US 36 Managed Lane Project:
Federal Boulevard To Interlocken Loop With A Potential Extension To McCaslin Boulevard

Attachment B:
Biological Resources Report

January 25, 2012

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INTRODUCTION

The US 36 Managed Lane Project (Project) represents one phase of planned improvements identified as Phase 1 of the Preferred Alternative in the US 36 Record of Decision (ROD). The US 36 Managed Lane Project is a multi-modal, toll integrated project that will include reconstruction of the US 36 mainline pavement from Federal Boulevard to Interlocken Loop, with a potential extension to McCaslin Boulevard. The project will also include widening to accommodate a new buffer-separated Managed Lane in each direction of US 36; replacement of the Wadsworth Parkway, Wadsworth Boulevard, and Lowell Boulevard bridges; construction of retaining walls and sound walls; installation of Intelligent Transportation Systems; and construction of portions of a commuter bikeway.

The purpose of this technical memorandum is to discuss biological resource impacts that have changed from those evaluated in the Final Environmental Impact Statement (FEIS) or ROD. Changes could include new impacts that occur outside of the original US 36 EIS study area for this first phase of planned improvements. Additional changes to the FEIS environmental impacts have occurred since the release of the ROD in December 2009 because of ongoing design activities and refinements, which has resulted in changes to the following design elements that have changed impacts to biological resources:

Drainage Design: The advanced drainage design for the U.S. 36 Managed Lane Project has changed the type of drainage structure proposed for Coal Creek and the culvert size at Rock Creek. In addition, improvements associated with Airport Creek have also changed based on design refinements. Other drainage design changes include: refined locations and sizes of water quality and water detention ponds.

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 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.

- o Widening does not mitigate the existing condition of the 100 year flood overtopping of US 36
- o The 60 year age and condition of the existing bridges may not allow widening
- o 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 US 36 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 US 36 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.

Rock Creek: The ROD and EIS proposed a three cell 16' x 12' box culvert to replace the existing two cell box culvert. The Managed Lane Project proposes a two cell box culvert, one with an opening of 14' x 14' and a second with 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.

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.

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 104$^{th.}$

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.

Change in Commuter Bikeway Alignment between Big Dry Creek and Westminster Boulevard: The FEIS and ROD included a conceptual bikeway alignment for this segment that crossed under US 36 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.

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.

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.

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 EIS showed extensions of the existing culverts. The Managed Lane Project now proposes replacements of culverts or, in the case of the Niver Canal, since it has been abandoned, the existing culvert would remain in place but would be filled so it would no longer function to carry water. Culverts are proposed to be replaced to provide acceptable structural integrity since their age and condition no longer supports extensions.

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

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.

US 36 NEPA RE-EVALUATION

The quantitative analysis of direct permanent impacts presented in the FEIS was based on conceptual roadway plans and assumed highway configurations while the current level of design for the US 36 Managed Lane Project has advanced to approximately thirty percent. This NEPA re-evaluation is being conducted pursuant to the requirements of 23 CFR 771.129. Biologists with Jacobs conducted additional wetland and biological surveys in July and August 2011 for the Project. Field efforts were primarily focused on design changes in the vicinity of Walnut and Airport Creeks that were outside of the original US 36 EIS study area. Biological resources discussed in the following sections include:

- Wetlands
- Wildlife (prairie dogs)
- Senate Bill 40 (streamside riparian habitat)
- Wildlife corridors
- Threatened and endangered species

WETLANDS

The original wetland study conducted for the US 36 Corridor EIS mapped wetlands within 300 feet of the centerline of US 36. Several design changes have occurred outside the original US 36 Corridor EIS wetland study area (as detailed above). As a result, additional wetland surveys were conducted in the vicinity of Airport and Walnut Creeks. These wetland surveys mapped an additional 0.12 acre of wetlands that could potentially be impacted by the Project. Results are presented in **Figure 1** and **Figure 2**, and detailed below in **Table 1**. A separate wetland delineation report has also been prepared, which discusses these wetland areas in greater detail.

