

**Moser Field Outfall Sediment & Vegetation Management Plan
May, 11, 2017**

Background

As part of the Moser Field Large Scale Planning Grant project (LPL-1559-15) with the Wisconsin DNR, the storm sewer outfall location just south/east of 3M was evaluated by EOR staff (location #5 in Figure 1). The goals of the evaluation were to determine the quantity and extent of any sediment plumes identified within the outfall vicinity and to identify plant species currently at the outfall location. Sediment and Vegetation Management Plans were written to guide future restoration work at this outfall location. If the proposed stormwater project at the Moser Field site goes forward, most of the stormwater currently exiting the city storm sewer system at this location will be redirected to the north (outfall #7 on Figure 1). It is recommended that Sediment and Vegetation Management Plans be created for that outfall prior to project construction.

Sediment Plan

Prior to sediment plume removal, sediment testing will need to be conducted to determine if the sediment contains heavy metals, chemical compounds, hazardous waste, or other harmful substances. Sediments containing certain compounds will have to be disposed of at a hazardous waste site. The Wisconsin Department of Natural Resources must be consulted to determine the number of sediment cores and soils analysis for each project site. Based on sediment core data collected on November 15, 2011 at Library Lake outfalls 43, 45, and 63, the cost to perform the sediment analysis per sediment core was approximately \$950. Analytes required for testing at that time included: PCB's, PAH's, TVS, TKN, NH3, TOC, Total Phosphorus, Organochlorine Pesticides, Non-Routine Testing, Metals Digestion, Arsenic, Cadmium, Chromium, Copper, Iron, Lead, Manganese, Nickel, Zinc, and Mercury. This list is by no means all inclusive and additional analyses may be required for future projects. A list of acronyms is included in Table 2.

Vegetation Management Plan

Habitat restoration of the area around the outfall which has been significantly degraded due the build-up of sediment and nutrients from stormwater should consist of prescribed fire and/or herbicide treatment to remove and control reed canary grass and then installation and maintenance of a sufficient native plant buffer to capture excess nutrients and stormwater runoff.

NATIVE PLANTS FOR LAKESHORE RESTORATION*		
<i>Physostegia virginiana</i>	Obedient Plant	Wildflower - transitional
<i>Asclepias incarnata</i>	Swamp Milkweed	Wildflower - transitional
<i>Chelone glabra</i>	Turtlehead	Wildflower - transitional
<i>Andropogon gerardii</i>	Big Bluestem	Grass – upland moist
<i>Aronia melanocarpa</i>	Black Chokeberry	Shrub - transitional
<i>Carex vulpinoidea</i>	Fox Sedge	Sedge - transitional
<i>Sorghastrum nutans</i>	Indian Grass	Grass – upland moist

*Many varieties of native grasses, sedges, and wildflowers would be suitable for establishing a lakeshore buffer, this is only an abbreviated list. Work with a landscape architect or native plant nursery professional to choose native plants to incorporate into the shoreline restoration. After eradication of Reed Canary Grass and other invasive species, plant native plugs among the existing shoreline vegetation. Remove weeds and debris from the area regularly, and burn yearly for continued prevention of the spread of Reed Canary Grass and other invasive species.

