

## Technical Report: Wetlands

---

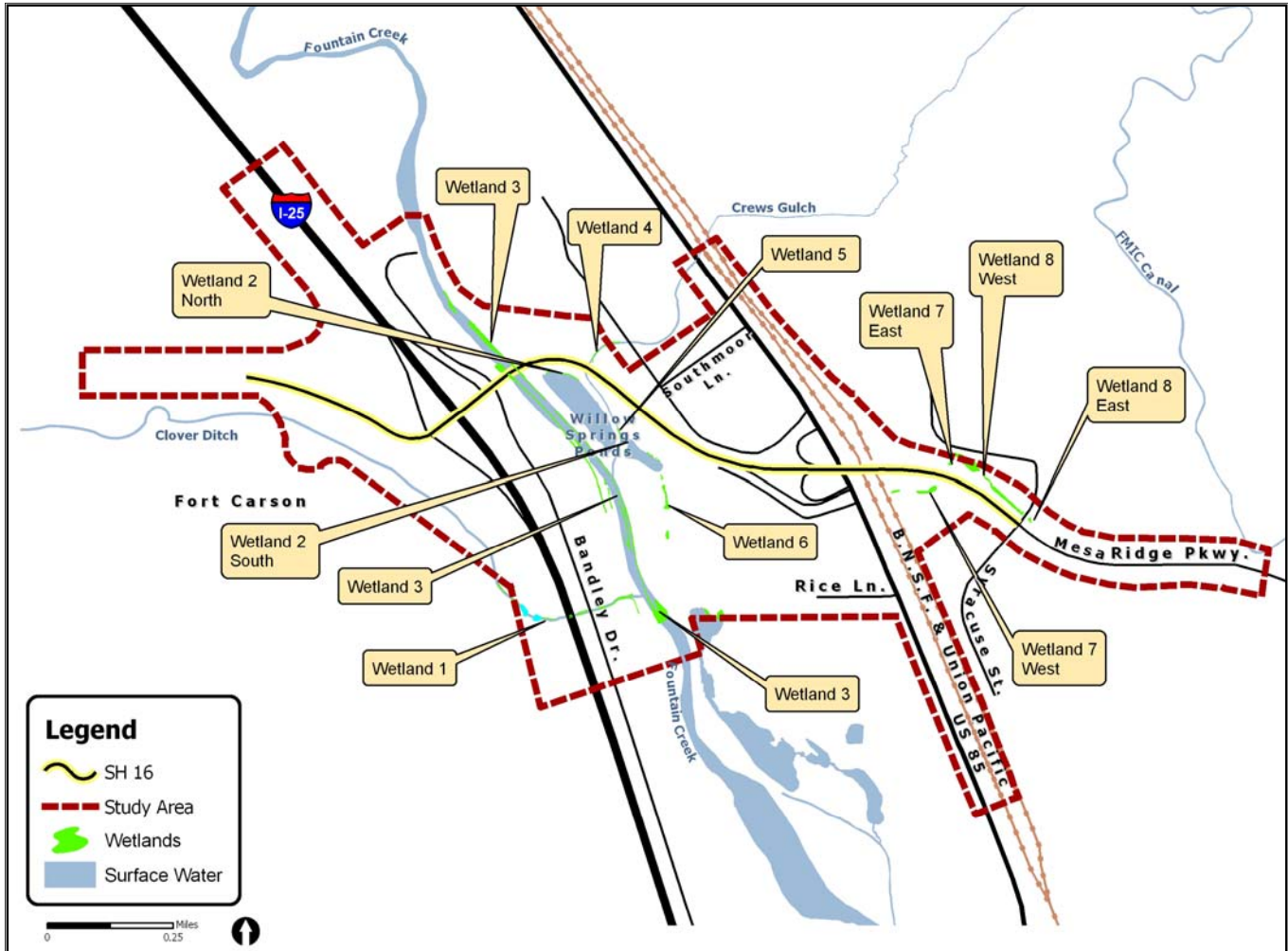
Wetland delineations of the State Highway 16 study area were conducted July 2002 in accordance with the U.S. Army Corps of Engineers (USACE) 1987 Wetlands Delineation Manual. Wetland determination was based on the presence of hydrophytic vegetation, hydric soils, and wetland hydrology. Following identification of the Proposed Action, wetlands in the proposed highway alignment adjacent to Fountain Creek and Crews Gulch were reviewed in late 2003, 2004, 2005, and 2006. The Fountain Creek area was redelineated in May 2006.

