right-of-way acquisition needs and reduce costs. Right-of-way changes are documented in Attachment D: Right of Way Impacts.

Bus on Shoulder Use of US 36: The ROD did not differentiate between type of bus service in its discussion of use of the managed lane or of the general purpose lanes. Local buses were assumed to use the managed lanes where and when possible and general purpose lanes the rest of the time.

The Managed Lane Project includes use of US 36 shoulders during congested periods by local buses. This shoulder bus operation, in conjunction with queue jumps and ramp metering by-pass lanes, would fulfill the intent of the managed lanes and also provide travel time reliability for Local BRT. Special signage would be provided to clearly indicate what vehicles are allowed to use the shoulders during congested periods.

This change has been proposed to improve bus travel times and travel time reliability and also improve safety for autos and buses by minimizing merge conditions.

Advanced Traffic Management: The FEIS identified general descriptions of Intelligent Transportation Systems which would be included with all alternatives, but no specific application was identified in detail.

The Managed Lane Project includes Advanced Traffic Management measures which include lane status information via Lane Use Signals over each general purpose lane. The purpose is to notify drivers of lane closures, restrictions or merge conditions. These are planned every half mile throughout the corridor.

This change is a more detailed ITS application. It will benefit overall operations and safety for all users of US 36.

REGULATORY CHANGES:

Document changes to laws, regulations, and/or guidelines:

The criteria and dimensions for wildlife crossings are now based on FHWA's *Wildlife Crossing Structure Handbook: Design and Evaluation in North America* (March 2011) which was not yet published at the time the FEIS and ROD Mitigation Measures were developed.

IMPACTS ASSESSMENT:

For items checked as changed above: assess the affected natural and socio-economic environment, impacts and new issues/concerns which may now exist:

The design refinements described in the previous section have resulted in the following changes in environmental impacts. These changes are based on an approximate thirty percent level of design. Continued refinement is expected as the design progresses.

112th Avenue:

The changed design at 112th has increased prairie dog town impacts by 2.39 acres and increased right of way acquisition by 5.73 acres. The new ROW does not affect any structures nor require any relocations.

The increases in ROW impact is not a new significant impact because this ROW acquisition is needed to make this connection to the new bridge, and would need to be acquired by a separate project if the Managed Lane project was not constructing the new bridge. The land to be acquired is vacant, and no businesses or residences will be impacted. The proposed reconfiguration of the Old Wadsworth Boulevard overpass to the proposed 112th Avenue location with connecting roads provides an improved connection for the local residences and businesses and is a planned improvement reflected in the City and County of Broomfield's *2005 Comprehensive Plan* (October 2005) and *Final Transportation Analysis - Wadsworth Boulevard and W. 112th Avenue Within the Original Broomfield Neighborhood* (June 2011).

The increase in prairie dog town impact is inconsequential when compared to the large quantity of vacant or open space land in this vicinity. In addition, the existing Wadsworth Boulevard bridge and fills will be removed and this land could be used by prairie dogs. For these reasons, these changes do not represent a new significant impact which was

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not evaluated in the FEIS/ROD.

Coal Creek Design Change:

The changed design at Coal Creek reduces the acreage of floodplain impacted by 1.78 acres compared to the FEIS. The reduction is due to the reduced footprint of the proposed box culvert and channel vs. the more extensive channel grading work for the EIS bridge concept. Like the FEIS concept, the changed design removes the US 36 lanes from the 100 year floodplain.

The changed design at Coal Creek improves conditions for pedestrians and bicyclists from the existing and ROD bridge widening condition by increasing the vertical clearance under US 36 from 8 feet or less to a minimum of 10 feet. The box culvert design also will allow the ultimate US36 and ramp widening to occur without further lengthening of the culvert and disturbance of the channel.