Table 1: Wetlands Identified Outside the US 36 EIS Study Area

Site ID	Acres Within Survey Area	USACE Jurisdictional?	Wetland Type	Comments
Walnut Creek	>0.1	Yes	Emergent	Small fringe wetland located along the north bank of Walnut Creek within the survey area. The majority of habitat within the survey area was riparian with an understory of upland grasses.
Airport Creek	.12	Yes	Emergent	Emergent wetland associated with Airport Creek, which generally lacked a defined bed or bank within the survey area. The channel was much more defined (though wetlands were present only in small fringes) just east of the survey area.

Figure 1: Airport Creek

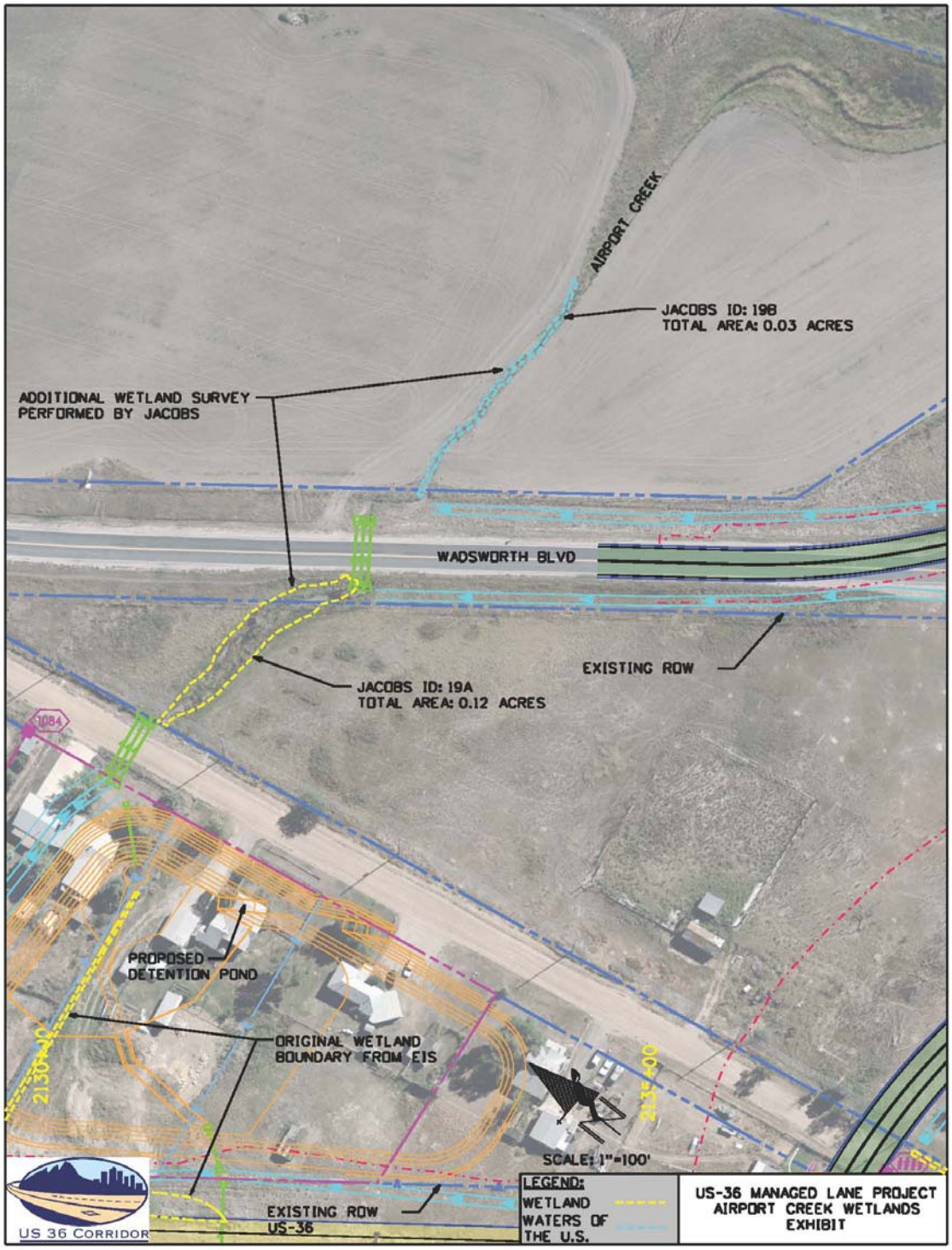
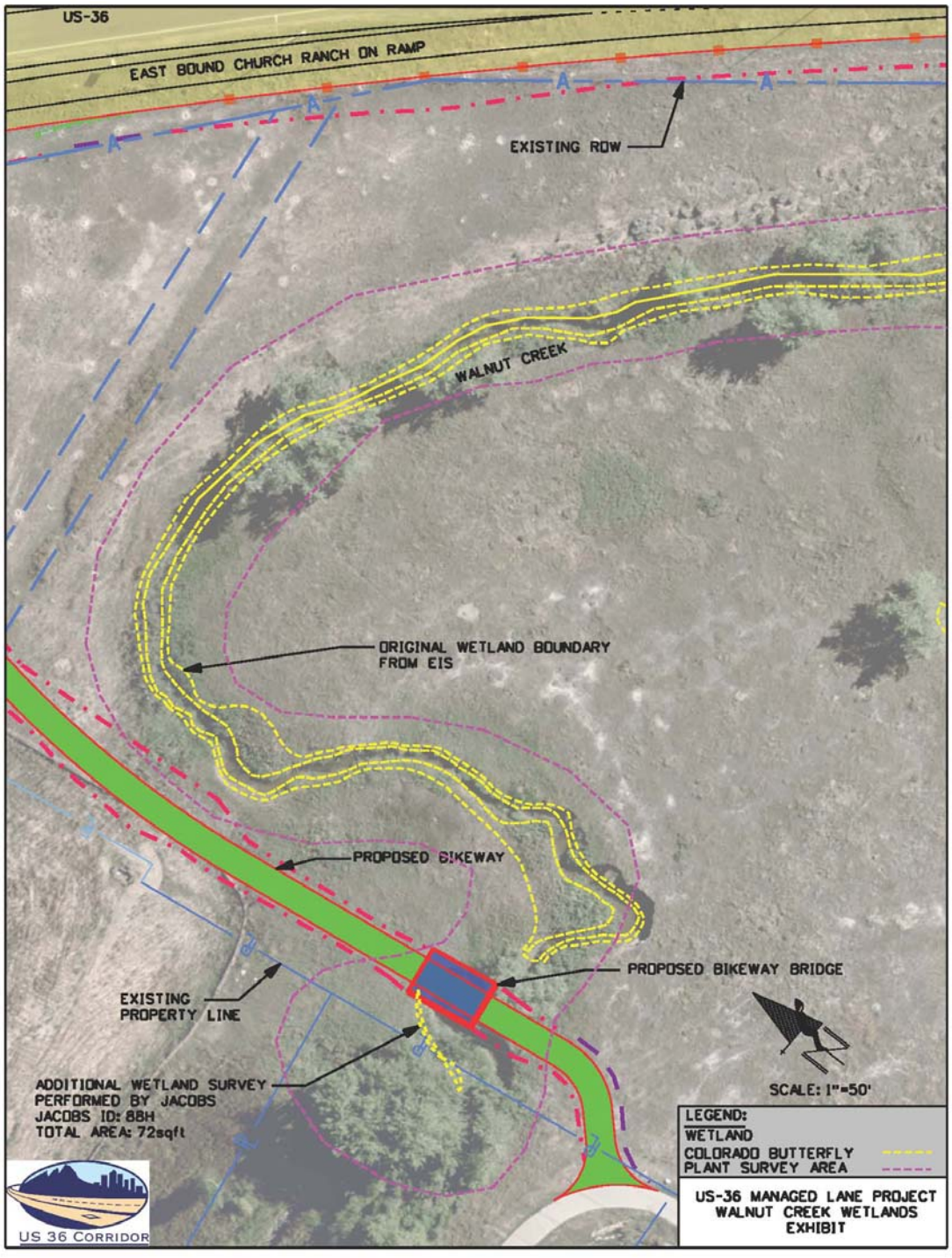