Since no wetland impacts will occur as a result of this project, the Colorado Department of Transportation does not require a Wetland Finding.

### WETLANDS EXISTING CONDITIONS

At the time of the summer 2002 survey ten wetland sites totaling approximately 3.04 acres were present within the study area. Subsequent review of sites in the vicinity of the Proposed Action, showed that two small wetland areas adjacent to south bound I-25 north of SH 16 and Crews Gulch wetlands (formerly Site 4) had insufficient hydrology to support wetlands and were vegetated by upland species. Changes from both effects of drought and bank modification activities have removed wetland areas on the west bank of Fountain Creek in the area of the SH 16 bridge. USACE has concurred that wetlands are no longer present at these sites (See Chapter 10.0 of the EA, Agency Correspondence). During an October 2004 site visit, Anita Culp of USACE directed that wetlands be mapped to show existing conditions, not conditions of 2002. Wetlands 1 through 6 are assumed to be USACE jurisdictional. **Table 1** lists wetlands as of 2006, their size, and type and **Figure 1** displays wetland locations.

Figure 1  
Wetlands in the SH 16 Study Area, as of 2006



**Table 1  
Wetlands of the SH 16 Study Area**

| Site ID      | Acres within Study Area   | Impacted Acres | Wetland Type             | Comments                      |
|--------------|---|----------------|--------------------------|-------------------------------|
| 1            | 0.09  | None           | Emergent                 | Tributary to Fountain Creek   |
| 2*           | 0.05  | None           | Emergent                 | Willow Springs Ponds margins  |
| 3            | 1.70  | None           | Emergent and Scrub-shrub | Fountain Creek                |
| 4            | Site #4 appeared to meet the USACE wetland criteria in 2002, but by 2004 ceased to meet these criteria due to changed local conditions. |                |                          |                               |
| 5            | 0.11  | None           | Emergent                 | Former Fountain Creek channel |
| 6            | 0.13  | None           | Emergent                 | Former Fountain Creek channel |
| 7**          | 0.17  | None           | Emergent                 | Constructed drainage channel  |
| 8**          | 0.79  | None           | Emergent and Scrub-shrub | Constructed drainage channel  |
| <b>Total</b> | <b>3.04</b>   | <b>None</b>    |                          |                               |

(\*)Note: Sites 2 includes both Wetland 2 North and Wetland 2 South as shown in Figure 1.

(\*\*)Note: Sites 7 and 8 both include Wetlands 7, 8 East and 7, 8 West as shown in Figure 1.

Source: Wetland Delineations and reviews of 2002, 2003, 2004, 2005, and 2006

Note: Wetland 4 had ceased to meet wetland criteria by the time of the 2004 site review and is not included in Table 1. Refer to the following section for further discussion.

**WETLAND DESCRIPTIONS**

Wetland types within the study area include the margins of Fountain Creek as well as its tributaries and former channels, Willow Springs Ponds, and constructed drainage channels and ditches. Wetland descriptions are based upon the 2002 surveys and subsequent field reviews and delineations. The major wetland type is palustrine emergent. Areas of palustrine scrub-shrub wetland are present adjacent to Fountain Creek and in a constructed drainage channel. Dominant vegetation includes obligate (species that almost always occur in wetlands) cattail, willow, bulrush, sedges, spikerush, and smartweed; facultative wetland (species that usually occur in wetlands) giant ragweed, curly dock, redtop, reed canarygrass and tamarisk; and facultative (species that sometimes occur in wetlands) quackgrass and ragweed. Wetland functions include bank stabilization, sediment/toxin retention, nutrient removal/transformation, food chain support, and wildlife habitat and travel corridor. Wetland values include visual quality and recreation.

