

1 **WETLAND DELINEATION REPORT**



2 **Of**

3 **US 6 and Wadsworth Boulevard**  
4 **Corps File Number (NWO-2008-00454-DEN)**  
5 **Lakewood, Colorado**

6 **March 7, 2008**

7 Prepared For:

8 U.S. Army Corps of Engineers  
9 9307 South Wadsworth Boulevard  
10 Lakewood, Colorado 80128-6901

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44 The Colorado Department of Transportation (CDOT) is beginning data collection for the U.S.  
45 Highway 6 and Wadsworth Boulevard Interchange Environmental Assessment (EA) (CDOT Project  
46 STU #0062-019 (15215)). The initial project involves the environmental study of the existing  
47 interchange at 6<sup>th</sup> Avenue and Wadsworth Boulevard, including Wadsworth Boulevard from West  
48 3<sup>rd</sup> Avenue to West 13<sup>th</sup> Avenue in Lakewood, Colorado (Figure 1). CDOT has contracted with  
49 CH2M HILL to complete the EA for the interchange project. Pinyon Environmental Engineering  
50 Resources, Inc. (Pinyon), has been retained by CH2M HILL to evaluate environmental constraints  
51 resulting from the presence of wetlands or Waters of the US (WUS) as regulated by the U.S. Army  
52 Corps of Engineers (ACOE) under the authority of Section 404 of the Clean Water Act. This report  
53 describes the proposed project and presents the results of the associated jurisdictional wetland  
54 delineation.

55 The CH2M HILL contact for this project is Mandy Whorton. Her phone number is 720.286.5239,  
56 and her email is [Mandy.Whorton@CH2M.com](mailto:Mandy.Whorton@CH2M.com).

### 57 **1.1 Project Location**

58 The project is located in Lakewood, Colorado, along Wadsworth Boulevard between West 3<sup>rd</sup>  
59 Avenue and West 13<sup>th</sup> Avenue (Figure 1). The elevation of the Site is between 5,400 and 5,445 feet  
60 above mean sea level. Photographs of the Site are included in Appendix A.

61 Directions to the project from the ACOE, Denver Regulatory Office in Littleton, Colorado, are as  
62 follows:

- 63 • Travel north on South Wadsworth Boulevard approximately 12 miles to the intersection of  
64 West 3<sup>rd</sup> Avenue and Wadsworth Boulevard.

## 65 **1.2 Project Description**

66 The current project goal is to evaluate roadway improvement constraints resulting from the presence  
67 of wetlands or WUS in the project area. Three potential WUS are located within the project area.  
68 These include Dry Gulch, Lakewood Gulch, and McIntyre Gulch (Figure 1). There are also several  
69 storm water runoff areas located around the 6<sup>th</sup> Avenue and the Wadsworth Boulevard intersection.  
70 No standing water and no wetland vegetation were observed in these areas; however, they do have  
71 the potential to hold water during storm events. Due to this intermittent flow, a WUS jurisdictional  
72 determination by the ACOE has been requested for these storm water areas.

73 Dry Gulch is the most northerly feature, and flows from west to east, crossing Wadsworth Boulevard  
74 through an underground culvert just south of West 12<sup>th</sup> Avenue (Figure 2). Dry Gulch continues to  
75 the east where it converges with Lakewood Gulch approximately one mile west of the South Platte  
76 River. Dry Gulch has been significantly altered in the past through channelization, underground  
77 culverts, and adjacent development. A small abutting wetland occurs within the project area near  
78 Dry Gulch, east of Wadsworth Boulevard (Figure 2). The average channel width between the  
79 ordinary high water (OHW) mark was measured to be between five and 10 feet.

80 Lakewood Gulch crosses through the project area from the west to the east (Figure 1 and Figure 3).  
81 Lakewood Gulch passes beneath Wadsworth Boulevard approximately 90 feet north of West 8<sup>th</sup>  
82 Avenue through a box culvert. Lakewood Gulch continues to the east where it converges with Dry  
83 Gulch approximately one mile west of the South Platte River. Lakewood Gulch has also been  
84 impacted by channelization and adjacent development. Small abutting wetlands to Lakewood Gulch  
85 occur west and east of Wadsworth Boulevard (Figure 3). The average channel width between the  
86 OHW mark was measured to be between 10 and 12 feet.

87 McIntyre Gulch flows generally from the west to east in the vicinity of the project (Figure 1). The  
88 gulch parallels U.S. Highway 6 south and west of the intersection of U.S. Highway 6 and  
89 Wadsworth Boulevard (Figure 1). Approximately 700 feet west of that intersection, the gulch passes  
90 beneath U.S. Highway 6 and then flows to the northeast. McIntyre Gulch converges with Lakewood  
91 Gulch approximately 280 feet southwest of the intersection of West 8<sup>th</sup> Avenue and Wadsworth  
92 Boulevard (Figure 3). McIntyre Gulch is well channelized, with habitat dominated by riparian

93 species. No abutting wetlands were noted. The average channel width between the OHW marks was  
94 measured to be between five and seven feet.