Figure 2: Walnut Creek



Wetland Impacts

A comparison of wetland impacts (ROD Phase I vs. current design) is presented in **Table 2**. Overall, the total acreage of permanent wetland impacts has increased slightly, from a total of 3.88 identified in Phase I of the ROD for the same design elements, to a total of 4.11 acres for the Project. Overall, design refinement have decreased impacts to approximately 10 individual wetland areas by a total of 0.25 acres when compared to the impacts presented in the ROD (for the same design elements). Moreover, approximately 0.69 acres of wetland impacts have been eliminated in the vicinity of 120th Avenue and the Arista Development (in the vicinity of Dry Creek Valley Ditch) within the Project footprint. Wetland areas identified as Wetland 18, 20, and 86 in Phase I of the ROD are no longer present, or have been impacted and mitigated by the 120th Avenue Connection Project (Corps file No. 200380660) and the 116th Slip Ramp Ped Bridge Project.

The slight increase in wetland impacts for the Project is primarily associated with changes in the commuter bikeway alignment between Big Dry Creek and Westminster Boulevard. Additional wetland impacts are also associated with changes in the roadway footprint, drainage design (including new water quality pond locations), and new wetland areas delineated outside the US 36 EIS study area in the vicinity of Walnut and Airport Creeks. A summary of additional wetland impacts by design element is shown in **Table 3**.

Impacts to other waters of the US have decreased slightly, as shown in **Table 2**. It should be noted that biological resource impacts summarized in **Table 2** are based on approximately thirty percent level of design. Continued refinement of the design and impacts are anticipated as the project progresses into final design.

Table 2: Comparison of Biological Resource Impacts (Acres) by Design Alteration

Design Alteration	Wetlands		Waters of the US		Prairie Dogs		Riparian Habitat	
	US 36 Managed Lane Project	ROD Phase I Impacts	US 36 Managed Lane Project	ROD Phase I Impacts	US 36 Managed Lane Project	ROD Phase I Impacts	US 36 Managed Lane Project	ROD Phase I Impacts
112th Avenue Improvements	**-**		**-**		4.0	1.7	**-**	
Major Drainage Crossings:								
Coal Creek	0.04	0.04	0.08	0.08	**-**		0.3	0.28
Rock Creek	0.21	0.21	0.01	0.01	**-**		0.2	0.2
Airport Creek	0.0016	0.0	-		-		-	
Water Quality/ Detention Ponds	0.19	0.07	**-**		10.2	15.4	**-**	
Bikeway Design at BNSF Railroad	*No Biological Resource Impacts Occur or are Associated with this Design Alteration*							
Bikeway Design at Walnut Creek	0.0002	0.0	**-**		**-**		0.08	0.0
Bikeway Alignment Change between Big Dry Creek and Westminster Blvd	0.75	0.45	-		0.76	1.62	-	
US 36 Horizontal and Vertical Design Refinements	2.92	3.10	0.36	0.4	15.2	15.6	2.28	2.64
Total D-B Project Impact Changes	**0.24**		**-0.034**		**-4.11**		**-0.27**	

[1] Some Wetland and Prairie Dog areas identified in Phase I of the ROD as being impacted are no longer present within the Project footprint (either for the Managed Lane project or for the Preferred Alternative). These are in the vicinity of 120th Avenue and the Arista Development. These areas have since been impacted and mitigated by the 120th Avenue Connection Project and other development projects, such as Arista.

