

1.0 Introduction

1.1 Purpose

This wetland inventory was completed by Barr Engineering Company for the University of Minnesota Duluth (UMD). The wetland inventory was compiled to inform UMD administration, staff, consultants, and contractors of the approximate location of wetlands on UMD properties, assist them in understanding regulatory requirements pertaining to wetland impacts, illustrate the impact stormwater development decisions could have on its wetlands, and assist in the compliance of MPCA storm water permits MN R100001 and MN R040000.

This wetland inventory consists of wetland mapping on the following UMD properties:

- The Main (Upper) Campus,
- Lower (Old) Campus,
- Natural Resources Research Institute (NRRI),
- Limnology,
- Glensheen, and
- Research and Field Studies Center (RFSC).

Wetland boundaries presented in this report and attached maps are provided *for planning purposes only*. The wetland boundaries are approximate in nature. The wetland determination completed for this inventory was not completed as a formal delineation or verification of wetland parameters. Any construction planned within 100 feet of the wetland boundaries shown in this document should have a formal wetland delineation completed for the area to determine actual wetland limits and subsequent project impacts. Delineated wetland boundaries shall be provided in the project's plan drawings and storm water pollution prevention plan.

This report describes the methodologies and classifications used to complete this wetland inventory (Section 2.0), provides detailed results of the wetland inventory (Section 3.0), and outlines the regulatory requirements relating to the management and protection of wetlands (Section 4.0). A list of references used in compiling the information in this report is also included in Section 5.0.

1.2 Project Summary

Each potential wetland identified on the National Wetland Inventory, Duluth Area Wetland Inventory, or aerial photographs was visited in the field to verify the presence of the wetland, map the approximate wetland boundary, document dominant vegetation and wetland classifications, characterize the susceptibility of stormwater impacts, document the current hydrologic conditions, and assess the general quality of the wetland using the vegetative diversity/integrity rating system in the state-approved *Minnesota Routine Assessment Method for Evaluating Wetland Functions* (MNRAM), which is provided in Appendix A. The location and extent of each wetland was mapped in a Geographic Information System (GIS) using ArcGIS© software.

A total of 18 wetlands covering approximately 22.28 acres were mapped on UMD's properties. Table 1 summarizes the distribution and acreage of wetlands for each property. These wetlands are further described in individual detail in Section 3.0, according to property. Type 1 (floodplain forest) constitutes more acreage (7.56 acres) than any other wetland type, followed closely by Type 2 (hardwood swamp) with 6.39 acres (see Section 2.0 for a description of wetland types). The least abundant wetland type found on UMD properties constitutes Type 4 (deep marsh) with less than 0.02 acres. There are no examples of Type 8 (bog) wetlands on any of UMD's properties. The Main

Campus property has the largest number and the greatest amount of wetland area (15.45 acres). The Limnology property does not have any wetlands within its boundaries, and the Lower Campus has the least amount of wetland with only 0.04 acres of riverine wetland.

The majority of wetlands on UMD properties rated low for vegetative diversity/integrity, mainly due to the abundance of invasive and non-native plant species and the amount of human and stormwater impacts affecting the wetlands.

1.3 Definitions

Many different technical terms used in this report are defined in federal or state regulations (see Section 4 of this report). These terms are defined below to provide the reader with a regulatory understanding of the terminology. Words and terms underlined below are defined in this section.

“Wetland” or “Wetlands” is defined in Minnesota Rules 7050.0130, subpart F and includes those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. ***Wetlands constructed in upland areas designed specifically for wastewater treatment are not waters of the state.*** Wetlands must have the following attributes:

1. A predominance of hydric soils;
2. Inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support a prevalence of hydrophytic vegetation typically adapted for life in a saturated soil condition; and
3. Under normal circumstances support a prevalence of such vegetation.

“Hydric soils” are soils that formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper part. Soils that are sufficiently wet because of artificial measures are included in the definition of hydric soils along with soils that are artificially drained or protected (ditches, levees, etc.) if the soil in its undisturbed state meets the definition of a hydric soil.

“Hydrophytic vegetation” are plants that have special adaptations for life in permanently or seasonally saturated soils.

“303(d) waters” are waters considered impaired or threatened in accordance with Section 303(d) of the Clean Water Act and are under the jurisdiction of State, Territory, or authorized Tribe.

“Public Waters” include “public water wetlands,” “public waterbasins,” and “public watercourses.” “Public waters” means those public waters of the state identified as such under Minnesota Statutes, Section 103G.005, subdivision 15, as shown on the public water inventory maps.

“Waters of the state” are surface or underground waters, except surface waters that are not confined but are spread and diffused over the land. Waters of the state includes boundary and inland waters.

“Wetland hydrology” refers to the hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface at some time during the growing season. Wetland hydrology creates anaerobic conditions which then control the development of hydric soils and hydrophytic vegetation.