The changed design at Coal Creek presents a more constrained area for wildlife to cross vs. the FEIS bridge concept, but provides improved vertical clearance and elevates the large mammal crossing above the low flow channel as compared to the existing condition or bridge widening concept shown in the ROD. Coal Creek is a movement corridor for mule deer and is also a white-tailed deer concentration area. The low flow cell will include a ledge that is above the ordinary high water mark for small mammals to use. The size of the cell for the large mammal crossing will satisfy the recommendations included in FHWA's *Wildlife Crossing Structure Handbook: Design and Evaluation in North America* (2011). The natural bottom enhances conditions for wildlife to cross.

These changes in impact do not create a new significant impact in this location. The improved vertical clearance conditions for pedestrians and bicyclists will enhance the user experience. Replacing the existing bridge structure with three 20- by 10- foot CBCs with a natural substrate bottom will maintain the existing wildlife connectivity and will not result in any significant long term effects or disruption of movement corridors for deer and other common wildlife species. The changed design results in less floodplain impact and removes US 36 from the 100 year floodplain.

Rock Creek Design Change:

The design change at Rock Creek provides the same hydraulic capacity, increases the opening for wildlife to cross and reduces floodplain impact by 1.26 acres.

These are not new significant impacts because the improvement in wildlife crossing is slight and the reduction in floodplain impact also does not rise to the level of significance based on the context of the area and the size of the Rock Creek floodplain.

Airport Creek Design Change:

The change in design at Airport Creek results in four new residential property acquisitions including three relocations. Three of the residences are currently in the 100 year floodplain. Impacts to the two properties identified for the FEIS/ROD water quality pond and outfall will be eliminated.

The area of existing 100 year floodplain impacted at Airport Creek due to the pond and Wadsworth Blvd construction is 2.36 acres versus 2.22 acres which would have been impacted due to the FEIS/ROD improvements, an increase of 0.14 acre. However, as a result of the new Managed Lane Project improvements proposed at Airport Creek, 5.69 acres of land will be removed from the 100 year floodplain between US 36 and Wadsworth Boulevard.

The Managed Lane Project design change resulted in a very small increase in wetland impact of 0.0016 acre to the Airport Creek channel wetlands.

The three residential relocations in this vicinity do not result in a new significant impact because one parcel is vacant and in foreclosure; a second property is a rental parcel and there are numerous rental properties available in the Broomfield or Westminster vicinity; and the third property owner is planning to relocate to southern Colorado. This enclave of residential uses is isolated and not a part of a larger community, so its removal would not result in a substantial community impact. Since portions of these properties were already in the floodplain, removal of them and changing the use of the area to a detention pond is more consistent with general land use policies.

The minor increase in floodplain impact of 0.14 acre is more than offset by the decrease of area currently in the floodplain by 5.69 acres. The increase in wetland impact is so small as to be almost immeasurable.

Big Dry Creek Design Change:

The design refinement at Big Dry Creek has resulted in a reduction in floodplain impact of 2.09 acres. The floodplain impact area reduction is due to a design refinement which reduced fill and the fact that the ROD impact area was conservative. This does not constitute a new significant impact since the floodplain is quite large in this area and the original floodplain impact has been reduced.

Culvert Replacements at Niver Canal, Allen Ditch and Farmers Highline Canal:

The three culvert replacements for the Allen Ditch do not change the original Section 106 determination of *adverse*

effect to this resource. For the Niver Canal, the existing culvert will be removed and replaced by a 36" pipe resulting in a "no adverse effect" determination, which is the same effect determination as was in the ROD. The change in design for the Farmers Highline Canal (from a culvert extension to a culvert replacement) maintains the original Section 106 determination of *no adverse effect*.

Because none of these changes in culvert design would affect the qualities that made any of these canals or ditches eligible for inclusion to the National Register of Historic Places, these changes do not constitute a new significant impact. The SHPO has concurred with this effects determination by letter dated January 17, 2012. See attachment C.

This change in design has been subject to a new *de minimis* finding as included in Attachment I dated January 25, 2012.