**Wetland 1** is comprised of bands of intermittent palustrine emergent wetland adjacent to Clover Ditch. Site reviews showed similar conditions to the 2002 delineation. During 2002, dominant vegetation was giant ragweed, beggar’s tick, smartweed, and bulrush. Hydrology was supplied by flows from the Fort Carson sewage lagoons and by runoff.

Flows were present at the time of the 2002, 2004, and 2005 surveys. The drainage was actively eroding, and many steep cut banks were present. Soils were sand and gravel in downcut areas. In more stable areas, soils were very dark grayish brown clay with sand and gravel and strong brown mottles. Functions and values of this wetland include wildlife habitat and travel corridor, bank stabilization, sediment and toxin retention, nutrient uptake, food chain support, and visual quality.

**Wetlands 2 South and 2 North** are shoreline wetlands. Site reviews showed similar conditions to the 2002 delineation. During 2002, vegetation was comprised of a band of emergent threesquare bulrush, spikerush, veronica, and yellowcress along the north shore of the north Willow Springs Pond and widely scattered clumps of cattail, bulrush, threesquare bulrush, and western ragweed along the banks of the south pond. Hydrology was supplied by flows from a ditch entering the north pond and probably by a high groundwater table. Soils were black loamy sand. Functions and values of these wetlands include minor bank stabilization, wildlife habitat, and visual quality.

**Wetland 3** is comprised of intermittent bands of palustrine emergent wetland with patches of scrub/shrub wetland along the banks of Fountain Creek. By the time of the 2006 redelineation, the west bank vegetation in the area of the existing and planned SH 16 bridges had been invaded by weedy upland species including Canada thistle, timothy, and Chinese elm. Soils lacked mottling and were dry except at the edge of stream flows. Dominant vegetation of the east bank is red top and reed canarygrass. Hydrology is supplied by Fountain Creek overflows. Soils are generally loam or sand and gravel. Functions include minor bank stabilization, wildlife habitat, and food chain support.

**Wetland 4** had ceased to meet wetland criteria by the time of the 2004 site review. During 2005 and 2006 investigations the site remained dry and without wetland vegetation. At the time of the 2002 survey intermittent bands of giant ragweed and smartweed were present adjacent to and in the channel of Crews Gulch and hydrology was supplied by drainage flows. Functions of this wetland included minor bank stabilization and wildlife habitat.

**Wetlands 5 and 6** are palustrine emergent wetlands located in a probable former channel of Fountain Creek. Since these sites are not in the area of the Proposed Action, the wetland delineation has not been reviewed. During 2002, dominant vegetation of Wetland 5 was cattail, bulrush, and paniced bulrush. Soils were brown (10YR 5/2) sandy clay loam with strong brown mottles. In normal years, hydrology is probably supplied by a high groundwater table. Dominant vegetation of Wetland 6 was a vegetative sedge and bulrush. Soils of Wetland 6 were dark grayish brown (10YR 4/2)

sandy loam with strong brown mottles. Functions and values of this wetland include sediment/toxin retention, nutrient uptake, food chain support, wildlife habitat and travel corridor, and visual quality.

**Wetlands 7 West and 7 East** are palustrine emergent wetlands in a constructed drainage channel south of Mesa Ridge Parkway. Site reviews showed similar conditions to the 2002 delineation. During 2002, dominant vegetation of Wetland 7 West was stunted cattail with minor smartweed. Hydrology was provided by a culvert and by runoff. Soils were unmottled, very dark grayish brown (10YR 3/2) clay overlying cobbles. Dominant vegetation of Wetland 7 East was cattail, redtop, foxtail barley, and spikerush. An area of shallow open water was present in the center. Soils were unmottled, very dark grayish brown clay and were saturated to the surface. The site appeared to be in transition to a drier vegetation community. The channel between the two wetland sites was sparsely vegetated with annual grasses, and the two sites were probably a single wetland community prior to the drought. Functions of this wetland include wildlife habitat and travel corridor, bank stabilization, sediment and toxin retention, nutrient uptake, and food chain support.

