



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

**Updates to Wetlands and Other
Waters of the U.S. Technical Report
Addendum**

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LIST OF ACRONYMS

CDOT	Colorado Department of Transportation
CPW	Colorado Parks and Wildlife
EIS	Environmental Impact Statement
GLO	Globeville Landing Park Outfall
HGM	Hydrogeomorphic
I-70	Interstate 70
I-270	Interstate 270
MS4	Municipal Separate Storm Sewer System
OHWM	Ordinary high water mark
PEM	Palustrine emergent
PSS	Palustrine scrub-shrub
ROD	Record of Decision
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service

1 PURPOSE OF THIS REPORT

This document has been prepared to provide updates to the Wetlands and Other Waters of the U.S. Technical Report Addendum (Attachment N of the I-70 East Final Environmental Impact Statement [EIS]). It presents changes in affected environment, design, and environmental impacts for the project's No-Action Alternative, Revised Viaduct Alternative, Partial Cover Lowered Alternative, and Phase 1 of the Preferred Alternative, as discussed in the I-70 East Final EIS.

2 AFFECTED ENVIRONMENT CHANGES

Since the release of the Final EIS, further analysis has been conducted on wetlands and other waters of the U.S. On February 4, 2016, an additional resource feature (OW276-01) was identified within the study area near Madison Street and East 44th Avenue, south of Interstate 70 (I-70). The feature is classified as an ephemeral stream with a defined ordinary high water mark (OHWM). It performs as drainage for stormwater runoff to convey flows to the nearby Denver Municipal Separate Storm Sewer System (MS4), ultimately finding an outfall in the South Platte River. The feature is assumed to be under the jurisdiction of the U.S. Army Corps of Engineers (USACE). The new feature OW276-01, totaling 0.107 acre, is likely classified as a jurisdictional other water of the U.S. due to its downstream connection with the South Platte River. Figure 1 shows the location of OW276-01.

Figure 1 OW276-01 Location Map



In Attachment N, Wetlands and Other Waters of the U.S. Technical Report Addendum of the Final EIS, five features in the study area (OW279-01 through OW279-05) were classified as open waters. Under Section 404 of the Clean Water Act, the term open waters includes features with flowing or standing water to the extent that an OHWM can be determined. This includes streams, lakes, and ponds. Based on this definition, these five features were removed since they are stormwater basins and do not meet the criteria for open waters.

A total of 31 wetlands, totaling 7.143 acres, were identified within the study area. Six waters of the U.S. other than wetlands were identified in the project area: the South Platte River (OW-N_Culv_03 and OW-S_Culv), a South Platte tributary (OW261-01), an existing Sand Creek tributary (OW278-02 and OW278-03), and Sand Creek (OW278-01). Roughly 4.324 acres of the South Platte River channel and 4.510 acres of the Sand Creek channel, including the tributary, occur in the project area. Both rivers are perennial sand bed streams that generally flow in a northerly direction.

The jurisdictional status for each wetland and other water of the U.S. (not including the areas surveyed in April 2015 and February 2016) was determined based on the current guidance and approved by the USACE on July 9, 2013.

Since the I-70 East Project's offsite drainage had to be redesigned due to a conflict with Denver's Globeville Landing Park Outfall (GLO), and the GLO's impacts are being accounted for as part of the I-70 East Project, there are additional wetland impacts in Globeville Landing Park that weren't previously included as part of the I-70 East Project. A wetland and other waters of the U.S. delineation and impact analysis was conducted by Denver for the GLO Project. The delineation, performed on September 16, 2015, identified two new wetlands and one new other water of the U.S. within Globeville Landing Park, all of which are being added to the I-70 East Project wetlands analysis. The two wetland features, Wetland 1 and Wetland 2, total 0.040 acre and the detention basin totals 0.160 acre of additional other waters of the U.S. Previously, the features were not included in the I-70 East Project analysis because they are located 50 feet outside of the original construction limits. The Denver GLO Project also mapped the South Platte River channel (South Platte River Open Water), which was already included in the I-70 East Project analysis (OW_S_Culv). So as to not duplicate features, this analysis will use OW_S_Culv as the South Platte River channel mapped feature. Figure 2 shows the location of the new features associated with the GLO. A summary of the wetlands and other waters of the U.S. within the study area is provided in Table 1.