## 2.0 Methods

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96 An initial assessment of the jurisdictional status of the Site was made using topographic maps and  
97 a preliminary visit to the Site by Pinyon biologist Matt Santo on July 2, 2007. A Jurisdictional  
98 Determination letter request was submitted to the ACOE on February 6, 2008. At the time of this  
99 report, a response had not been received. However, based on Pinyon's experience, it is likely that  
100 the three previously described waterways, Dry Gulch, Lakewood Gulch and McIntyre Gulch, located  
101 in the project area, are jurisdictional under Section 404 of the Clean Water Act, and subject to the  
102 regulatory authority of the ACOE.

103 Mr. Santo and Shannon Sikorski delineated the wetlands located within the project area on  
104 November 2, 2007. The delineation was performed in general conformance with the 1987 "Army  
105 Corps of Engineers Wetland Delineation Manual"(Wetland Training Institute, 1995).

106 Wetlands were defined by vegetative, hydrology and soil features, and the data was recorded onto  
107 field data sheets (Appendix B). Wetland indicator plant species were referenced in the National List  
108 of Plant Species (USFWS, 1999). Species were classified as OBL (obligate wetland species),  
109 FACW (facultative wetland species), FAC (facultative species), or UPL (upland species).

110 Soil and hydrology data were also collected at the selected sampling points on the subject Site.  
111 Wetland soil indicators may include presence of color streaking (mottling), gleying (grayish  
112 coloration), reducing conditions, sulfidic odor, and high organic content (or organic matter streaking  
113 in the surface layer of sandy soils). Hydrology indicators may include topographic positions,  
114 presence of standing water and/or saturated soil profiles conditions, drainage patterns, water marks,  
115 sediment deposits, and oxidized root channels in the upper 18 inches of the soil profile. Soil pits  
116 were hand excavated within, and adjacent to, potential wetlands to verify indicators of vegetation,  
117 wetland hydrology and hydric soils.



## 3.0 Results

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120 Once wetland vegetation was identified and wetland hydrology and soils were confirmed, the  
121 upland-wetland boundary was marked with wetland delineation pin flags. While in the field,  
122 wetland boundaries and the OHW mark were sketched onto an aerial photograph. The wetland-  
123 upland boundary, and OHW, were also recorded with a Trimble GeoXT Global Positioning System  
124 (GPS) unit. That data was downloaded and mapped in ArcGIS 9.2 mapping software (Figures 2 and  
125 3).

### 126 *Dry Gulch, Lakewood Gulch and McIntyre Gulch*

127 Dry Gulch, Lakewood Gulch, and McIntyre Gulch are channelized waterways, with thin riparian  
128 zones. These habitats have been limited by adjacent development and flood zone alterations. At  
129 the time of the Site visit, all three gulches were flowing, indicating a perennial flow. Small wetland  
130 populations were observed abutting Lakewood Gulch and Dry Gulch (Figures 2 and 3).  
131 Channelization prohibited wetland formation along McIntyre Gulch.

132 A total of four soil pits were excavated within the project area (Figures 2 and 3). Two pits were  
133 excavated along Lakewood Gulch, including one wetland and one upland (SP-1, and SP-2,  
134 respectively) (Figure 3). Two pits were excavated along Dry Gulch, including one upland and one  
135 wetland (SP-3 and SP-4, respectively)(Figure 2). The following presents the findings from  
136 information obtained from the soil pits.

#### 137 Soil Pit 1 - Wetland (Lakewood Gulch)

138 This pit was excavated on the south bank of Lakewood Gulch, east of Wadsworth Boulevard  
139 (Figure 3). Dominant wetland vegetation near this pit was peachleaf willow (*Salix*  
140 *amygdaloides*) and prairie cottonwood (*Populus deltoides*). Additionally, invasive Siberian  
141 elms (*Ulmus pumila*) were identified. Herbaceous vegetation was dominated by non-

142 wetland smooth brome (*Bromis inermis*). Hydrology indicators included saturated soils and  
143 drift lines. Hydric soils were indicated by dark brown (7.5YR 3/2) low chroma coloring.

144 Soil Pit 2 - Upland (Lakewood Gulch)

145 This pit was excavated north of Lakewood Gulch, and east of Wadsworth Boulevard (Figure  
146 3). Vegetation at this location was observed to be dominated by smooth brome, with minor  
147 populations of Japanese brome (*Bromus japonicus*) and Siberian elms. No wetland  
148 hydrology indicators were noted. A-horizon soils were observed to be very dark grayish  
149 brown (10YR 3/2) clayey sands. B-horizon soils were observed to be brown (10YR 4/3)  
150 sands. The soils were dry with tree roots from adjacent riparian vegetation. None of the  
151 three necessary wetland indicators, including dominant wetland vegetation, hydrology, or  
152 hydric soils, were observed at this location.

153 Soil Pit 3 - Upland (Dry Gulch)

154 Soil Pit 3 was excavated along the northern bank of Dry Gulch, east of Wadsworth  
155 Boulevard (Figure 2). Vegetation was dominated by herbaceous smooth brome, with minor  
156 populations of Canada thistle (*Cirsium arvense*) and common plantain (*Plantago major*).  
157 No hydrology indicators were noted. One soil horizon was excavated, and was a brown  
158 (10YR 4/3) clayey sand. The soil was dry with shallow roots present throughout. None of  
159 the three necessary wetland indicators were noted at this location.