**Wetland 8 East** is a palustrine emergent wetland at the outflow of a culvert at the southwest corner of Mesa Ridge High School and a drainage ditch along the north side of Mesa Ridge Parkway. Site reviews showed similar conditions to the 2002 delineation. During 2002, dominant vegetation was smartweed, curly dock, and yellowcress. A small area of open water with strands of algae was present. Hydrology was provided by culvert and ditch flows, and flows were present at the time of the 2002 and 2005 surveys. Soils were very dark gray and were too saturated to determine texture. Wetland functions include bank stabilization, sediment and toxin retention, nutrient uptake, and food chain support.

**Wetland 8 West** is a palustrine emergent wetland in a constructed drainage channel north of Mesa Ridge Parkway. Site reviews showed similar conditions to the 2002 delineation. During 2002, dominant vegetation is cattail, redtop, smartweed, and sandbar willow. Flows were present at the time of the 2002 and 2005 surveys. Hydrology was provided by flows from culverts and by runoff. Soils were very dark grayish brown clay with sand and gravel. Wetland functions and values include wildlife habitat and travel corridor, bank stabilization, sediment and toxin retention, nutrient uptake, food chain support, and visual quality.

## WETLAND IMPACTS

### No-Action Alternative

The No-Action Alternative would not impact jurisdictional or non-jurisdictional wetlands.

### Proposed Action

The Proposed Action would not impact jurisdictional or non-jurisdictional wetlands.

As noted earlier in Table 1, the Proposed Action would not result in permanent fill in any study area wetlands. Pier placement on the east side of Fountain Creek will avoid causing any fill in wetlands, and existing wetlands will be protected during construction by orange plastic fencing.

## MITIGATION

Although no wetlands will be impacted, project revegetation will include planting of plains cottonwood or other riparian trees in the low terrace on the west bank of Fountain Creek. Sandbar willow will be planted at the edge of flows to promote bank stabilization. All Tamarisk will be removed from the Fountain Creek floodplain in the project area. Tamarisk is an invasive species that is an excessive consumer of water, thus harming native wetland species.

All appropriate best management practices will be followed during construction. These could include:

- ▶ All wetland areas and water bodies will be protected from unnecessary encroachment by temporary and/or construction limit fencing.
- ▶ Sediment control measures such as silt fence or erosion logs will be placed as needed to prevent sediment from entering wetlands.
- ▶ No staging of construction equipment or storage of construction supplies will be allowed within 50 feet of a wetland or any water-related body.
- ▶ No fertilizers, hydrofertilizers, or hydromulching will be allowed within 50 feet of any stream, intermittent drainage, or wetland.
- ▶ No fueling will be allowed within 50 feet of wetlands.

## REFERENCES

Cowardin, L.M. et al. 1979. Classification of Wetlands and Deepwater Habitats of the United States. United States Fish and Wildlife Service. Biological Services Program; FWS/OBS-79/31.

Corps of Engineers. 1987. Wetlands Delineation Manual. Wetlands Research Program Technical Report Y-87-1. U.S. Army Corps of Engineers Waterways Experiment Station.

Drought.colostate.edu. 2004. Drought Watch: Dry March, Wet April – And May Somewhere in Between – Is Colorado Recovering from Drought?

Macbeth Division of Kollmorgen Instruments Corporation. Munsell Soil Color Charts. 1994. New Windsor, NY.

Reed, Porter B., Jr. 1988. National list of plant species that occur in wetlands: Central Plains (Region 5). Biological Report 88(26.10). Washington, DC: U.S. Department of the Interior, Fish and Wildlife Service. In cooperation with: National and Regional Interagency Review Panels.

U.S. Department of Agriculture, Soil Conservation Service in cooperation Colorado Agricultural Experiment Station. Issued June 1981. Soil Survey of El Paso County Area, Colorado.

U.S. Department of Agriculture, Natural Resource Conservation Service. 1998. Field Indicators of Hydric Soils in the United States, Version 4.0. G.W. Hurt, Whited, P.M., and Pringle, R.F. (eds.). USDA, NRCS, Ft. Worth, TX.

Weber, W.A. and Whittmann, R.C. 1996. Colorado Flora: Eastern Slope. University Press of Colorado. Niwot, Colorado.