Figure 2 Wetlands and Other Waters of the U.S. Associated with the GLO Project

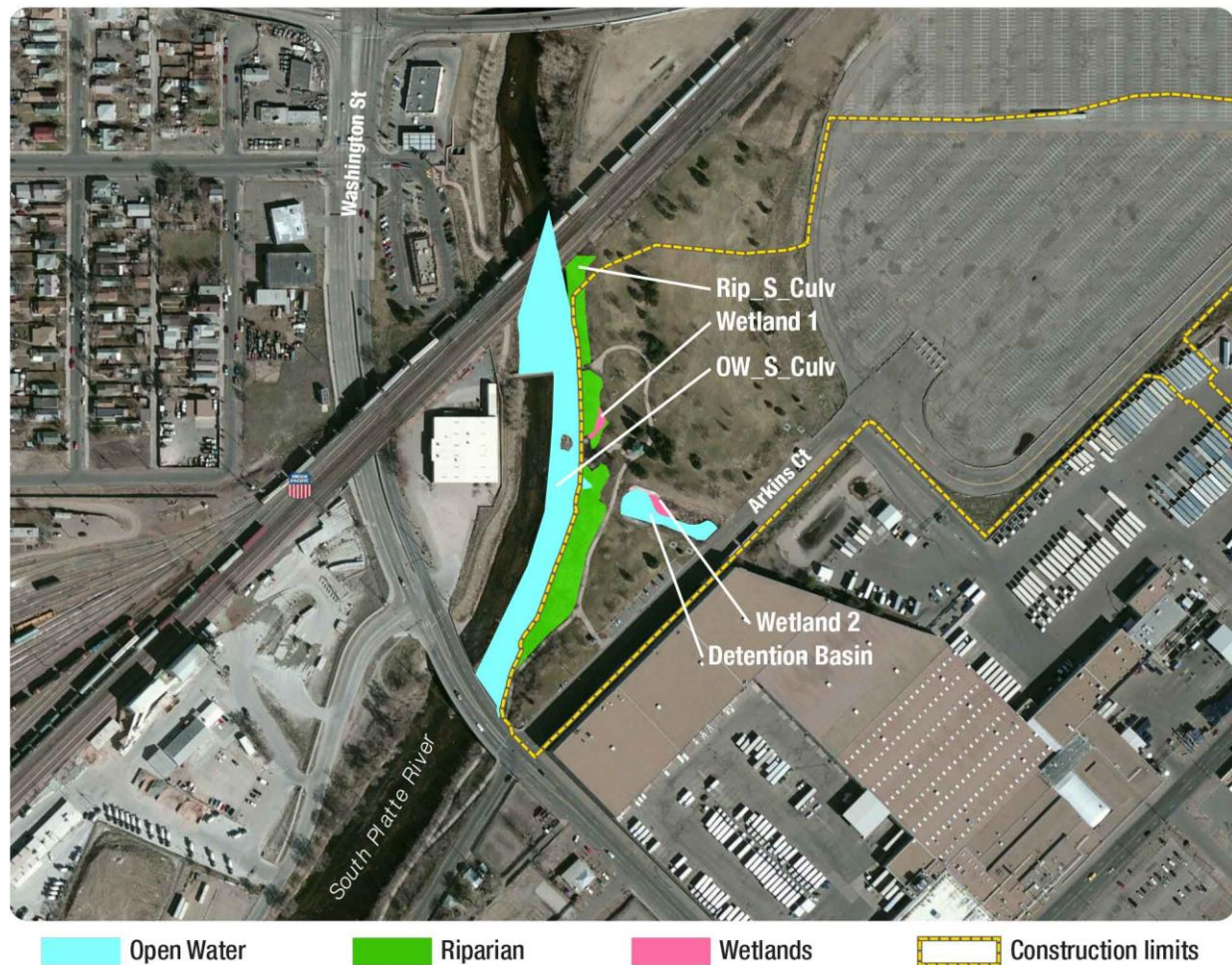


Table 1 Wetlands and Other Waters of the U.S. within 50 Feet of Construction Limits

Site ID	USFWS Type ¹	HGM Class ²	Jurisdiction	Size (acres)	Notes
WET278-08	PEM	R	Juris.	0.071	Sand Creek fringe
WET278-09	PEM	R	Juris.	0.095	Sand Creek fringe
WET278-10	PSS	R	Juris.	0.030	Sand Creek fringe
WET278-11	PSS	R	Juris.	0.046	Sand Creek fringe
WET278-12	PSS	R	Juris.	0.062	Sand Creek fringe
WET278-13	PEM	D	Non-juris. ³	0.068	Stormwater basin
WET279-01	PEM	D	Non-juris.	1.341	Stormwater basin
WET279-03	PEM	D	Non-juris. ³	0.111	Stormwater basin
WET279-04	PEM	D	Non-juris. ³	0.180	Roadside ditch
WET279-05	PEM	D	Non-juris. ³	0.381	Stormwater basin
WET280-01	PEM	D	Non-juris.	0.595	Stormwater basin
WET280-02	PEM	D	Non-juris.	0.091	Stormwater basin
WET280-04	PEM	D	Non-juris.	0.236	Stormwater basin
WET280-05	PEM	D	Non-juris.	0.022	Roadside ditch
WET280-06	PEM	D	Non-juris.	0.019	Roadside ditch
