



January 31, 2011

Mr. Brian Donahue
U.S. Army Corps of Engineers, Kansas City District
Regulatory Branch
601 E. 12th Street
700 Federal Building
Kansas City, MO 64106

Wetland Delineation Report
Bannister Federal Complex Project
U.S. General Services Administration (GSA)
Burns & McDonnell Project No. 59369

Dear Mr. Donahue:

INTRODUCTION

Burns & McDonnell Engineering Company, Inc. (Burns & McDonnell), on behalf of the U.S. General Services Administration (GSA), respectfully submits this wetlands delineation letter report for the Bannister Federal Complex (BFC), located at 1500 East Bannister Road in Kansas City, Missouri. The GSA has proposed that their operations be relocated from the BFC. The GSA currently shares property within the BFC with one other landholding agency, the National Nuclear Security Administration (NNSA), and several other federal agency tenants. The NNSA currently owns and occupies a significant portion of the BFC for manufacturing operations. NNSA operations are being relocated to a new, leased facility approximately eight miles south of the BFC's existing location in south Kansas City, Missouri. The relocation of NNSA operations from the BFC is scheduled to begin in the first calendar quarter of 2013, with the relocation of GSA operations from the BFC planned for 2017. Before alternatives for facility reuse or disposition of the GSA facility can be developed, GSA must complete a wetland delineation of the BFC as part of the site disposition planning effort.

The GSA is one of two property landholding agencies of the BFC and has operations on, and custody and control of, approximately 164 acres of the BFC (Figure 1, Appendix I). The remainder of the BFC is owned and occupied by the NNSA. In 2009, the NNSA tracts at the BFC were surveyed and a wetland delineation report was prepared, but the GSA controlled tracts were not surveyed at that time. In 2010, a wetland delineation was conducted on the GSA portion of the BFC and this report was prepared to summarize that delineation.

The GSA portion of the BFC (Survey Area) is split into six tracts (Tracts 1 through 6; Figures 1-4, Appendix I). Tract 1 is a long narrow tract that contains a drainage ditch and comprises the northern extent of the property, Tract 2 consists of an existing building with a drainage swale, Tract 3 is a levee-protected tract that drains runoff from the eastern portion of the BFC, Tract 4 is comprised of existing structures and parking lots, and Tracts 5 and 6 consist of numerous existing structures and buildings that share a common drainage on the west side.

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METHODS

The following paragraphs summarize the methods used for the review of existing data and the wetland delineation.

Existing Data Review

Burns & McDonnell's review of existing information for the Survey Area prior to conducting the wetland delineation included the following resources:

- U.S. Geological Survey (USGS) 7.5-minute topographic map (2002 Grandview, Missouri quadrangle)
- U.S. Fish & Wildlife Service (FWS) National Wetland Inventory (NWI) map (2005 Grandview, Missouri quadrangle)
- U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) *2005 Soil Survey of Jackson County, Missouri*
- available aerial photography (2009)

These maps are included as Figures 2 and 3 in Appendix I.

Wetland Delineation

A delineation of the Survey Area was conducted on December 6 and 8, 2010, for wetlands and waters of the United States. This survey followed the guidelines of the *1987 Corps of Engineers Wetlands Delineation Manual* (1987 Manual) and the *2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region* (Regional Supplement). Sample plots were established, and Wetland Determination Data Forms from the Regional Supplement were completed to characterize the wetland areas and adjacent uplands (Appendix II). Vegetation, soil conditions, and hydrologic indicators were recorded at each of these sample plots. All sample plots, wetland boundaries, and photo points were surveyed using a global positioning system (GPS; Trimble® Pro XRS sub-meter GPS unit). Natural color photographs were taken on-site and are included in Appendix III.

RESULTS

Results from the existing data review and wetland delineation are presented in the following paragraphs.

Existing Data Review

The USGS topographic map and the FWS NWI map of the Survey Area were reviewed to familiarize Burns & McDonnell wetland personnel with the topography and potential for wetlands and other waters of the United States within the Survey Area (Figure 2, Appendix I). The topography of the Survey Area is relatively flat with several significantly incised drainage swales that have been created or modified during the development of the BFC. The Survey Area lies northwest of the confluence of Indian Creek (along the south) and Blue River (along the east). The NWI data shows a palustrine emergent (PEM) wetland in the middle of Tract 3. No other NWI features are present within the Survey Area. Wetland identification criteria differ between the FWS

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and the Corps; as a result, wetlands shown on an NWI map may not be under the jurisdiction of the Corps. Similarly, jurisdictional wetlands are often not included on these maps. Therefore, wetland abundance based on FWS NWI maps cannot be assumed to be an accurate assessment of jurisdictional wetlands in all cases.

