



**I-70 East ROD 1:
Phase 1 (Central 70 Project)**

**Updates to Biological Assessment
Addendum**

January 2017

TABLE OF CONTENTS

Chapter	Page
1 PURPOSE OF THIS REPORT	1
2 EFFECTS ANALYSIS UPDATES	1
2.1 Impacts from the Partial Cover Lowered Alternative	1
2.1.1 Ute ladies'-tresses orchid and Colorado butterfly plant.....	1
2.1.2 Bald Eagle.....	2
2.2 Impacts from Phase 1 of the Preferred Alternative	2
2.3 Comparison of Impacts of the Partial Cover Lowered Alternative with the Other Alternatives	3
2.3.1 No-Action Alternative	3
2.3.2 Build Alternatives.....	3
3 MITIGATION AND PERMITTING UPDATES.....	4

Tables

Table 1	Impacts to riparian areas by the Preferred Alternative, Phase 1	2
Table 2.	Projected impacts to riparian areas caused by the Build Alternatives	3
Table 3.	Comparison of impacts from the Partial Cover Lowered Alternative with the other alternatives	4

LIST OF ACRONYMS

EIS	Environmental Impact Statement
USFWS	U.S. Fish and Wildlife Service

1 PURPOSE OF THIS REPORT

This document has been prepared to provide updates and clarifications to the Biological Assessment Addendum (Attachment L of the I-70 East Final Environmental Impact Statement [EIS]). It presents changes in affected environment, design, environmental impacts, and mitigation measures for the project's Build Alternatives and Phase 1 of the Preferred Alternative discussed in the I-70 East Final EIS.

2 EFFECTS ANALYSIS UPDATES

Changes to the construction limits have led to minor changes in impacts to biological resources along the corridor. The revised construction limits extend farther south along the South Platte River to better reinforce the existing degraded bank. The riparian areas along the South Platte River were remapped to include the new areas, and impacts were calculated based on the revised construction limits.

All of the impacts to South Platte River riparian areas in Globeville Landing Park are expected to be short-term impacts since any trees removed during construction will be replaced per Denver's tree replacement policy.

In addition to the changes in impacts to the South Platte River, permanent impacts to biological resources since the Final EIS have increased for the Build Alternatives because the construction limits have expanded. The majority of the increase is east of Quebec Street, where the construction limits were pushed beyond the physically impacted area to the existing right-of-way boundary to represent a worst case for potential impacts. The changes to the impact assessment are detailed in the following subsections.

2.1 Impacts from the Partial Cover Lowered Alternative

The following species listed by the U.S. Fish and Wildlife Service (USFWS) with potential to occur in the project area are discussed in more detail in the 2014 Biological Assessment. The following section focuses on the changes to potential direct and indirect effects from the Partial Cover Lowered Alternative and the likelihood for the changes to occur since the publication of the Final EIS.

2.1.1 Ute ladies'-tresses orchid and Colorado butterfly plant

The most promising habitat for Ute ladies'-tresses orchids (*Spiranthes diluvialis*) and Colorado butterfly plant (*Gaura neomexicana ssp. Coloradensis*) in the project area remains the riparian and wetland habitats along Sand Creek. Because of bridge widening, the Partial Cover Lowered Alternative will result in direct, permanent impacts to Sand Creek riparian habitats, which will range from an estimated 0.495 acre to 0.695 acre (total project riparian impacts of 1.439 acres to 1.639 acres), depending on the General-Purpose Lanes Option or the Managed Lanes Option. Additionally, permanent impacts to wetland habitats at Sand Creek will range from 0.086 acre to 0.095 acre (total project permanent wetland impacts of 5.744 acres to 5.753 acres). Overall, the likelihood for Ute ladies'-tresses orchids or Colorado butterfly plant to occur along Sand Creek, or any part of the project area, remains low; therefore, the probability of direct or indirect impact also is low. Due to the general lack of suitable habitat and its likely absence from the project area, no

cumulative effects to either species are anticipated. The determination and rationale presented in the 2014 Biological Assessment remain valid.

2.1.2 Bald Eagle

The impacts to Bald Eagle (*Haliaeetus leucocephalus*) wintering range from the Build Alternatives are estimated to be 27.6 acres. The determination and rationale for Bald Eagles in the 2014 Biological Assessment remain valid.

2.2 Impacts from Phase 1 of the Preferred Alternative

Phase 1 does not consist of any improvements to the bridge spanning Sand Creek, but will widen the roadway east of the bridge to account for shoulder widening and restriping. Impacts during this phase are to areas that are already primarily disturbed or impermeable.

Phase 1 will have 23.0 acres of permanent, direct impacts to the Bald Eagle winter range. Much of the area is already impacted by the existing I-70 corridor, making it of marginal value to Bald Eagles. However, along I-70, impacts to black-tailed prairie dog towns are anticipated, which could potentially cause a slight decrease to the raptors’ prey base in the area.

Total riparian area impacts for Phase 1 will be 0.999 acre of permanent impacts and 0.892 acre of temporary impacts. The probability of the Ute-ladies’ tresses orchid and the Colorado butterfly plant existing in these areas is low. Effect determinations to the listed plants for Phase 1 are consistent with the Preferred Alternative determinations. Riparian impacts for Phase 1 are summarized in Table 1.

Table 1 Impacts to riparian areas by the Preferred Alternative, Phase 1

Waterbody	Feature ID	Preferred Alternative (acres)	
		Permanent	Temporary
South Platte River Riparian	Rip_N_Culv_03	0.002	0.012
	Rip_S_Culv	—	0.747
Sand Creek Riparian	Rip278-06	0.034	0.028
	Rip278-07	—	0.002
	Rip278-08	0.022	0.030
Other	Rip279-01	0.566	0.074
	Rip281-01	0.375	<0.001
Riparian Impact Total		0.999	0.892

Note: Impacts were calculated based on conceptual design and are subject to change.
Total impacts may not add due to rounding.