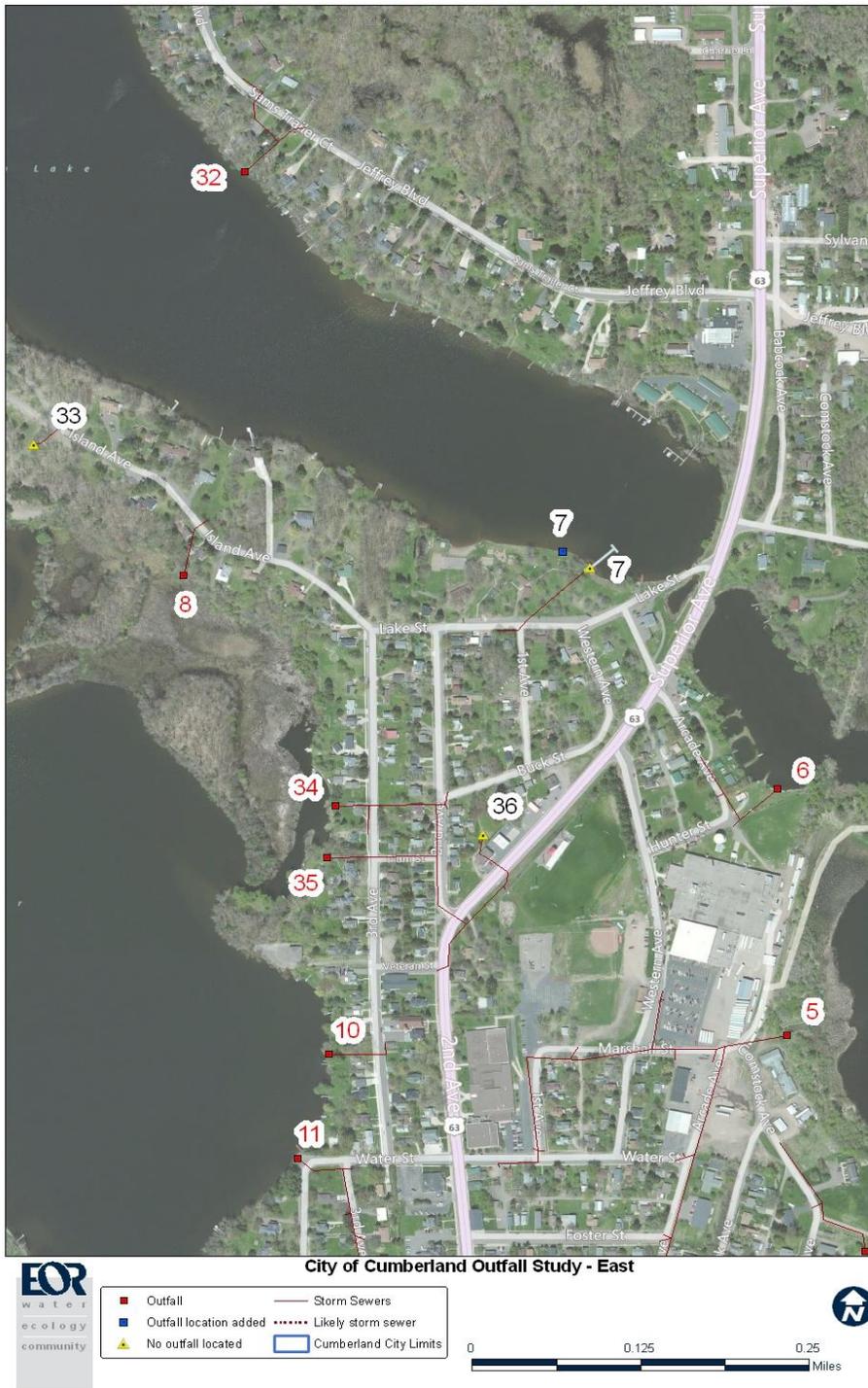


Figure 1. Outfall Locations, East

Table 1. Outfall Site Descriptions, East.

Outfall #	Description
5	Two outfalls occur at this site: 21"x27" arch CMP, 14"x20" arch CMP. A sediment plume of approximately 15 cubic yards was surveyed beyond the outfall. Plant species present include cattail spp., reed canary grass, and arrowhead.

Table 2. List of Acronyms.

BMP	Best Management Practice
CMP	Corrugated Metal Pipe
GPS	Global Positioning System
GIS	Geographic Information System
HDPE	High Density Polyethylene
NH3	Ammonia
PAH	Polycyclic Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyl
PVC	Polyvinyl Chloride
SPP	Species (not identified to taxonomic species level)
RCP	Reinforced Concrete Pipe
RTK	Real Time Kinematic
TKN	Total Kjeldahl Nitrogen
TOC	Total Organic Carbon
TVS	Total Volatile Solids