The 2009 National Agricultural Imagery Program (NAIP) aerial photography for Jackson County, Missouri was reviewed to familiarize personnel with the Survey Area (Figure 3 and 4, Appendix I). Much of the Survey Area is BFC infrastructure including buildings and parking lots. Grassy and wooded areas are located in Tracts 1-3 and 6. Tracts 2 and 3 are heavily modified, levied drainage swales that are designed to handle significant runoff; Tract 3 is designed to be a large flood retention basin. Tracts 5 and 6 are configured to convey water south towards Bannister Road. Both appear to have brushy riparian corridors surrounding a common stream.

Large areas of fill material were placed throughout portions of the Survey Area as the site was developed. Extensive site investigations have been conducted to identify areas of soil contamination, and associated soil boring logs typically identify the upper two to three feet of soils as consisting of fill or disturbed material. Information on native soils within the Survey Area was obtained from the USDA NRCS *2005 Soil Survey of Jackson County, Missouri* (Figure 3, Appendix I). Brief descriptions of the soil series occurring within the Survey Area are included below.

- Sarpy fine sandy loam, 0-2 percent slopes (66010). Sarpy soils are excessively well drained, highly permeable soils that are formed in alluvium in floodplains. This soil is classified as hydric on local and national hydric soil lists.
- Sibley-Urban land complex, 2 to 5 percent slopes (10136). Sibley soils are well drained, moderately permeable soils formed in thick loess deposits on convex ridges and side slopes.
- Snead-Urban land complex, 9 to 30 percent slopes (10143). Snead soils have slow permeability and are moderately well drained. This soil series is found on upland side slopes.
- Snead-Rock outcrop complex, 14 to 30 percent slopes (10141). This soil complex has similar characteristics to the Snead-Urban land complex discussed above.
- Urban land, bottomland, 0 to 3 percent slopes (99017). Urban land is designated as areas that consist of buildings, paved roads, and parking lots.

Wetland Delineation

On December 6, Jack Finley and Sarah Gilstrap, wetland scientists with Burns & McDonnell, conducted a wetland delineation of the Survey Area. On December 8, Mr. Finley returned to the area to sample wetlands identified during the December 6 visit. Eight wetlands, one ephemeral

stream, and two intermittent streams were identified within the Survey Area. These features are discussed in detail below.

Vegetation. The vegetation within the Survey Area was comprised of maintained grassy lawns, wooded corridors along drainage ways, and a flood retention basin and swales (Figure 4, Appendix III). Plants in the upland areas were generally dominated by an overstory of eastern cottonwood (*Populus deltoides*) and green ash (*Fraxinus pennsylvanica*) and a scrub/shrub layer comprised of roughleaf dogwood (*Cornus drummondii*) and amur honeysuckle (*Lonicera maackii*). Kentucky bluegrass (*Poa pratensis*), tall fescue (*Schedonorus phoenix*), great ragweed (*Ambrosia trifida*), ticktrefoil (*Desmodium* sp.), switchgrass (*Panicum virgatum*), and Johnsongrass (*Sorghum halepense*) dominated the herbaceous vegetation.

Soils. It is likely that many of the soils have been modified through the construction of roads, levees, and the development of grassy areas during the history of the site. During the site visit, the soils collected to a depth of one foot were typically a very dark brown clay loam (e.g., 10YR 2/1 and 3/1). Soils found in wetlands typically had more redoximorphic features (i.e. mottles) than upland soils.

Hydrology. The primary contributors of hydrology to the Survey Area are precipitation and stormwater runoff from the surrounding parking lots and other paved areas. According to the Weather Underground website, the site received 4.20 inches of precipitation within the previous four weeks prior to the December 6 visit.

Delineated Areas

As previously mentioned, eight wetlands and three streams were delineated within the Survey Area. The following sections describe the wetlands and streams that were identified, and Tables 1 and 2 list the type and size of each feature. The locations of these streams are identified in Figure 4 (Appendix I).