Table 3: Summary of Increased/Reduced Wetland Impacts by Design Element

Design Element	Associated Wetland Impact/Reduction (Acres)	Comments
Change in Bikeway Alignment	+0.3	The majority of new wetland impacts are associated with the change of the commuter bikeway alignment between Big Dry Creek and Westminster Blvd (*see detailed discussion in Change in Commuter Bikeway Alignment between Big Dry Creek and Westminster Boulevard in previous section*). Additional changes in the commuter bikeway alignment occurred in the vicinity of Walnut Creek, resulting in an additional 0.0002 acres of wetland impact (*see detailed discussion in Bikeway Design at Walnut Creek in previous section*).
Wetland Impacts Not Included in EIS (but within the EIS Study Area)	+0.0068	Impacts to Allen Ditch for replacement of culvert under Turnpike Drive were not included in the FEIS or ROD
Change in Drainage Design/ New Water Quality Pond Locations	+0.12	Several water quality pond locations have changed, which have slightly increased wetland impacts. Additional changes to the drainage design have also occurred during thirty percent design.
Total	**+0.42**	*These impacts have been included in the Total Impacts for the US 36 Managed Lane Project*
Reduced wetland impacts due to roadway design changes or use of roadside wall	-0.18	Reduction in wetland impacts to 10 individual wetland areas within the Project footprint due to design refinements, changes in roadway design, or avoidance/minimization through use of roadside walls.
Total	**-0.18**	*These reductions have been subtracted from the Total Impacts for the US 36 Managed Lane Project*
Grand Total	**+0.24 Acres of Wetland Impacts**	

WILDLIFE (BLACK-TAILED PRAIRIE DOGS)

The black-tailed prairie dog (*Cynomys ludovicianus*) is considered by Colorado Parks and Wildlife (CPW) and the Colorado Natural Heritage Program (CNHP) as a species of special concern. The Colorado Department of Transportation (CDOT) has a specific prairie dog management policy that will be applied to prairie dogs impacted by the Project. In general, the total amount of prairie dog impacts have decreased, from a total of 34.3 acres based on the Phase I ROD improvements, to a total of 30.2 acres based on thirty percent design for the US 36 Managed Lane Project.

SENATE BILL 40 (STREAMSIDE RIPARIAN HABITAT)

Senate Bill 40 (SB 40; 33-5-101, et seq., C.R.S., 1973) requires any state agency to obtain certification from CPW when the state agency plans construction in any stream, its banks, or tributaries. Emphasis of this legislation is the protection of fishing waters in the state, but it also recognizes the importance of protecting the entire stream ecosystem, including wetlands and riparian areas. Under Colorado SB 40, any project affecting SB 40 jurisdictional streams, their banks, or tributaries is required to consult with the CPW. The following SB 40 jurisdictional streams were identified in the FEIS: Walnut Creek, Big Dry Creek, Rock Creek, and Coal Creek. No additional SB 40 jurisdictional streams will be impacted during the first phase of the project. **Table 2** provides a comparison of riparian impacts (ROD Phase I vs. current design).

WILDLIFE CORRIDORS

Wildlife corridors connect fragmented areas of habitat surrounded by developed or human-inhabited areas. US 36, like other highways, is a barrier to wildlife movement. As a result, mitigation measures were included in Phase 1 of the Preferred Alternative for the US 36 ROD to address the disruption/blockage of existing wildlife corridors and habitat fragmentation. Mitigation measures included specific recommendations (by drainage) and general guidelines for wildlife crossings to promote the improvement of wildlife corridors and connectivity to the extent practicable. Several meetings were held and additional studies conducted during preliminary design to determine if the specific structural recommendations were feasible to construct from a roadway design and drainage standpoint for the Project. **Table 4** provides a summary of specific recommendations presented in the ROD and FEIS.

