WETLANDS AND WATERS BASELINE EXISTING CONDITIONS MEMORANDUM

Oregon Department of Transportation
Highway 62 Corridor Solutions DEIS Project

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1.0 INTRODUCTION

The purpose of this memorandum is to document and describe existing baseline environmental conditions for wetland resources within the study area for the Oregon Department of Transportation's (ODOT) Highway 62 Corridor Solutions Draft Environmental Impact Statement (DEIS) Project. The ODOT Highway 62 Corridor Solutions DEIS Project will develop several alternative solutions that address safety and traffic congestion problems along Highway 62 (the Crater Lake Highway) from Medford to White City, Oregon.

The contents of this memorandum are based on a site reconnaissance conducted by Mason, Bruce & Girard, Inc. (MB&G) on June 28-29, 2004 and a subsequent updating of detailed wetland field studies conducted during 1999-2000.

2.0 METHODS

Documentation of current baseline environmental conditions, including the general locations and conditions of wetlands, required general literature-based research and a site reconnaissance to confirm the detailed field surveys conducting during 1999 -2000.

2.1 General Data Collection and Agency Contacts

General data collection and review included analysis of existing reports (MB&G 2000), US Geological Survey topographic quadrangles (USGS 1983), aerial photographs, US Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) maps (USFWS, Medford West 1994; Medford East 1994), the Medford Local Wetland Inventory (LWI) maps (City of Medford 2002), and the Jackson County Soil Survey (Johnson 1994).

2.2 Site Reconnaissance

In the spring of 1999, MB&G conducted preliminary wetland assessments of the project study area. In the spring and summer of 2000, MB&G personnel conducted wetland delineation fieldwork and mapped the wetland boundaries within the project study area (MB&G 2000). Prior to preparing this memorandum, MB&G personnel reviewed the original wetland fieldwork and revisited the project study area on June 28-29, 2004 to confirm approximate wetland boundaries identified in previous field surveys. The routine on-site determination methodology described in the U.S. Army Corps of Engineers (ACOE) Manual was used to delineate wetlands within the project study corridor. To be considered a jurisdictional wetland using the ACOE Manual, an area must meet specific criteria for wetland hydrology, hydric soils, and hydrophytic vegetation. MB&G personnel visited all stream and wetland areas within the limits of the project study area. All previously delineated wetland areas were visited and general observations were made

on the vegetation community, the condition of the wetlands, and the quality of the wetland and adjacent communities. Finally, MB&G biologists also noted any significant changes to land cover or land use within the project study corridor that had occurred since vegetation communities and other natural features were last mapped in 1999-2000.

3.0 EXISTING CONDITIONS

3.1 General Conditions

Within the project study area, the Natural Resources Conservation Service (NRCS) has mapped soils six soil types. The main non-hydric soils include the Agate-Winlo Complex (6B), Carney Clay (27B), Coker Clay (33A), and the Provig-Agate Complex (151C). Hydric soils include Cove Clay (35A), Padigan Clay (139A), and Phoenix Clay (141A). Principal characteristics for the mapped soil types are presented in Table 3.1.1 as paraphrased from the soil survey of Jackson County (Johnson 1994).

Table 3.1.1. Soils Mapped by NRCS within the Highway 62 Corridor Solutions DEIS Project.