160 Soil Pit 4 - Wetland (Dry Gulch)

161 This wetland pit was excavated north of Dry Gulch, along a wet bench east of Wadsworth  
162 Boulevard (Figure 2) A graminoid wetland was dominated by Emory's sedge (*Carex*  
163 *emoryi*), with minor populations of reed canary grass (*Phalaris arundinacea*), smooth  
164 brome, and Siberian Elms. Hydrology indicators were noted, including saturated soils, and  
165 wetland drainage patterns. Hydric soil indicators included gleying and high organic content  
166 in sandy soils.

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167 *Storm Water Drainage Areas*

168 Several storm water drainage areas were observed around the 6<sup>th</sup> Avenue and Wadsworth Boulevard  
169 intersection (Figure 3). Each area was given a distinct identification (example SD-01). SD-01 and  
170 SD-02 are located southwest of the intersection (Figure 3). These two areas are small,  
171 approximately one-foot wide shallow depressions, that parallel the 6<sup>th</sup> Avenue Frontage Road on the  
172 south side. Both depressions are vegetated with the non-wetland grass smooth brome, and were dry  
173 during the site visits. SD-01 receives runoff during storm events from the west. SD-02 receives  
174 runoff during storm events from the south. Both drainage areas continue until they intersect with  
175 McIntyre Gulch (Figure 3).

176 SD-03 is also located on the southwest side of the 6<sup>th</sup> Avenue and Wadsworth Boulevard intersection  
177 (Figure 3). This depression is a well defined, one-foot wide area, with sparse vegetation dominated  
178 by smooth brome. No wetland vegetation or standing water was observed in this area during the site  
179 visit. The ditch begins just north of West 5<sup>th</sup> Avenue and continues south along the 6<sup>th</sup> Avenue  
180 Frontage Road. This ditch opens into an area between the 6<sup>th</sup> Avenue Frontage Road and the  
181 eastbound Southbound Wadsworth Boulevard exit ramp (Figure 3). This area is dominated by  
182 roadside weeds with no potential wetlands. SD-03 receives storm water from the south and is  
183 connected to an underground culvert under West 5<sup>th</sup> Avenue (Figure 3). This culvert is fed by runoff  
184 from an adjacent parking area.

185 SD-04 is located on the southeast side of the 6<sup>th</sup> Avenue and Wadsworth Boulevard intersection  
186 (Figure 3). This depression is a well-defined, one-foot wide area, with sparse vegetation dominated  
187 by smooth brome. No wetland vegetation or standing water was observed in this area during the site  
188 visit. The ditch begins just north of West 5<sup>th</sup> Avenue on the west side of Webster Street and  
189 continues south and east along the 6<sup>th</sup> Avenue Frontage Road (Figure 3). This storm water area  
190 eventually empties into a small tributary of Lakewood Gulch just east of Vance Street (Figure 3).

191 Three other drainage areas, SD-05, SD-06 and SD-07, are also located on the southeast side of the  
192 interchange area (Figure 3). All three areas are confined within the interchange area. These areas  
193 have the potential to hold water during storm events, but do not support wetland vegetation. They  
194 are dominated by smooth brome. There were no other drainages identified in the corridor.



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## 4.0 Conclusions

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197 At the time of this delineation, project plans had not been finalized. It is likely that Dry Gulch,  
198 Lakewood Gulch and McIntyre Gulch, and associated wetlands, are Jurisdictional under Section 404  
199 of the Clean Water Act, and subject to the regulatory authority of the ACOE. As a result, work  
200 performed within these water ways and/or associated wetlands would require an ACOE permit, and  
201 depending on actual impacts, compensatory mitigation. The storm water areas have also been  
202 addressed as potential WUS. A Jurisdictional Determination of these areas has been submitted to  
203 the ACOE.

204 The final authority in permitting and mitigation related to impacts of regulated WUS and associated  
205 wetlands at this project rests with the ACOE. At this time, Pinyon requests a wetland delineation  
206 concurrence letter from the ACOE. Additional information about the project plans, impacts, and  
207 permit requests will be forwarded to the ACOE once project plans become available.





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## **6.0 Limitations**

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222 This report was prepared by Pinyon Environmental Engineering Resources, Inc., at the request of  
223 and for the sole benefit of CH2M HILL, or any entity controlling, controlled by, or under common  
224 control with CH2M HILL. The conclusions and recommendations offered in this report are based  
225 on the data obtained from a limited number of soil pits, and during a specific time of the year. Soil,  
226 hydrology and vegetation conditions typically vary even over short distances, and different seasons.  
227 Thus, the nature and extent of variations outside the soil pits may not become evident except through  
228 further investigation.

229 This report is for the exclusive and present use of CH2M HILL, or any entity controlling, controlled  
230 by, or under common control with CH2M HILL. This study makes no attempt to assess wetlands  
231 outside of the project area.

232 Conclusions stated herein refer only to the specific Site at the time of the investigation.