WET280-07	PEM	D	Non-juris.	0.044	Roadside ditch
WET280-08	PEM	D	Non-juris.	0.012	Roadside ditch
WET281-01	PEM	D	Non-juris.	0.024	Roadside ditch
WET281-02	PEM	D	Non-juris.	0.004	Roadside ditch
WET281-03	PEM	D	Non-juris.	0.022	Roadside ditch
WET281-04	PEM	D	Non-juris.	0.008	Roadside ditch
WET281-05	PEM	D	Non-juris.	0.024	Roadside ditch
WET281-06	PEM	D	Non-juris.	0.013	Roadside ditch
WET281-07	PEM/PSS	D	Non-juris.	0.625	Stormwater basin
WET282-01	PEM/PSS	D	Non-juris.	2.609	Stormwater basin
WET284-01	PEM	D	Non-juris.	0.336	Roadside ditch
WET285-01	PEM	R	Non-juris.	0.010	Roadside ditch
WET285-02	PSS	R	Non-juris.	0.034	Roadside ditch
WET285-03	PEM	R	Non-juris.	0.003	Roadside ditch
WET285-04	PEM	R	Non-juris.	0.012	Roadside ditch
WET285-06	PEM	D	Non-juris.	0.015	Roadside ditch
Wetlands total				7.143	
OW_N_Culv_03	Riverine	—	Juris.	2.621	South Platte River
OW_S_Culv	Riverine	—	Juris.	1.596	South Platte River

Table 1 Wetlands and Other Waters of the U.S. within 50 Feet of Construction Limits