Soil Series (Mapping Unit)	Hydric*	Soil/Water Characteristics
Agate-Winlo Complex (6B) 0 to 5% Slopes	No	The Agate-Winlo Complex consists of approximately 55% Agate soil and 35% Winlo soil. The components of this soil complex occur as areas so intricately intermingled that mapping them separately is not practical. The Agate soils are well-drained soils that are moderately deep to a hardpan. Permeability is moderately slow and runoff is slow. The Winlo soils are somewhat poorly-drained and shallow to a hardpan. These soils formed in alluvium derived from mixed sources. Permeability is slow and runoff is ponded. The hazard of water erosion is slight.
Carney Clay (27B) 1 to 5% Slopes	No	The Carney Clay is a moderately deep, moderately well-drained soil found on alluvial fans. This soil formed in alluvium derived primarily from tuff and breccia. Permeability is very slow, runoff is slow, and the hazard of water erosion is slight.
Coker Clay (33A) 0 to 3% Slopes	No	The Coker Clay is a very deep, somewhat poorly-drained soil found on alluvial fans. This soil formed in alluvium derived dominantly form tuff and breccia. Permeability is very slow, runoff is slow, and the water erosion hazard is slight.
Cove Clay (35A) 0 to 3% Slopes	Yes	The Cove Clay is a very deep, poorly-drained soil found on flood plains. This soil formed in alluvium derived dominantly from tuff and breccia. Permeability is very slow, runoff is slow, and the water erosion hazard is slight. The water table rises to within one foot of the surface from December through June.
Padigan Clay (139A) 0 to 3% Slopes	Yes	The Padigan Clay is a very deep, poorly-drained soil located in basins that formed in alluvium derived mainly from tuff and breccia. Permeability is very slow, runoff is ponded, and the water erosion hazard is slight.
Phoenix Clay (141A)	Yes	This moderately deep, poorly-drained soil is on alluvial fans. It formed in alluvium derived dominantly from tuff and breccia. In some areas the surface layer is gravelly or cobbly. Included in this unit are small areas of Carney soils on convex slopes, Padigan soils on concave slopes, Coker and Winlo soils, and soils that are similar to the Phoenix soil but have bedrock at a depth of 40 to 60 inches. Also included are small areas of Phoenix soils that have slopes of more than 3 %. Included areas make up about 10 % of the total acreage. Permeability is very slow in the Phoenix soil. Available water capacity is about 4 inches.
Provig-Agate Complex (151C)	No	This map unit is on fan terraces. This unit is about 60 % Provig soil and 30 % Agate soil. The components of this unit occur as areas so intricately intermingled that mapping them separately was not practical at the scale used. Included in this unit are small areas of Carney and Winlo soils, Cove and Padigan soils near drainageways and on concave slopes, and soils that are similar to the Provig soil but have sandstone bedrock at a depth of 40 to 60 inches. Also included are small areas of Provig and Agate soils that have slopes of less than 5 % or more than 15 %. Included areas make up about 10 % of the total acreage. The Provig soil is very deep and well-drained. It formed in alluvium derived from mixed sources. In some areas the surface layer is very cobbly. Permeability is slow in the Provig soil. Available water capacity is about 4 inches. Runoff is medium, and the hazard of water erosion is moderate. The Agate soil is moderately deep to a hardpan and is well drained. It formed in alluvium derived from mixed sources. In some areas the surface layer is gravelly or cobbly. Permeability is moderately slow in the Agate soil. Available water capacity is about 4 inches. Runoff is slow, and the hazard of water erosion is slight.

*As determined by the Natural Resource Conservation Service (NRCS 1995).

The NWI maps several waters and numerous wetlands within the project study area. The NWI maps Lone Pine Creek as Palustrine Emergent Seasonally Flooded excavated (PEMCx) wetlands. Upton Creek, also labeled as Upton Slough or Midway Creek on other mapping, is shown as Palustrine Emergent Seasonally Flooded (PEMC), with areas of Palustrine Scrub-Shrub Seasonally Flooded (PSSC) east of Highway 62. North of Upton Creek, Swanson Creek is mapped as Palustrine Emergent Seasonally Flooded (PEMC) wetlands. Whetstone Creek is shown as Palustrine Scrub-Shrub Seasonally Flooded, excavated (PSSCx) wetlands. The wetlands west of Highway 62 and north of Upton Creek include Palustrine Emergent Seasonally Flooded (PEMC), Palustrine Unconsolidated Bottom Permanently Flooded, diked/impounded (PUBHh), Lacustrine Littoral Unconsolidated Bottom Artificially/Permanently Flooded, excavated (L2UBKHx) (old log pond), and Palustrine Unconsolidated Semipermanently Flooded (PUBFx). Adjacent to Swanson Creek, several small wetlands are mapped within the project study area and include Palustrine Emergent Seasonally Flooded, excavated (PEMCx), Palustrine Unconsolidated Bottom Semipermanently Flooded, excavated (PUBFx) and Palustrine Emergent Seasonally Flooded (PEMC) wetlands. One wetland near Whetstone Creek is mapped as Palustrine Emergent Seasonally Flooded, excavated (PEMCx) wetland.

The LWI includes Lone Pine Creek, Upton Creek (labeled as Midway Creek), and Swanson Creek within the inventory. The LWI identifies several locally significant wetland just north of Lone Pine Creek and several large locally significant wetlands (and wetland/upland mosaics) just north of Upton Creek. Two locally significant wetlands were mapped in the vicinity of Swanson Creek.

3.2 Waters of the State/U.S.

From south to north, four principal streams flow through the project study area: Lone Pine Creek, Upton Creek, Swanson Creek, and Whetstone Creek (Figure 1). Jack Creek, a small intermittent stream system, flows through the northern part of the project study area. Other map sources identify Jack Creek as a northern branch of Whetstone Creek. The Aquatic Baseline Existing Conditions Memorandum (MB&G 2004) contains a more thorough discussion on stream conditions in the project study area.