Water Quality/Detention Ponds:

The ten changes in location and size of these ponds has increased wetland impact by 0.119 acre, decreased prairie dog town impact by 5.21 acres, and decreased ROW impact by 11.02 acres.

None of these changes are considered to be new significant impacts. The ponds are spread out all over the US 36 corridor. As it relates to wetlands, the increase of 0.119 acre of impact as a result of these changes do not rise to the level of significance since the wetlands impacted are not high quality, and the new impact can easily be accommodated within the limits of the Section 404 permit already obtained for this project.

Bikeway Design at BNSF Railroad:

The new crossing of the bikeway under the BNSF Railroad (a property that is eligible for inclusion on the National Register of Historic Places) requires a 0.14 acre permanent easement from the railroad. It will introduce a new visual element into the landscape. However, the BNSF tracks are crossed approximately 30 times between downtown Denver and Longmont. This new underpass for the bikeway has been determined to be a *no adverse effect* to the BNSF Railroad.

The new underpass for the bikeway under the BN Railroad is a new *de minimis* Section 4(f) impact, as documented in a separate correspondence from CDOT and FHWA dated September 16, 2011.

Since both of these determinations of impact do not affect the qualities of the BNSF Railroad that made the resource eligible for inclusion to the National Register of Historic Places, this is not considered to be a new significant impact.

Bikeway Design at Walnut Creek:

The change in location of the bikeway in the Walnut Creek area increases wetland impact by a tiny amount: 0.0002 acre, and slightly increases riparian habitat impact by 0.08 acre. There is no additional ROW need due to this change, the bikeway will be constructed via permit on City of Westminster lands and maintained by the City.

These changes in impacts, when compared to the size and quality of the riparian and natural resource habitat in the Walnut Creek area, do not rise to the level of significance. There is much higher quantity and quality of wetland and riparian habitat in the immediate vicinity of this design change.

Bikeway Alignment Change between Big Dry Creek and Westminster Blvd:

The change in bikeway location in this segment resulted in an increase in wetland impact of 0.297 acre, a reduction in prairie dog town impact of 0.86 acres, a reduction in right-of-way of 10.18 acres on the east side of US 36, and a safer commuting experience for bicyclists.

None of these changes in impact are new significant impacts. The improved bicyclist safety and overall user experience more than compensates for the slight increase in wetland impact.

Managed Lane Access/Egress Changes:

Changes in the proposed access to and from the managed lane have been evaluated from a safety perspective. The proposed combined access does not change the safety of the motorists in the managed lane from that evaluated in the FEIS. In either case (separate access vs. combined access), the motorist is subject to merging, diverging, and weaving maneuvers to and from the managed lane. The separate access provides 1500 feet per egress and ingress separated by approximately 1000 feet. The combined access zone provides additional distance and opportunity for executing these maneuvers by providing a minimum of 1500 feet per egress and ingress without separation for a combined total of 3000 feet of access. The increased distance in the ability to maneuver is offset by the action of combining the ingress/egress zone into a single zone.

These minor changes in overall managed lane operations and safety do not rise to the level of significance.

Rotary Park Noise Wall Change

The official with jurisdiction has agreed that Rotary Park is most appropriately designated as a multi-use resource and that the proposed temporary impacts to the resource do not present permanent adverse impacts to Rotary Park and its

functions and activities. The Rotary Park noise wall location change is not a Section 4(f) use. (See separate correspondence from CDOT and FHWA dated September 16, 2011.)

The official with jurisdiction also concurred with the new wall's alignment.

This change is not a new significant impact because it merely removes a wall from a proposed location along the widened bridge and replaces it in its existing location.

Madison Hills Noise Wall Change

The change in noise wall from a permanent location to an interim location defers the need for ROW and residential impacts until the future off-ramp to 92nd Avenue is constructed. The reduction in decibels that is accomplished by the noise abatement remains the same as that committed to in the FEIS/ROD and thus this change is not a significant new impact.