Table 4: Wildlife Corridors- Mitigation Measures

Drainage	Specific Recommendations in ROD/FEIS	Comments
Big Dry Creek	The City of Westminster/UDFCD agreement that does not allow modification of the hydraulic capacity of the existing structures should be revisited to allow either a separate dry crossing for wildlife (preferred), or modification of the existing stream culvert to facilitate wildlife movement.	The agreement is still in place. The City of Westminster receives annual notices from UDFCD regarding the obligation that commits both parties to preserve the flood routing capabilities of the US 36 crossing of Big Dry Creek. As a result, the box culverts will be replaced in-kind to maintain hydraulic capacity.
Rock Creek	Replace triple box culvert with a bridge in the Preferred Alternative. The bridge will have an opening large enough to facilitate wildlife movement. The drainage structures proposed at Rock Creek in the ROD were a triple box at 16 feet x 12 feet	The existing crossing consists of two 14-x 8-foot Reinforced Concrete Box Culverts (CBC). The information in the ROD is incorrect. Specific design options are discussed below.
Coal Creek	A widening of the existing bridge at Coal Creek was proposed in the ROD. The FEIS recommended constructing a new bridge at this location.	Design options are discussed below.

Rock Creek and Coal Creek

The Project is proposing to change the type of structure to carry both Rock Creek and Coal Creek under US 36. At Coal Creek, the ROD assumed widening the existing bridge, while at Rock Creek the ROD recommended a triple box culvert. However, during preliminary design, no bridge options were considered at these two crossing locations because of CDOT's desire not to construct or extend a structure that would need to be replaced when future planned improvements are completed. The FEIS, on page 4.20-18, stated that "All build packages would provide a larger drainage structure to pass the 100 year flows under US 36 with a roadway grade rise." The only documentation related to other alternatives that were considered for the Coal Creek crossing is in the Conceptual Drainage Analysis, dated May 2009, where it stated that the roadway grade would need to be raised 12 to 16 feet or the channel profile could be lowered.

Rock Creek- Hydraulic Analysis

Based on hydraulic analysis, the preferred design at Rock Creek consists of replacing the existing culvert with two new concrete box culverts (CBC)—one 14 feet by 14 feet, and one 20 feet by 16 feet, which enhances the size of the opening for use by wildlife. This design alternative maintains a headwater to depth (HW/D) ratio of 1.0 for the 100-year design event but with a larger opening for wildlife. Per the general guidelines for wildlife crossings listed in the ROD, the new box culverts at Rock Creek will be bottomless with a natural substrate to promote wildlife usage. These locations also will include a shelf or raised dry ledge on the side of the channel above the ordinary high water mark to promote usage by small mammals.

Replacing the existing two cell culvert with two new CBCs with a larger opening will enhance and 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.

Coal Creek- Hydraulic Analysis

The ROD proposed a widening of the existing US 36 bridges over Coal Creek. The US 36 Managed Lane project is proposing to change the type of structure to carry Coal Creek under US 36, from a bridge widening, to a box or arch culvert that would accommodate the 100 year flows. Additional studies determined that the box or arch culvert can carry the required flows, is substantially less expensive, and would require less of US 36 to be raised in profile. The bridge widening that was assumed in the ROD has several disadvantages: it is not properly sized to carry 100 year flood flows, it creates low clearance problems for users of the trail and it is a throw away structure since could not be widened further to accommodate the ultimate roadway. The FEIS, on page 4.20-18, stated that "All build packages would provide a larger drainage structure to pass the 100 year flows under US 36 with a roadway grade rise." The only documentation related to other alternatives that were considered for the Coal Creek crossing is in the Conceptual Drainage Analysis, dated May 2009, where it stated that the roadway grade would need to be raised 12 to 16 feet or the channel profile could be lowered. Alternatives of widening the bridge or using a box or arch culvert structure were not mentioned in the FEIS nor in the Conceptual Drainage Report.