3.3 Wetlands

Based on MB&G's review of existing wetland information and the results of the June 28-29, 2004 field reconnaissance, four types of wetlands were identified within the project study corridor: Palustrine Emergent, Palustrine Scrub-Shrub, Palustrine Forested, and disturbed drainage and irrigation ditches.

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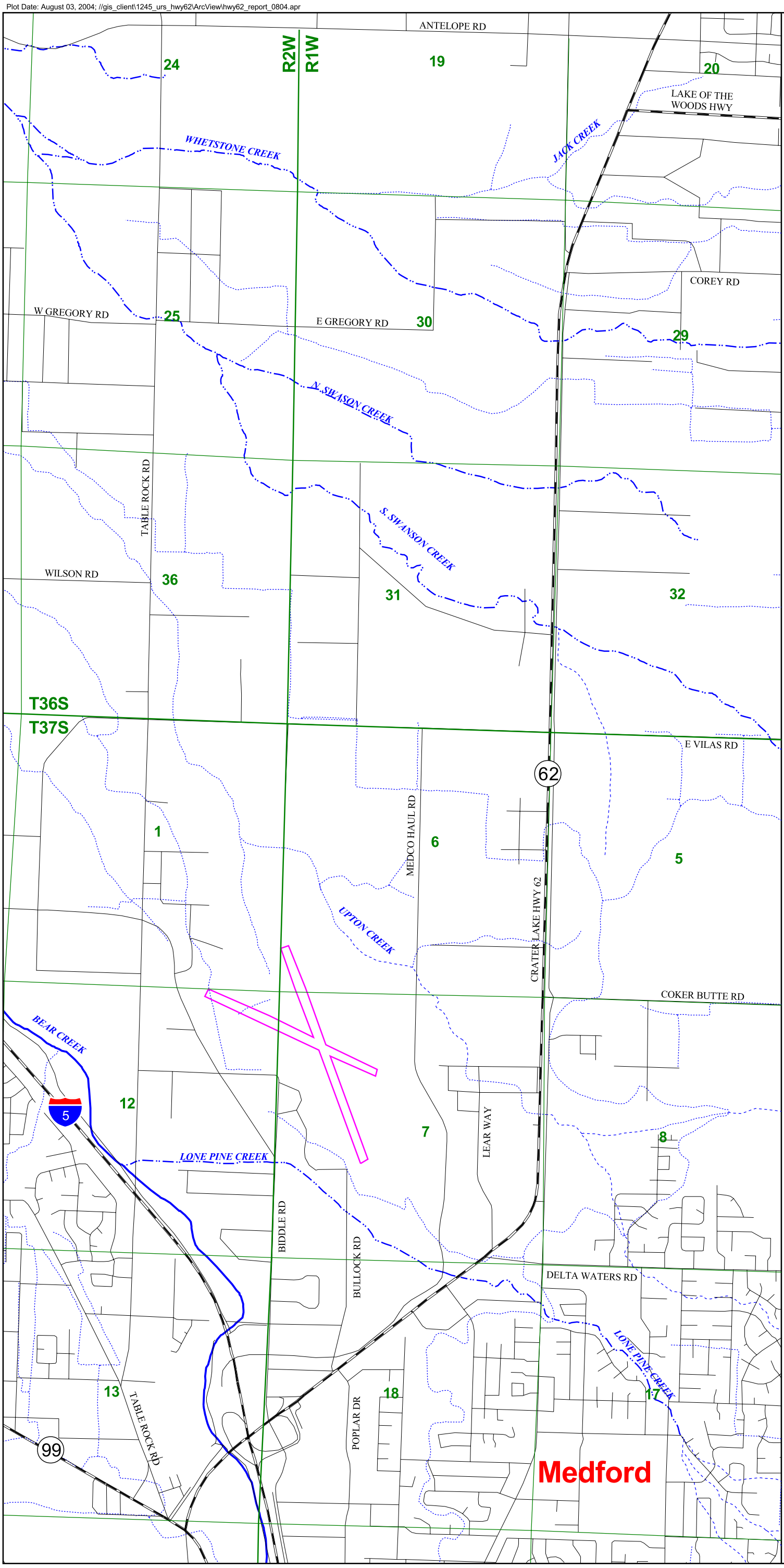