Table 1: Type and Area of Wetlands Identified within the Survey Area

Wetland Number	Wetland Type*	Area of Wetland (acre)
W-1	PEM	0.05
W-2	PEM	0.02
W-3	PEM	0.17
W-4	PEM	0.04
W-5	PEM	1.93
W-6	PEM	0.06
W-7	PEM	0.54
W-8	PEM	0.14
	Total:	2.95

* PEM=Palustrine Emergent

Table 2: Type and Length of Streams Identified within the Survey Area

Stream Number	Stream Type	Length of Stream (linear feet)
S-1	Intermittent	1,503
S-2	Intermittent	252
S-3	Ephemeral	77
Total:		1,832

Wetlands

Wetland 1 (W-1). Wetland 1 is 0.05-acre PEM wetland located in a wooded riparian corridor adjacent to a railroad track on the northeast side of the Survey Area (Figure 4, Appendix I; Photograph 1, Appendix III). This wetland conveys water from parking lots and previously surveyed areas to the south. Since posted signs near the wetland indicated that it contained contaminated soil, no sample plots were excavated. However, evidence of hydrology (drainage patterns, position in the landscape) and the presence of hydrophytic plants (*Carex* sp.) suggest that the soil at this site is likely hydric.

Wetlands 2 and 6 (W-2 and W-6). Wetlands 2 and 6 are isolated wetlands located in mowed grassy fields (Figure 4, Appendix I; Photographs 2 and 6, Appendix III). Wetland 2 is approximately 0.02 acre and Wetland 6 is approximately 0.06 acre in size. These PEM wetlands formed in depressions created during construction grading of these tracts and do not appear to have a connection to jurisdictional waters of the U.S. They are dominated by fall panic grass (*Panicum dichotomiflorum*) and barnyard grass (*Echinochloa crus-galli*). Hydrology was indicated by geomorphic position and the FAC neutral test. Hydric soil indicators in these wetlands included redox dark surface (F6).

Wetlands 3-5, 7, and 8 (W-3, W-4, W-5, W-7, and W-8). These wetlands ranged in size from 0.04 to 1.93 acres and are all located near the northern boundary of the Survey Area in drainage ditches or retention basins that convey water off-site (Figure 4, Appendix I; Photographs 3,4,5,7, and 8, Appendix III). Hydrophytic plants within these wetlands included narrow leaf cattail (*Typha angustifolia*), barnyard grass, Torrey’s rush (*Juncus torreyi*), and Pennsylvania smartweed (*Polygonum pennsylvanicum*). Hydrologic indicators include drainage patterns, the FAC neutral test, geomorphic position, and crayfish burrows. Hydric soil indicators in these wetlands included thick dark surface (A12), redox dark surface (F6), and loamy gleyed matrix (F2).

Stream 1 (S-1). Stream 1 is a 1,503-foot intermittent stream located along the western edge of the Study Area (Figure 4, Appendix I; Photographs 9 and 10, Appendix III). In addition to conveying runoff from Tracts 5 and 6, it also receives runoff from tracts north of the Study Area. S-1 flows south from the Study Area into culverts under Bannister Road and eventually into Indian Creek. This stream corridor was vegetated with eastern red cedar (*Juniperus virginiana*), roughleaf dogwood, Johnson grass (*Sorghum halipense*), and black willow (*Salix nigra*). This stream has a

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rocky substrate, an approximate width of eight feet at the ordinary high water mark (OHWM), and a depth of one foot.

Stream 2 (S-2). Stream 2 is an intermittent stream located in Tract 3. It is 252 feet long and receives primary hydrology from parking lot runoff in Tract 4 (Figure 4, Appendix I; Photograph 11, Appendix III). Stream 2 has a rocky substrate, an approximate width of two feet from the OHWM, and a depth of 0.5 foot. Vegetation observed in the stream corridor included black willow and eastern red cedar.

Stream 3 (S-3). Stream 3 is an ephemeral stream that flows out of W-5 when the water retaining capacity of W-5 is exceeded (Figure 4, Appendix I; Photograph 12, Appendix III). S-3 has a rocky substrate, is 77 feet long, is five feet wide at the OHWM, and has a depth of one foot. It is surrounded by a densely wooded corridor of black willow.

SUMMARY

Wetlands 1, 3-5, 7, and 8 appear to be jurisdictional wetlands that are located within drainages that convey stormwater runoff from the Survey Area. Wetlands W-2 and W-6 are isolated wetlands that have no apparent connection to streams or other wetlands. Stream 1 is an ephemeral stream that conveys water during precipitation and Streams 2 and 3 are intermittent streams that have periodic connection to the local water table.