Site ID	USFWS Type ¹	HGM Class ²	Jurisdiction	Size (acres)	Notes
OW276-01	Riverine	—	Juris. ³	0.107	Tributary of South Platte River
OW278-01	Riverine	—	Juris.	4.494	Sand Creek
OW278-02	Riverine	—	Juris. ³	0.013	Tributary of Sand Creek
OW278-03	Riverine	—	Juris. ³	0.003	Tributary of Sand Creek
Other waters of the U.S. total				8.834	
Wetland 1	—	—	Jurisdictional	0.020	South Platte River Seep
Wetland 2	—	—	Jurisdictional	0.020	Detention Basin
South Platte River Open Water	Riverine	—	Jurisdictional	See OW_S_Culv	South Platte River
Detention Basin Open Water	—	—	Jurisdictional	0.160	Detention Basin
Denver GLO wetland and other waters of the U.S. total				0.200	—
Wetlands and Other Waters of the U.S. Total				16.177	

Note: Total wetlands and other waters of the U.S. may not add due to rounding

1. U.S. Fish and Wildlife Service (USFWS) Type: PEM = palustrine emergent, PSS = palustrine scrub-scrub. After Cowardin et al., 1979.
2. Hydrogeomorphic (HGM) Class: D = depressional, R = riverine. After Smith et al. (1995).
3. These wetlands were delineated after a formal jurisdictional determination was made for the remaining 27 wetlands. Therefore, this determination is preliminary. USACE will make the final jurisdictional determination for these wetlands.

3 IMPACT ASSESSMENT UPDATES

The following section presents the results from the additional wetlands and other waters of the U.S. survey conducted after publication of the Final EIS. Due to design modifications and changes in the existing conditions, impacts to the Build Alternatives and Phase 1 have changed compared to what was reported in the Final EIS. The construction limits have been refined throughout the project corridor and the design of the Quebec Street on-ramp for the Preferred Alternative changed slightly, making the roadway profile smaller near Sand Creek. This accounted for a decrease in permanent impacts to previous jurisdictional wetlands between the Final EIS and the Record of Decision (ROD). The changes to the impact assessment are detailed in the following subsections.

3.1 Final EIS Alternatives

Since the Final EIS, the GLO Project has been included in the Partial Cover Lowered Alternative’s design, which has modified the previous design of the proposed south offsite drainage. Denver has determined the impacts for the GLO Project and has obtained a Section 404 permit from USACE. To be conclusive and transparent, this analysis reports the GLO impacts as they were permitted along with the rest of the I-70 East Project’s impacts to wetlands and other waters of the U.S.

The Build Alternatives will permanently impact jurisdictional wetlands ranging from 0.086 acre to 1.135 acres, depending on selection of the General-Purpose Lanes Option or the Managed Lanes Option. Temporary impacts to jurisdictional wetlands will be 0.003 acre for each of the Build Alternatives.

Impacts to non-jurisdictional wetlands will be the same for both of the Build Alternatives. Permanent impacts will total 5.618 acres and temporary impacts will total 0.078 acre for non-jurisdictional wetlands. Additionally, the Build Alternatives will result in permanent impacts to other waters of the U.S. ranging from 0.223 acre to 0.437 acre and temporary impacts ranging from 0.040 acre to 0.572 acre, depending on the selected Operational Option. The disparity in these impacts is due to the addition of the GLO, which alone adds 0.040 acre of permanent impacts to jurisdictional wetlands and 0.160 acre of permanent impacts to other waters of the U.S. Furthermore, as part of the Denver GLO Project, the existing bank along the South Platte River will be modified, leading to 0.490 acre of temporary impact to the South Platte River channel (GLO PCN, 2015).

Table 2 summarizes impacts to wetlands and other waters of the U.S. for each alternative, including the No-Action Alternative. Note, the north drainage impacts have decreased, leading to the No-Action Alternative impacts decreasing since the publication of the Final EIS.

Table 2 Impacts to Wetlands and Other Waters of the U.S.