Tuscany Trails Noise Wall Change

The change in existing conditions and the change in US 36 alignment in this location does not change the noise analysis or noise abatement goals. For these reasons, this is not a significant new impact.

US Median Barrier Width

The changed design (from a four foot wide barrier to a two foot wide barrier) has no effect on corridor safety, aesthetics or ability to carry the ITS ductwork. For these reasons, this change in design does not result in a new significant impact.

US 36 Horizontal and Vertical Design Refinements

The various changes in horizontal and vertical alignment and retaining wall design have decreased wetland impact by 0.179 acre, decreased impacts to Waters of the US by 0.034 acre, decreased prairie dog town impact by 0.43 acre, decreased riparian habitat impact by 0.36 acre and decreased ROW impacts by 9.60 acres.

These relatively minor changes in overall corridor impacts are not significant when compared to overall corridor impacts or of the relatively small changes in impact compared to the improvements associated with the design in the FEIS/ROD.

Bus on Shoulder Use of US 36: Allowing buses on shoulders will primarily benefit bus riders, by providing improved travel times and travel time reliability. RTD has committed to implementing a driver training program to train bus drivers how to drive on the shoulder, maneuver around vehicles using the shoulder and interact safely with general purpose traffic at merge points. This use of shoulders may change the current practice of snow removal along US 36. Clear signage will be provided to make it clear to all drivers what the appropriate use of the shoulder is.

Advanced Traffic Management: This application will result in very minor additional impacts for signage. The primary benefit will be to overall traffic flow and safety on US 36.

Impact Summary

Table 1 summarizes the listed resource changes that occur as a result of individual elements of the Design Alterations. If blank, there is no change to the resource impact. Other impacts such as to historic resources, wildlife movement, visual impact, traffic operations and safety are noted elsewhere in this section.

Impacts to most resources have been reduced, even with the addition of the 112th elements to the project. There is a slight increase in wetland impact from 3.88 acres for equivalent ROD elements to 4.12 acres for this Project. Recent projects constructed in the corridor (the 120th Avenue Connection project and Arista Development) have impacted and mitigated separately 0.69 acres of wetlands which were included in the total original EIS impacts. Therefore, for the total EIS study area, anticipated total ultimate wetland impacts have decreased from those documented in the Section 404 permit (from 21.0 acres to 20.37 acres).

TABLE 1 Design Alteration	Resource Impact Change from ROD (Acres)					
	Wetlands	Waters of US	P-Dogs	Riparian	Flood-plain	ROW
112th Avenue Improvements			2.39			5.25
Major Drainage Crossings:						
<u>Coal Creek</u>					-1.78	
<u>Rock Creek</u>					-1.26	
<u>Airport Creek</u>	0.0016				0.14	4.31
<u>Big Dry Creek</u>					-2.09	
Water Quality/Detention Ponds	0.119		-5.21			-11.02
Bikeway Design at BNSF Railroad						0.14
Bikeway Design at Walnut Creek	0.0002			0.09		
Bikeway Alignment Change between Big Dry Creek and Westminster Blvd	0.297		-0.86			-10.18
US 36 Horizontal and Vertical Design Refinements	-0.179	-0.034	-0.43	-0.36		-9.60
Total D-B Project Impact Changes	0.238	-0.034	-4.11	-0.27	-4.99	-21.38

Other Changes

In addition to the changes in impact associated with design alterations, there have been some changes in impacts associated with changed existing conditions. These include:

Historic: A property at 3050 Industrial Lane was not impacted by the FEIS design, but the addition of a water quality pond requires acquisition of a vacant portion of this property. It was surveyed recently and CDOT and FHWA have determined this property is not eligible for inclusion on the National Register of Historic Places. The SHPO has concurred with this.

A second property at 11415 Wadsworth Boulevard was recently re-surveyed because of an alteration made to the building. Because of this alteration, the building is no longer determined eligible for inclusion to the National Register of Historic Places. The SHPO has concurred with this change.

Details about both of these changes are in Attachment C.