Six jurisdictional wetlands and three jurisdictional streams were identified within the Survey Area. Burns & McDonnell respectfully submits this letter report on behalf of the GSA to the Kansas City District of the U.S. Army Corps of Engineers to request a jurisdictional determination for the Survey Area. If you have any questions, need any additional information, or would like to schedule a site visit, please contact me by telephone at (816) 822-3396, or by email at jmfinley@burnsmcd.com.

Sincerely,



Jack Finley
Wetland Scientist

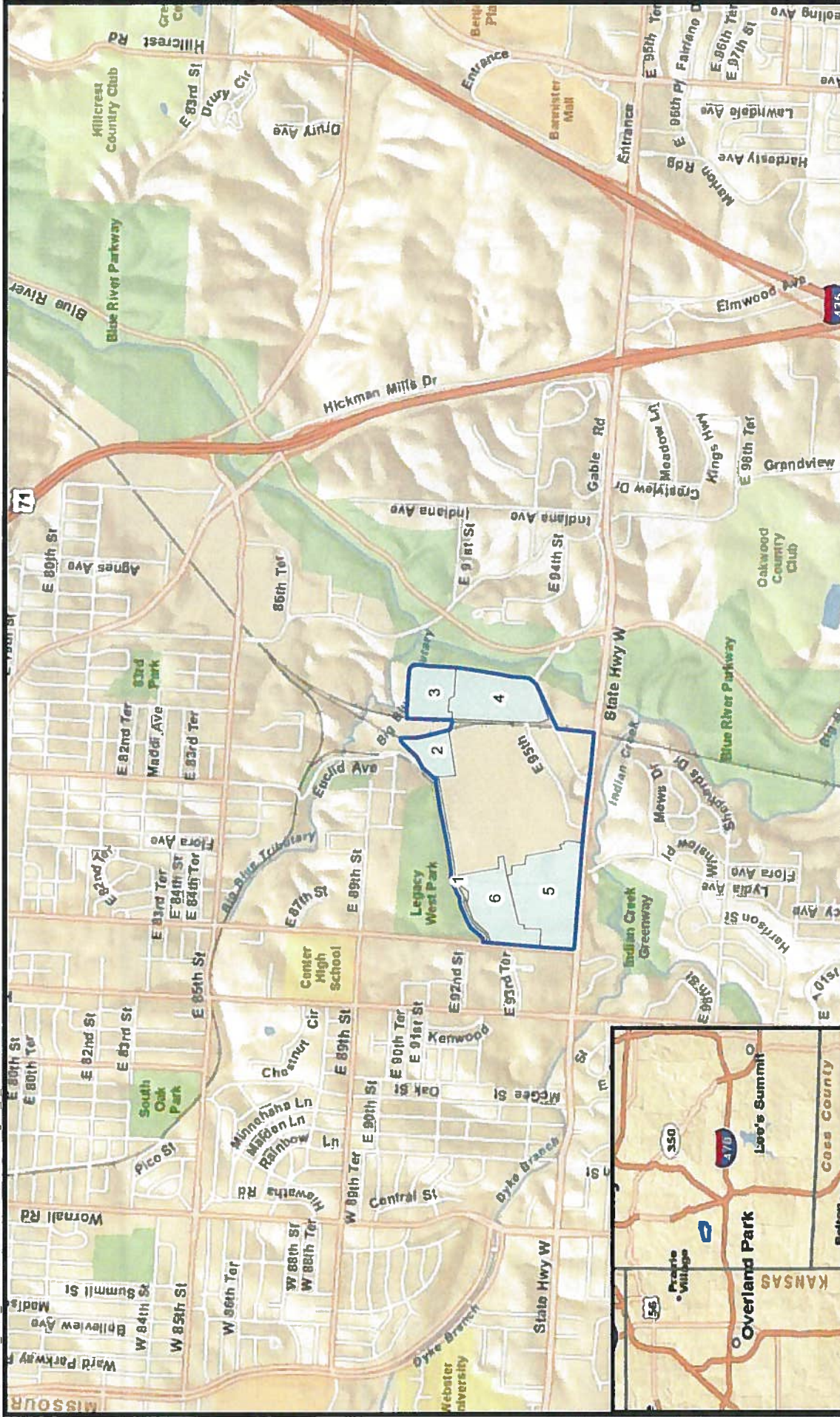
Enclosures

cc: Christopher Powers, GSA
Tim Stecher, Facility Engineering Services
Justin Bailey, Burns & McDonnell