Alternative/Option	Jurisdictional				Non-Jurisdictional	
	Wetlands (acres)		Other Waters of the U.S. (acres)		Wetlands (acres)	
	Perm	Temp	Perm	Temp	Perm	Temp
No-Action Alternative	—	—	—	0.005	—	—
Revised Viaduct Alternative, General-Purpose Lanes Option	0.086	0.003	0.223	0.040	5.618	0.078
Revised Viaduct Alternative, Managed Lanes Option	0.095	0.003	0.250	0.042	5.618	0.078
Partial Cover Lowered Alternative, General-Purpose Lanes Option	0.126	0.003	0.410	0.570	5.618	0.078
Partial Cover Lowered Alternative, Managed Lanes Option	0.135	0.003	0.437	0.572	5.618	0.078

Note: Impacts were calculated based on conceptual design and are subject to change.
Total impacts may not add due to rounding.
Permanent impacts to wetlands includes shading, which is discussed in detail below.

3.2 Phase 1 of the Preferred Alternative

Some of the construction activities for Phase 1 of the Preferred Alternative are proposed between Brighton Boulevard and Interstate 270 (I-270), where two lanes will be added in each direction to increase capacity on the highway. Most of this area is urban and contains very little wetlands or other waters of the U.S. The exception is the area near Sand Creek, where natural water features exist along the creek and intersect the construction limits just west of I-270. As a separate project in recent years, the bridge on I-70 over Sand Creek was rebuilt to widen the structure. Very little work to the Sand Creek Bridge is proposed for Phase 1, so minimal impacts to jurisdictional waters are anticipated.

The majority of the impacts to wetlands and other waters of the U.S. in Phase 1 will take place east of the Sand Creek Bridge over I-70. There will be 0.047 acre of permanent impacts and 0.008 acre of temporary impacts to jurisdictional wetlands. The rest of the wetland impacts in Phase 1 will occur in non-

jurisdictional roadside ditches and stormwater basin wetlands that exist along I-70. Impacts to these wetlands will be fill related due to the construction of one additional lane in either direction from I-270 to Chambers Road. Non-jurisdictional wetland impacts during Phase 1 will total 5.460 acres of permanent impacts and 0.073 acre of temporary impacts.

Phase 1 will have additional impacts to other waters of the U.S.—namely, direct impacts to the South Platte River and Sand Creek. The proposed design of I-70 as part of the Preferred Alternative requires three additional drainage systems, two that will outfall to the South Platte River and one that will outfall to a tributary to Sand Creek. The new drainage pipe to Sand Creek will replace portions of what is currently a tributary lined with riprap. Effects from the placement of the pipe would result in 0.009 acre of permanent impacts and 0.003 acre of temporary impacts. Impacts from the other three South Platte River drainage systems during Phase 1 result in total permanent, direct impacts of 0.187 acre, and total temporary impacts of 0.495 acre.

Table 3 and Table 4 summarize the impacts to wetlands and other waters of the U.S. in Phase 1 of the Preferred Alternative.

Table 3 Impacts to Wetlands for Phase 1 of the Preferred Alternative

Waterbody	Feature ID	Partial Cover Lowered Alternative, Managed Lanes Option (acres)	
		Permanent	Temporary
Jurisdictional	Wet278-09	0.006	0.007
	Wet278-10	<0.001	<0.001
	Wetland 1	0.020	—
	Wetland 2	0.020	—
Jurisdictional Total		0.047	0.008
Non-jurisdictional	Wet278-13	—	<0.001
	Wet279-01	1.341	—
	Wet279-03	0.003	0.006
	Wet279-04	0.180	—
	Wet279-05	0.381	—
	Wet280-04	0.236	—
	Wet280-05	0.018	0.003
	Wet280-06	0.019	<0.001
	Wet280-07	0.044	—
	Wet280-08	0.012	—
	Wet281-01	0.024	—
	Wet281-02	0.004	—
	Wet281-03	0.019	0.003
	Wet281-04	0.008	—
	Wet281-05	0.024	—
Wet281-06	0.013	—	

Waterbody	Feature ID	Partial Cover Lowered Alternative, Managed Lanes Option (acres)	
		Permanent	Temporary
	Wet281-07	0.625	—
	Wet282-01	2.462	—
	Wet284-01	0.049	0.060
Non-Jurisdictional Total		5.460	0.073
Wetlands Impact Total		5.507	0.081

Note: Impacts were calculated based on conceptual design and are subject to change.
Total impacts may not add due to rounding.
Permanent impacts to wetlands includes shading, which is discussed in detail below.