Replacing the type of structure would ensure that 100 year flows could be carried under US 36, would resolve the low clearance problems associated with the trail and would build a structure that would not be a throw away structure.

Riparian habitat and associated cottonwood woodlands are an important habitat type in the project area for wildlife, due to the numbers and richness of wildlife supported, and value as a general wildlife movement corridor. Coal Creek within the project area is a movement corridor for mule deer, as well as white-tailed deer concentration areas (CPW 2011). The creek, and associated riparian habitat (cottonwood riparian forest and riparian shrub (willow), provide habitat for a variety of common wildlife species, including coyotes, foxes, and variety of birds.

Short-term effects to wildlife from changing the structure type (bridge widening vs. box or arch culvert) are generally the same. Short-term effects of replacing this structure (regardless of structure type) include: temporary habitat loss, construction noise disturbance, and restrictions on wildlife movement.

The new culvert crossing at Coal Creek would consist of three 20- by 10-foot CBCs that would serve as a main channel, trail, and maintain the existing wildlife crossing/connectivity along the creek corridor. Per the general guidelines for wildlife crossings listed in the ROD, and guidelines listed in FHWA's Wildlife Crossing Structure Handbook (FHWA 2011), the new CBCs at Coal Creek will be bottomless with a natural substrate to promote wildlife usage and will have an opening with a minimum width of 16.5 feet and a minimum height of 10 feet. The low flow cell of the CBC will also include a shelf, or raised dry ledge, on the side of the channel above the ordinary high water mark to promote usage by small mammals. This design alternative maintains a HW/D ratio of 1.0 and provides the required hydraulic capacity.

Long-term wildlife effects generally include: habitat fragmentation, road mortality, permanent loss of habitat, and disruption of movement corridors. Several other design options were considered at this location (some included rerouting the channel to a new crossing location). However, maintaining the existing crossing at Coal Creek would not affect or change wildlife migration or movement patterns. 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.

THREATENED AND ENDANGERED SPECIES

No impacts to federally listed species are anticipated during the first phase of the Project. Occupied habitat for two federally listed species, the Preble's meadow jumping mouse (*Zapus hudsonius preblei*) and Ute ladies'-tresses orchid (*Spiranthes diluvialis*), generally occurs west of Davidson Ditch (outside of the construction limits for the Project). However, suitable habitat occurs along Dry Creek and Walnut Creek (within the construction limits) for the federally threatened Colorado butterfly plant (*Gaura neomexicana*). The Colorado butterfly plant is known to occur about 0.7 mile upstream of US 36 on Walnut Creek, but not within the construction footprint for the Project.

Based on the proximity to the known population of Colorado butterfly plant on Walnut Creek, design changes in the vicinity of Walnut Creek (i.e., a change in the commuter bikeway alignment) could potentially impact this federally listed species. As a result, surveys were conducted along Walnut Creek in July 2011. The timing of the survey coincided with the flowering period for this species. Prior to conducting the survey along Walnut Creek, several known populations of Colorado butterfly plant on City of Westminster Open Space property were visited to observe this species in full bloom (flowering plants were observed at two different locations along Walnut Creek west of the Project area). Following the observation of

blooming Colorado butterfly plant, the survey area (shown in **Figure 2**) was carefully inspected for the presence of this species. In addition, the dominant plant species were identified and photographs were taken.

Survey Results

The Colorado butterfly plant was not found within the survey area. In general, habitat within the vicinity of the proposed commuter bikeway is considered marginal for this species. Moreover, the vegetation in this location was fairly dense on the north banks of the creek and suitable hydrologic conditions were not present (due to the steep incised channel) on the south bank. Per mitigation measures specified in the ROD, additional surveys for the Colorado butterfly plant will be conducted within and adjacent to the construction footprint at Walnut Creek (and Dry Creek) prior to construction of the Project.