Highway 62 Corridor Project

Highway 62/Crater Lake Hwy Corridor Solutions Project

Medford, Oregon

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Map Features

Roads
- Highways
- Other Roads

Streams
- Large
- Medium
- Small
- Canals/Ditches/ Culverts

- Runways
- Section Lines

0 250 500 750 1000 Meters

0 1000 2000 3000 Feet

Figure 1

Principal Streams and Waters

Palustrine Emergent wetlands were generally associated with the riparian areas and floodplains of Lone Pine Creek, Upton Creek, Whetstone Creek, and portions of Jack Creek (Figure 2). Several other emergent wetlands were located south of Swanson Creek. Palustrine Emergent wetlands in the project study area were typically dominated by soft rush (*Juncus effusus*), cattail (*Typha latifolia*), velvet grass (*Holcus lanatus*), and reed canarygrass (*Phalaris arundinacea*). Other common species included rusty popcorn flower (*Plagiobothrys nothofulvus*), purple loosestrife (*Lythrum salicaria*), coyote thistle (*Eryngium petiolatum*), and small-flowered bulrush (*Scirpus microcarpus*). The June 2004 reconnaissance located all of those wetlands identified during the 2000 fieldwork and noted that current conditions were only slightly more degraded than conditions observed in the 2000 site visits. This may be due to increased commercial development as well as road construction and the corresponding removal of upstream vegetation in the watersheds of each creek.

Palustrine Scrub-Shrub wetlands were found within the floodplains of Swanson Creek, portions of Whetstone Creek, and both tributaries of Jack Creek (Figure 2). Vegetation was dominated by black cottonwood (*Populus balsamifera* var. *trichocarpa*), Oregon ash (*Fraxinus latifolia*), Himalayan blackberry (*Rubus discolor*), and willows (*Salix* spp.). It was noted during the June 28-29, 2004 site reconnaissance that the condition of Scrub-Shrub wetlands was relatively unchanged since the 2000 site visits.

North of Lone Pine Creek and just east of the Medco Haul Road, several Palustrine Forested wetlands were found in an abandoned borrow pit or excavation operation (Figure 2). The dominant shrubs and trees within these ponded forested areas were black cottonwood, Oregon ash, and willows. These wetlands were unchanged from the 2000 site visits. However, the surrounding area to the east has been altered due to construction activities for commercial development.

Numerous roadside drainage ditches and irrigation ditches constitute were found within the project study corridor. These features were generally dominated by Himalayan blackberry, cattail, and reed canarygrass and were highly disturbed. Many of these ditches are maintained on a regular basis. These degraded wetlands were in a similar condition to the ones documented in the 2000 site visits.

3.4 Vernal Pool Complexes

Vernal pools were located throughout the project study corridor during the 1999-2000 site visits. Vernal pool complexes within the project study area are characterized by raised mounds interspersed with seasonally inundated pools. In 1998, these complexes covered approximately 9% of the project area (MB&G 2000); however, due to continuing commercial development in the area, this is almost certainly an overestimate of the current extent of vernal pools. Major complexes with the project study area are west of Highway 62 and north of Commerce Drive, and most lie east of the Medco Haul Road. Although vernal pool complexes provide critical habitat for two endangered plant species, Cook's lomatium (*Lomatium cooki*) and large-flowered wooly meadowfoam