Recognized Environmental Conditions: New recognized environmental conditions have been documented in Attachment G. Ten new sites were identified adjacent to the project footprint. Seven of these have a moderate to high potential for the presence of hazardous materials. Only a portion of one of these sites will be acquired.

To summarize, none of the changes in impact due to the design changes or changes in existing conditions result in new significant impacts that were not identified in the FEIS or ROD.

MITIGATION:

- All mitigation commitment(s) from NEPA document remain the same (discuss status and compliance):
- Mitigation commitment(s) have changed from NEPA document.

Attachment H includes a current version of the ROD mitigation table that summarizes the current status of all mitigation measures.

V. Public/Agency Involvement (optional)

If any, document public meetings, notices, & websites, and/or document agency coordination. For each provide dates, and coordination, where applicable:

After the ROD was signed, numerous meetings have been held with local cities and counties to discuss ongoing design efforts, including bikeway refinements, drainage refinements, right-of-way reductions, etc. These meetings have included:

- Formation of a Context Sensitive Solutions Group (including senior staff from all of the local entities), which has been meeting monthly since February 2011; and
- A Transportation Demand Management stakeholder group which met three times; and
- A bikeway group which met three times; and
- Numerous meetings with individual city and county representatives; and
- Meetings with the Urban Drainage and Flood Control District; and
- Monthly meetings with the 36 Commuting Solutions (TMO) which includes local business owners and groups as well as local city and county staff and elected officials.

Additional coordination was conducted with the State Historic Preservation Officer (SHPO) in August 2011 and December 2011.

Additional meetings were held with individual property owners to discuss the proposed changes in right-of-way. A summary of this involvement is included here:

On August 8th, 2011, project team representatives met with impacted property owners along the 11300 block of Wadsworth Boulevard. Owners were updated on the project's proposed improvements and modified design. Specifically, they were shown preliminary plans for a proposed water quality pond and drainage improvements in their property's current location. Because these properties are within the existing floodplain and experience periodic flooding, landowners understood of the need for improvements in this area.

Owners were informed of the intent for the project to require a total acquisition of their property. A CDOT Right-of-Way Specialist was present to explain the ROW process and benefits package guaranteed to each owner under the Uniform Act. CDOT also solicited information on the individual's needs and desires, should the project require their total acquisition. Finally, they were also informed of their rights and ability to challenge to process.

One individual plans to relocate to southern Colorado, one residential parcel is vacant and in foreclosure. The two remaining residential properties are operated as rental properties by a single individual.

VI. Additional Studies Required for Proposed Action

None

VII. Additional Requirements for Proposed Action

- An SEIS is required, because the changes to the proposed action will result in significant impacts not evaluated in the EIS.
- An SEIS is required, because new information or circumstances will result in significant environmental impacts not evaluated in the EIS.
- A revised ROD is required, because an alternative is recommended that was fully evaluated in an approved FEIS but was not identified as the preferred alternative.
- Appropriate environmental study or an EA is required, because the significance of new impacts is uncertain.
- A revised FONSI is required, because an alternative is recommended that was fully evaluated in an approved EA but was not identified as the preferred alternative.
- Other _____
- None

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VIII. Permits Updated (optional)

This section is only required when the next stage of a project is going to construction.

List permits:

No changes have been made to the permits needed.

IX. Attachments Listed

List permits, studies, background data, etc.

Exhibit 1: 112th Avenue Overcrossing

Exhibit 2: Coal Creek Impacts

Attachment A: Floodplain and Drainage Reports

Attachment B: Biological Resources Report, including Wetlands/Water of the U.S and Fish and Wildlife

Attachment C: Historic Resource Documentation

Attachment D: Residential/Business Right-of-Way Impacts

Attachment E: Transportation Resources: Changes in Access to the Managed Lanes

Attachment F: Noise Technical Report

Attachment G: Hazardous Materials Technical Memo

Attachment H: ROD Mitigation Measures Status

Attachment I: Section 4(f) Documentation

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