CONCLUSION

Based on the information presented above, it has been determined that the preliminary design associated with the US 36 Managed Lane Project does not result in any significant additional adverse impacts for biological resources when compared with the information presented in Phase 1 of the Preferred Alternative for the US 36 ROD. While design refinements have reduced impacts by 0.25 to approximately 10 individual wetland areas, several changes in the commuter bikeway alignment, and water quality pond locations, have slightly increased wetland impacts when compared to the ROD.

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Appendix:
January 24, 2012, USFWS Coordination Letter

STATE OF COLORADO

DEPARTMENT OF TRANSPORTATION

Region 6
2000 South Holly Street
Denver, CO 80222
(303) 757-9459
(303) 757-9073 FAX

January 24, 2012

Alison Michael
c/o US Fish and Wildlife Service
Colorado Field Office
P.O. Box 25486, DFC(MS65412)
Denver, CO 80228

Alison,

The US 36 Managed Lane Project (Project) will be awarding a design build contract in early 2012. This project represents one phase of planned improvements identified as Phase 1 of the Preferred Alternative in the US 36 Record of Decision (ROD). As a part of the ROD, CDOT has committed to coordinate with the USFWS during final design for each phase of the Project. The purpose of this memo is to describe the project and provide assurances that no impacts to federally listed species are anticipated as a result.

Project Description

The US 36 Managed Lane Project is a multi-modal, toll integrated project that will include reconstruction of the US 36 mainline pavement from Federal Boulevard to Interlocken Loop, with a potential extension to McCaslin Boulevard. The project will also include widening to accommodate a new buffer-separated Managed Lane in each direction of US 36; replacement of the Wadsworth Parkway, Wadsworth Boulevard, and Lowell Boulevard bridges; construction of retaining walls and sound walls; installation of Intelligent Transportation Systems; and construction of portions of a commuter bikeway.

Threatened and Endangered Species

No impacts to federally listed species are anticipated during the first phase of the Project. Occupied habitat for two federally listed species, the Preble's meadow jumping mouse (*Zapus hudsonius preblei*) and Ute ladies'-tresses orchid (*Spiranthes diluvialis*), generally occurs west of Davidson Ditch (outside of the construction limits for the Project). However, suitable habitat occurs along Dry Creek and Walnut Creek (within the construction limits) for the federally threatened Colorado butterfly plant (*Gaura neomexicana*). The Colorado butterfly plant is known to occur about 0.7 miles upstream of US 36 on Walnut Creek, but not within the construction footprint for the Project.

Based on the proximity to the known population of Colorado butterfly plant on Walnut Creek, design changes in the vicinity of Walnut Creek (i.e., a change in the commuter bikeway alignment) could potentially impact this federally listed species. As a result, surveys were conducted along Walnut Creek in July 2011. The timing of the survey coincided with the flowering period for this species. Prior to conducting the survey along Walnut Creek, several known populations of Colorado butterfly plant on City of Westminster Open Space property were visited

to observe this species in full bloom (flowering plants were observed at two different locations along Walnut Creek west of the Project area). Following the observation of blooming Colorado butterfly plant, the survey area (shown below in **Figure 1**) was carefully inspected for the presence of this species. In addition, the dominant plant species were identified and photographs were taken.

Survey Results

The Colorado butterfly plant was not found within the survey area. In general, habitat within the vicinity of the proposed commuter bikeway is considered marginal for this species. Moreover, the vegetation in this location was fairly dense on the north banks of the creek and suitable hydrologic conditions were not present (due to the steep incised channel) on the south bank. Per mitigation measures specified in the ROD, additional surveys for the Colorado butterfly plant will be conducted within and adjacent to the construction footprint at Walnut Creek (and Dry Creek) prior to construction of the Project. If they are encountered during construction, you shall be contacted immediately.

If you have any questions, please do not hesitate to contact me at 303-512-5872 or david.singer@dot.state.co.us.

Sincerely,

David Singer

CDOT Environmental Project Manager

CC: Mark Gosselin

Figure 1: Walnut Creek CO Butterfly Plant Survey Area