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Old Bridge

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A Report on the delineation
of wetlands in Washburn
village development area

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REPORT ON
THE DELINEATION OF WETLANDS

IN THE WOODHAVEN VILLAGE
DEVELOPMENT AREA

Presented to: THE OLD BRIDGE PLANNING BOARD

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1.0 This report presents information on the identification and distribution of wetlands in the southern portion of Old Bridge township, specifically the area of proposed development known as Woodhaven Village.

There are two specific objectives of this report:

1. A verification of the boundaries of wetlands units as presented on the Woodhaven Village vegetation map.
2. A determination of the existence of other wetlands areas in the development tract, as well as a determination of non-wetlands in the NWI delineation.

2.0 SOURCES OF INFORMATION

- 2.1 Elevation map of Woodhaven Village area, contour interval of 10 feet, 1:7200 scale.
- 2.2 Vegetation map of Woodhaven Village area, including distribution of wetlands, 1:7200 scale.
- 2.3 Soil Distribution map, Soil Conservation Service, Middlesex County, (Draft).
- 2.4 U.S.G.S. Topographic Map, 1:24,000 scale; Freehold, New Jersey
- 2.5 National Wetlands Inventory Report, New Jersey, and its accompanying maps; 1:24,000 scale, Freehold.
- 2.5 Aerial photograph, blue line copy of mylar mozaic available from the Township of Old Bridge.

2.6 Aerial photographs, 1:4800 scale, 1974, blue line copies of mylars available from the Middlesex County office, New Brunswick.

2.7 Aerial photograph, approx. 1:3000 scale, blue line copy of mylar transparency, provided by Woodhaven Village.

2.8 Aerial photographs, 1:20,000 scale, 1966, black and white stereo prints, 9" X 9", Soil Conservation Service, on file at Rutgers University.

2.9 Field identification.

3.0 VERIFICATION OF WETLANDS BOUNDARIES ON WOODHAVEN MAPS

Using the Vegetation map provided by Woodhaven Village, we made spot visits to each of their designated areas (item 2.2 above) and found that there was good registration between the map and the existence of wetlands. In two cases the Woodhaven map depicted more wetlands along stream courses than shown on the National Wetlands Inventory map. In one case, an upland area shown as wetlands on the NWI was correctly shown as well-drained on the Woodhaven map.

4.0 WETLANDS ON NWI MAP NOT MAPPED BY WOODHAVEN

Several sites shown on the National Wetlands maps were not incorporated as wetlands on the Woodhaven Village vegetation map. Our field investigation indicates that

five locations shown of the NWI map but not on the Woodhaven map do contain an undetermined amount of wetlands. These sites are labeled as 3, 8, 14, 15, and 16 on the accompanying map.

5.0 IDENTIFICATION OF WETLANDS IN ADDITION TO THOSE SHOWN ON THE NWI MAPS.

The NWI maps were accomplished with little or no on-site field identification. Soils maps, topographic maps, and aerial photographs were the principal data sources and identifications were made on the basis of expertise in photo interpretation and knowledge of relationships among vegetation, soils, topography, and hydrology. Some spot checking was done in the field but we cannot determine if field checks were done in Old Bridge.

Our identification of potential areas of other wetlands followed a similar methodology as that utilized by the National Wetlands Inventory. There were, however, two notable additions in our procedure. First, we had access to more-detailed aerial photography and, second, we field-verified the interpretations that we made from the county soils maps, the U.S.G.S. topographic maps, and the aerial photos.

Essentially, information derived from the soils maps and topographic maps was compared with photographic signatures (color, texture, pattern, and associations of these variables) and the distribution of wetlands from the

NWI. Using these sources, sites were selected for field visits to determine whether the area was wetland or upland. Each field visit resulted in a site specific identification of what existed in a particular location and whether the area was wetland. The field identifications (included as Appendix I and incorporated in Exhibit 8.1) provided the specific information that was subsequently related to the photographic signature as well as the topographic and wetlands maps. As each field site was visited and wetlands were found, a portion of the Woodhaven Village development area was identified for further scrutiny.

The end product of the methodology described above is a map of potential additions to the wetlands acreage in the Woodhaven Village development tract (Exhibit 8.1). This map is not intended to delineate the additional wetlands. Instead, it is constructed to identify the areas where further work must be undertaken to determine the exact extent of the additional wetlands. The generalized areas of potential wetlands may be two times as large as the wetlands acreage incorporated within. The exact acreage will not be known until the detailed mapping is conducted.

Our identification of potential additions to the wetlands areas follows the identical criteria as used in the National Wetlands Inventory Report. We identified areas which consisted of hydric soils, wetlands vegetation (tree canopy and understory assemblages), and presence of water at or near the surface. All of the areas we have identified

for further inquiry have these characteristics in some proportion of their total surface. They also include the adjoining upland areas. We did not delineate the wetlands. We did identify additional areas where wetlands exist.