Table 4 Impacts to Other Waters of the U.S. for Phase 1 of the Preferred Alternative

Waterbody	Feature ID	Partial Cover Lowered Alternative, Managed Lanes Option (acres)	
		Permanent	Temporary
Jurisdictional (Other Waters of the U.S.)	OW_N_Culv_03	—	0.005
	OW276-01	0.027	0.040
	OW278-01	0.023	0.019
	OW278-02	0.006	0.003
	OW278-03	0.003	—
	OW-S_Culv	—	0.490
	Detention Basin	0.160	—
Other Waters of the U.S. Impact Total		0.219	0.557

Note: Impacts were calculated based on conceptual design and are subject to change.
Total impacts may not add due to rounding.
Permanent impacts to wetlands includes shading, which is discussed in further detail below.

Table 3 and Table 4 include shading impacts to wetlands and other waters of the U.S. in the vicinity of Sand Creek. The Colorado Department of Transportation (CDOT) will mitigate for these impacts per their own guidance; however, shading impacts are not regulated by USACE, and would not be considered a loss of waters of the U.S. during Section 404 permitting. Permitted impacts for discharge of dredged or fill impacts will be significantly less than those shown above and will remain within the Nationwide Permit 14 (Linear Transportation Projects) parameters. The permanent impacts for the project requiring a permit are currently estimated at 0.236 acre (0.040 acre of permanent wetlands impacts, and 0.196 acre of permanent impacts to other waters of the U.S.) for the Preferred Alternative.

Phase 1 will have minimal dredge and fill-related permanent and temporary impacts to waters of the U.S., including wetlands. It is likely that a Nationwide Permit 14 (Linear Transportation Projects) will permit the project, since anticipated impacts to jurisdictional wetlands are less than the threshold of 0.5 acre. In addition, a Senate Bill 40 wildlife certification from Colorado Parks and Wildlife (CPW) will be required. CDOT will complete the Senate Bill 40 wildlife certification and obtain a permit from the USACE before starting work.

4 MITIGATION AND PERMITTING UPDATES

The Wetlands and Other Waters of the U.S. Technical Report presented in the 2014 Supplemental Draft EIS provides a detailed discussion of the required and proposed mitigation measures planned for the I-70 East Project. There have not been any changes or updates to these measures for wetlands and other waters of the U.S.

No significant unavoidable negative effects have been identified for the Preferred Alternative.

4.1 Permitting

The permitting strategy presented in the Wetlands and Other Waters of the U.S. Technical Report Addendum as part of the 2016 Final EIS remains valid. The Wetland Finding has been revised and is included in Attachment C to the ROD.

Both of the Build Alternatives are expected to have minimal dredge and fill-related impacts caused by the installation of two bridge piers in Sand Creek for the proposed off-ramps. Even with the changes in the impacts to wetlands and other waters of the U.S. within the area, a Nationwide Permit 14 (Linear Transportation Projects) will be required, as discussed in the Final EIS, because the permanent impacts to jurisdictional wetlands and other waters of the U.S. (currently estimated at 0.236 acre for the Preferred Alternative) are less than the Section 404 Individual Permit threshold of 0.5 acre.

Denver has determined the impacts for the GLO be a total of 0.200 acre of permanent impact to wetlands and other waters of the U.S. and temporary impacts to wetlands and other waters of the U.S. that total 0.490 acre. Denver obtained a Section 404 Nationwide Permit 7 (Outfall Structures) from the USACE for these impacts associated with the GLO.

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