APPENDICES

APPENDIX I

FIGURES



Bannister Federal Complex Boundary

Survey Area (with tract numbers)

0 1,250 2,500 5,000 Feet

Figure 1
 Location Map of the Survey Area
 Bannister Federal Complex Relocation Project
 Jackson County, MO

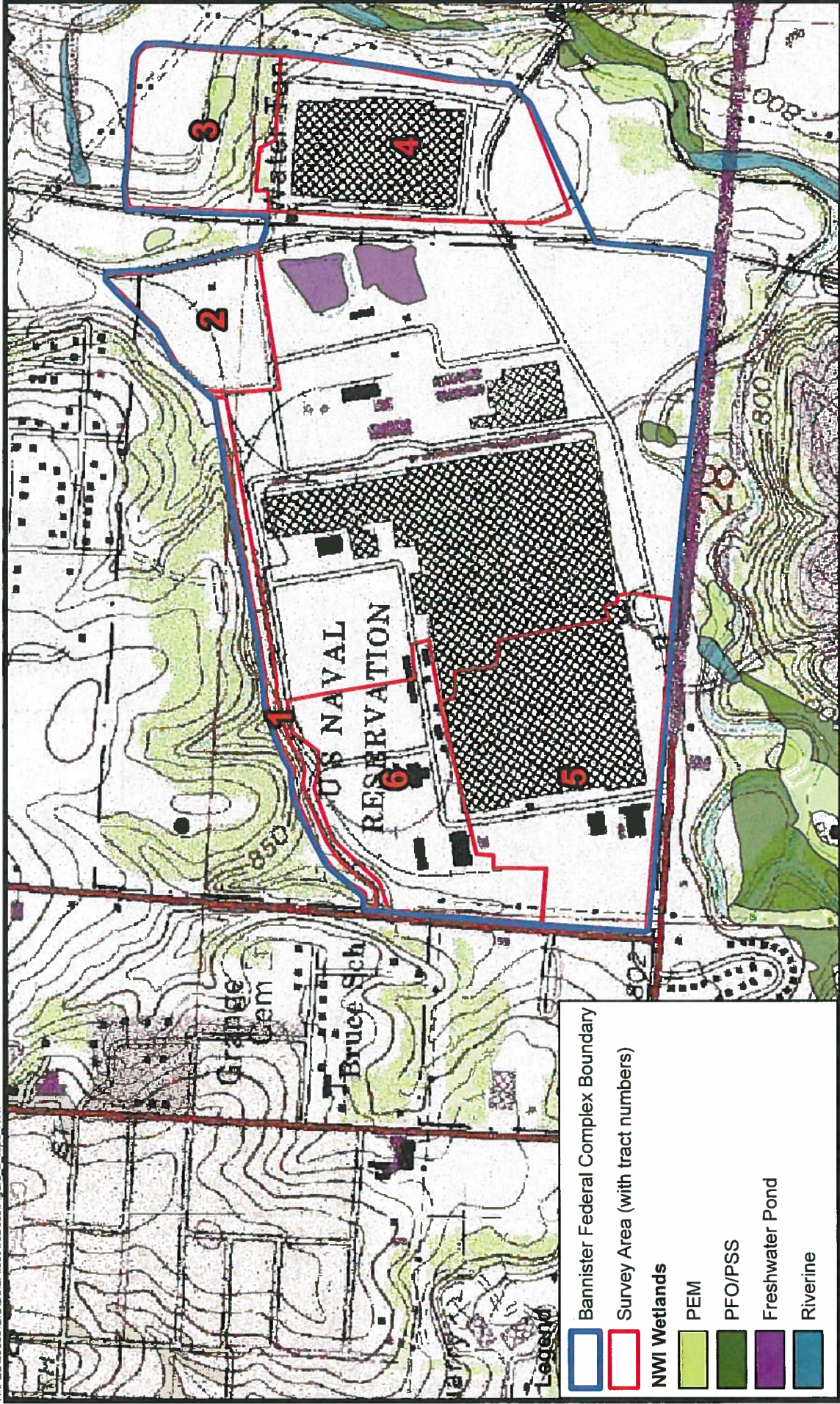
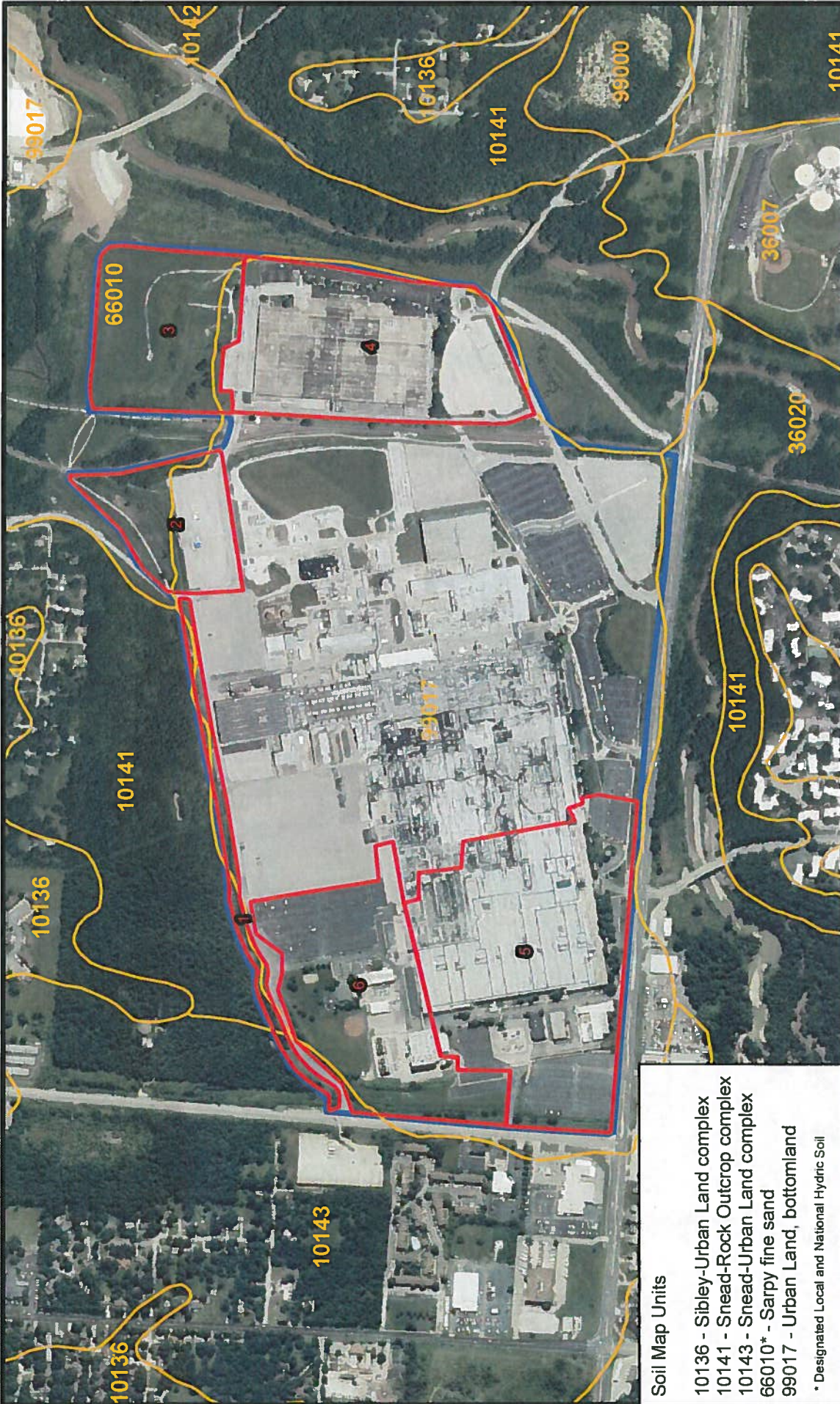


Figure 2
 USGS Topographic Map and FWS
 NWI Map of the Survey Area
 Bannister Federal Complex Relocation Project
 Jackson County, Missouri



Soil Map Units
 10136 - Sibley-Urban Land complex
 10141 - Snead-Rock Outcrop complex
 10143 - Snead-Urban Land complex
 66010* - Sarpy fine sand
 99017 - Urban Land, bottomland
 * Designated Local and National Hydric Soil

Bannister Federal Complex Boundary

Soil Map Unit

Survey Area (with tract numbers)

1,000 500 0 1,000 Feet

NORTH



Figure 3
 NRCS Soil Survey Map and Aerial Image
 Bannister Federal Complex Relocation Project
 Jackson County, MO