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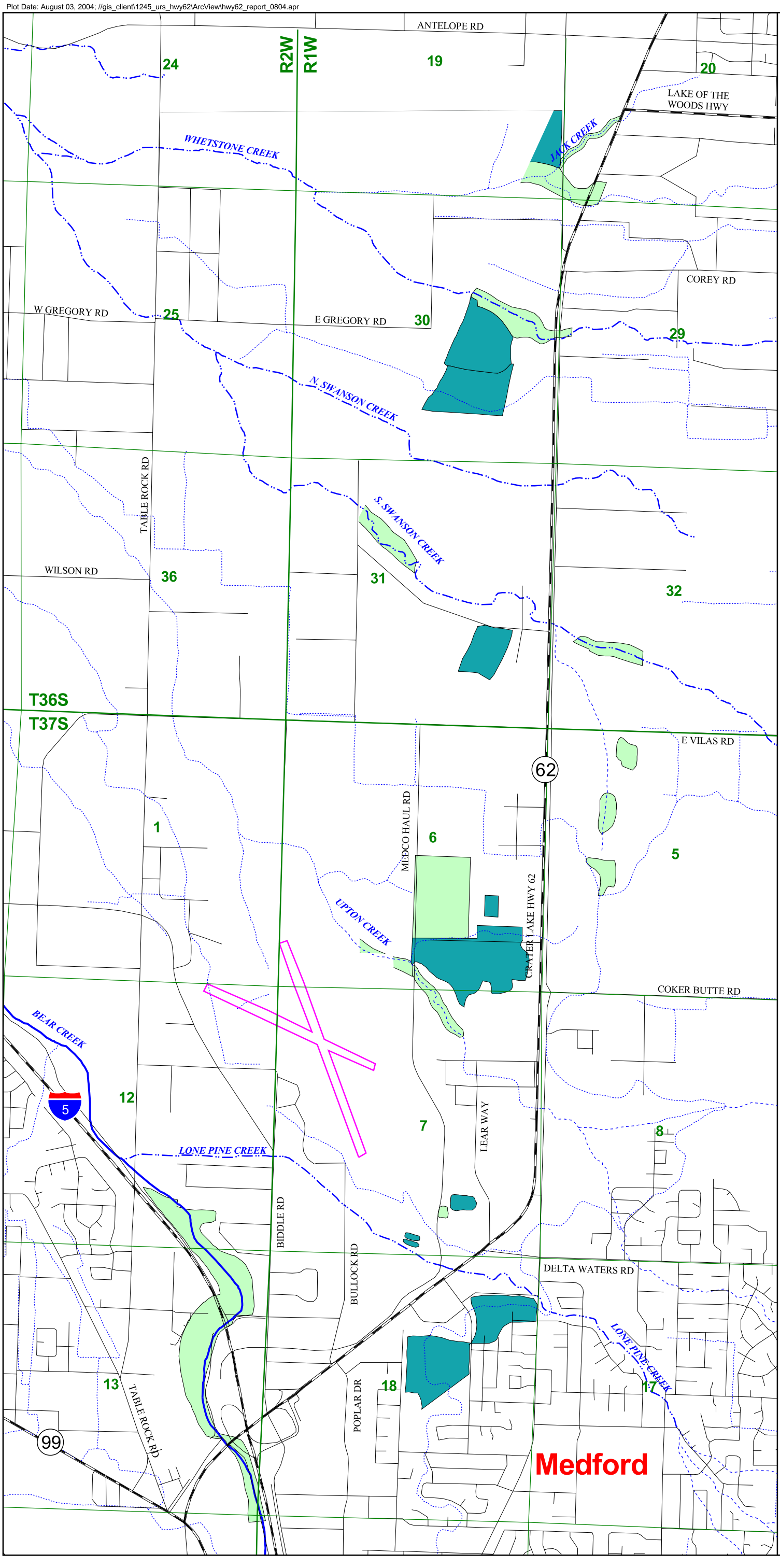

Highway 62 Corridor Project

Highway 62/Crater Lake Hwy Corridor Solutions Project

Medford, Oregon

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Map Features

- Riparian/Aquatic/ Wetland
- Mound-Vernal Pool Complex

Roads

- Highways
- Other Roads

Streams

- Large
- Medium
- Small
- Canals/Ditches/ Culverts

- Runways
- Section Lines

0 250 500 750 1000 Meters

0 1000 2000 3000 Feet

Figure 2

Principal Wetland Resources

(*Limnanthes flocossa* ssp *grandiflora*), and two rare species, Southern Oregon buttercup (*Ranunculus austro-oreganus*) and coral-seeded allocarya (*Plagiobothrys figuratus* ssp *corallicarpus*), they are dominated by exotic species, especially medusahead (*Taeniatherum caput-medusae*) and yellow-star thistle (*Centaurea solstitialis*). Vernal pools also provide critical habitat for the federally-listed vernal pool fairy shrimp (*Branchinecta lynchi*). The best quality pools occur within a complex located on a parcel of land south of Coker Butte Road, east of Upton Slough, and north of Commerce Drive. This complex contains a vernal pool (6C-VP30) that contains cysts identified as belonging to the genus *Branchinecta* (May Consulting 1999). Several of the pools in this complex are deep and wide, although the quality of all pools in the project study area has been degraded by the invasion of exotic plants, road construction, and illegal trash dumping.

4.0 SUMMARY

The principal wetland resources within the project study area are the Palustrine Emergent wetlands. These wetlands constitute over 75% of the wetlands identified within the project study area and are largely confined to the riparian corridors along the principal streams of the project study corridor. Encroachment from recent commercial development and road construction has altered the functions of these wetlands. Linear wetlands are associated with roadside drainage ditches and irrigation ditches that dissect the project study corridor. Most of these linear wetland features are routinely maintained. The Scrub-Shrub and Forested wetlands occur in scattered locations along the riparian corridor and remain largely unchanged from the 1999-2000 site visits.

5.0 REFERENCES

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