2.3 Comparison of Impacts of the Partial Cover Lowered Alternative with the Other Alternatives

2.3.1 No-Action Alternative

Due to the urbanized nature of the study area between Brighton Boulevard and Colorado Boulevard, replacement of the existing viaduct and construction of an onsite drainage system north of I-70 is expected to have negligible impacts to roadside vegetation. East of Colorado Boulevard, the No-Action Alternative consists of standard maintenance practices and also is expected to have negligible vegetation impacts. No wetland areas are expected to be impacted; however, there will be minimal impacts to riparian areas during the construction of an onsite drainage outfall to the South Platte River on the north side of I-70. This alternative would not impact Bald Eagle winter range or black-tailed prairie dog towns in the study area.

2.3.2 Build Alternatives

Similar to the No-Action Alternative, the western end of the corridor (Brighton Boulevard to I-270) is more urbanized, so both Build Alternatives are expected to have negligible impacts to vegetation in this area. From I-270 to Tower Road, roadway widening will directly impact roadside vegetation. Impacts to roadside vegetation are expected to be greater under the Managed Lanes Option compared to the General-Purpose Lanes Option because the overall footprint is wider on the eastern portion of the project.

Riparian areas will be affected by construction of the Build Alternatives, as shown in Table 2. The Build Alternatives also will impact wetland areas and are discussed in more detail in Section 5.15, Wetlands and Other Waters of the U.S, in the Final EIS. Total permanent impacts to riparian areas range from 1.439 acres to 1.639 acres depending on the Build Alternative and associated options. The difference in impacts between the Build Alternatives is a result of the offsite drainage system south of I-70, which will be constructed as part of the Partial Cover Lowered Alternative and result in an additional 0.747 acre of temporary impact to riparian habitat along the South Platte River. All of the impacts to South Platte River riparian areas in Globeville Landing Park are expected to be short-term impacts since any trees removed during construction will be replaced per Denver’s tree replacement policy.

Table 2. Projected impacts to riparian areas caused by the Build Alternatives

Alternative	Riparian Impacts (acres)	
	Permanent	Temporary
No-Action Alternative	0.002	0.012
Build Alternatives, General-Purpose Lanes Option		
Revised Viaduct Alternative	1.439	0.149
Partial Cover Lowered Alternative	1.439	0.895
Build Alternatives, Managed Lanes Option		
Revised Viaduct Alternative	1.639	0.166
Partial Cover Lowered Alternative	1.639	0.913

*Note: Impacts were calculated based on conceptual design and are subject to change.
Total impacts may not add due to rounding*

Permanent impacts to riparian areas will occur along Sand Creek caused by on-/off-ramps over Sand Creek and roadway widening. An additional 0.200 acre of permanent impact will occur to Sand Creek riparian

areas with the Managed Lanes Option. Temporary riparian impacts in the Sand Creek area will be an additional 0.018 acre for the Managed Lanes Option above each of the General-Purpose Lanes options. Permanent impacts will occur from the addition of new bridge piers, as well as through direct shading of vegetation near Sand Creek. Direct fill-related impacts from bridge piers are minimal within Sand Creek. Permanent fill-related impacts from bridge piers will total roughly 0.001 acre of waters of the U.S., including wetlands and 0.002 acre of riparian areas.

Indirect, permanent impacts at Sand Creek will result from interception of precipitation and shading, both of which affect vegetation growth. Temporary, construction-related impacts (such as site disturbance) to riparian areas from the No-Action Alternative and the Build Alternatives are similar. A comparison of impacts between the project alternatives is provided in Table 3.

Table 3. Comparison of impacts from the Partial Cover Lowered Alternative with the other alternatives

Alternative/Option	Impacts to Wildlife Habitat	Impacts to Riparian Areas	Impacts to Bald Eagle Winter Range
No-Action Alternative	3.5 acres of permanent, direct impact to wildlife habitat	0.002 acre of permanent and 0.012 acre of temporary impacts to riparian areas	No direct impacts
Revised Viaduct Alternative, General-Purpose Lanes Option	438.9 acres of permanent, direct impacts to wildlife habitat	1.439 acres of permanent and 0.149 acre of temporary impacts to riparian areas	27.6 acres
Revised Viaduct Alternative, Managed Lanes Option	523.1 acres of permanent, direct impacts to wildlife habitat	1.639 acres of permanent and 0.166 acre of temporary impacts to riparian areas	27.6 acres
Partial Cover Lowered Alternative, General-Purpose Lanes Option	447.5 acres of permanent, direct impact to wildlife habitat	1.439 acre of permanent and 0.895 acre of temporary impacts to riparian areas	27.6 acres
Partial Cover Lowered Alternative, Managed Lanes Option	531.7 acres of permanent, direct impact to wildlife habitat	1.639 acres of permanent impacts and 0.913 acre of temporary impacts to riparian areas	27.6 acres

Note: Total impact calculations do not account for overlapping wildlife areas.

3 MITIGATION AND PERMITTING UPDATES

Mitigation remains mostly the same as what was included in the Final EIS. The following mitigation commitment has been added to the biological resources mitigation measures with regard to Bald and Golden Eagles: Eagle nest surveys will be conducted during the appropriate seasons prior to construction beginning near the winter range and known nest sites, then they will be conducted annually between January 1 and April 31 for the remainder of construction, in the event that a Bald and Golden Eagle Protection Act permit is needed.