Those sites where additional wetlands exist are designated by the numbers 4, 5, 6, 7, 9, 11, 12, and 13 on the accompanying map.

6.0 IDENTIFICATION OF NON-WETLANDS AREAS ON NWI MAPS

There was at least one area where a wetlands area as depicted on the NWI maps extends into non-wetlands sites.

6.1 The wetlands maps are generous in their depiction of wetlands in the northwestern portion of the Woodhaven development area. In particular, wetlands are over-represented at the eastern headwater area of Barclay Brook. The wetlands unit appears to be incorporating areas of non-wetlands vegetation (scrub oak and pine), oxidized soils, and no evidence of standing water. More detailed mapping of this area is required.

7.0 CONCLUSION

7.1 The wetlands boundary shown on the Woodhaven map does incorporate wetlands and does modify the existing NWI map.

7.2 There are additional wetlands on the site. They should be identified through detailed interpreta-

tion of the aerial photographs and further field mapping. We have identified a number of sites that include areas of additional wetlands. Wetlands do exist in these areas. Their exact extent must be determined.

8.0 EXHIBITS

8.1 Vegetation map of Woodhaven Village, 1:7200 scale, numbered sites identify areas of field visits. Sites 1, 2, 10, and 17 identify areas of wetlands boundary agreement. The remaining sites include additional wetlands acreage.

APPENDIX

FIELD LOG

- Woodhaven Village -

Field trip dates - April 28, April 29, May 8, 1986

SITE	VEGETATION ^{1,2}		HYDROLOGY	COMMENTS
	Canopy	Understory		
1	red maple		- stream flow	
2	red maple sweet gum black gum	sweet pepperbush skunk cabbage	- stream flow	
3	red maple black gum	blueberry sweet pepperbush greenbrier	- standing water - stream flow	- narrow fringe
4	red maple sweet gum pitch pine	blueberry sweet pepperbush	- standing water	
5	red maple sweet gum	blueberry sweet pepperbush	- water table 3-6"	
6	red maple	blueberry sweet pepperbush <u>Sphagnum</u> spp. wool grass skunk cabbage	- standing water	
7	red maple sweet gum	blueberry sweet pepperbush skunk cabbage	- stream flow - standing water	- narrow fringe
8	red maple sweet gum black gum	blueberry sweet pepperbush skunk cabbage <u>Sphagnum</u> spp.	- stream flow - standing water - water table 3-5"	
9	red maple sweet gum black gum sweet bay	blueberry sweet pepperbush	- standing water - water table 3-5"	

Field Log (continued)

SITE	VEGETATION		HYDROLOGY	COMMENTS
	Canopy	Understory		
10				-verified Pine/Oak upland within an area mapped as wetland by NWI
11	pitch pine sweet gum black gum	blueberry sweet pepperbush	- stream flow - standing water	-extensive pine dominated wetland
12	red maple sweet gum black gum	blueberry sweet pepperbush Cinnamon fern <u>Viburnum</u> sp. wool grass <u>Sphagnum</u> spp. <u>Juncus</u> sp.	- stream flow - standing water	-excavated pond in adjacent to this hardwood swamp
13	red maple blackgum sweet gum	blueberry sweet pepperbush cinnamon fern	- standing water	
14	red maple black gum	blueberry sweet pepperbush <u>Sphagnum</u> spp.	- stream flow	- headwater area - narrow fringe
15	red maple sweet gum black gum	blueberry skunk cabbage	- standing water	- headwater area ?
16	red maple sweet gum	blueberry sweet pepperbush <u>Viburnum</u> sp. skunk cabbage Jack-in-the-Pulpit	- stream flow	
17	red maple sweet gum black gum	sweet pepperbush skunk cabbage	- stream flow	-verified Woodhaven mapping

¹Common plant species observed at each site are listed. They are not listed in order of relative abundance. This is not a complete list of all plant species at the sites

²Scientific nomenclature is included on the following page

Nomenclature for plant species listed on Field Log

black gum	<u>Nyssa sylvatica</u>
blueberry	<u>Vaccinium corymbosum</u>
cinnamon fern	<u>Osmunda cinnamomea</u>
green brier	<u>Smilax</u> sp.
Jack-in-the- Pulpit	<u>Arisaema triphyllum</u>
pitch pine	<u>Pinus rigida</u>
red maple	<u>Acer rubrum</u>
skunk cabbage	<u>Symplocarpus foetidus</u>
sweet bay	<u>Magnolia virginiana</u>
sweet gum	<u>Liquidambar styraciflua</u>
sweet pepper bush	<u>Clethra alnifolia</u>
<u>Viburnum</u>	<u>Viburnum</u> sp.
wool grass	<u>Scirpus cyperinus</u>