Overview of Project 1007 and Summary of Near-Term Assessment Tasks

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Project 1007 within the 3M Settlement

3M Settlement – Included in Priority 1:

"The MPCA shall conduct a source assessment and feasibility study regarding the role of the Valley Branch Water District's project known as Project 1007 in the conveyance of PFCs in the environment."

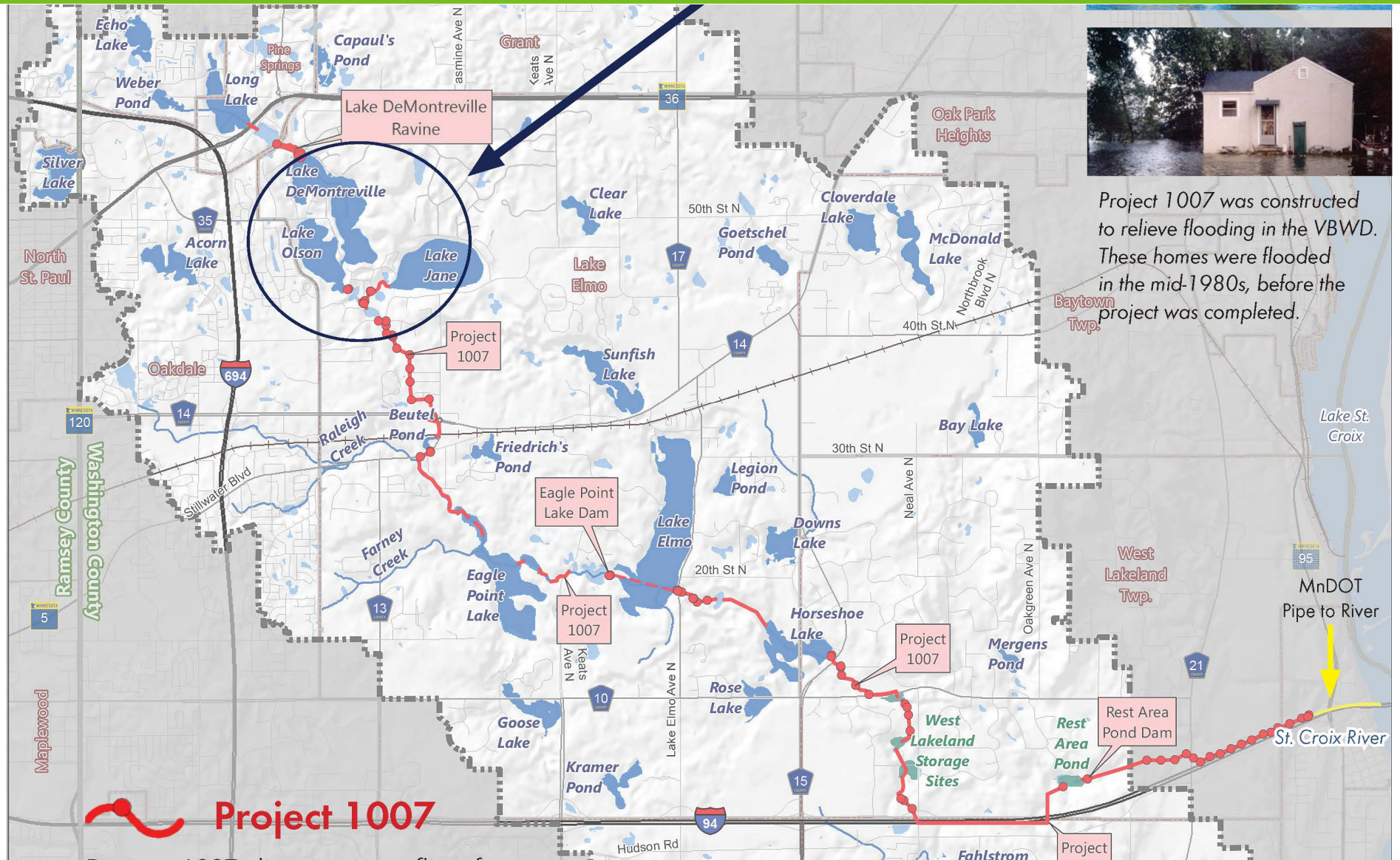
Agenda:

- Who's Who
- What/Where is Project 1007 – History and Background
- Near-Term Project Scope (FY19)
- Long-Term Project Scope TBD

Project 1007 Background and History

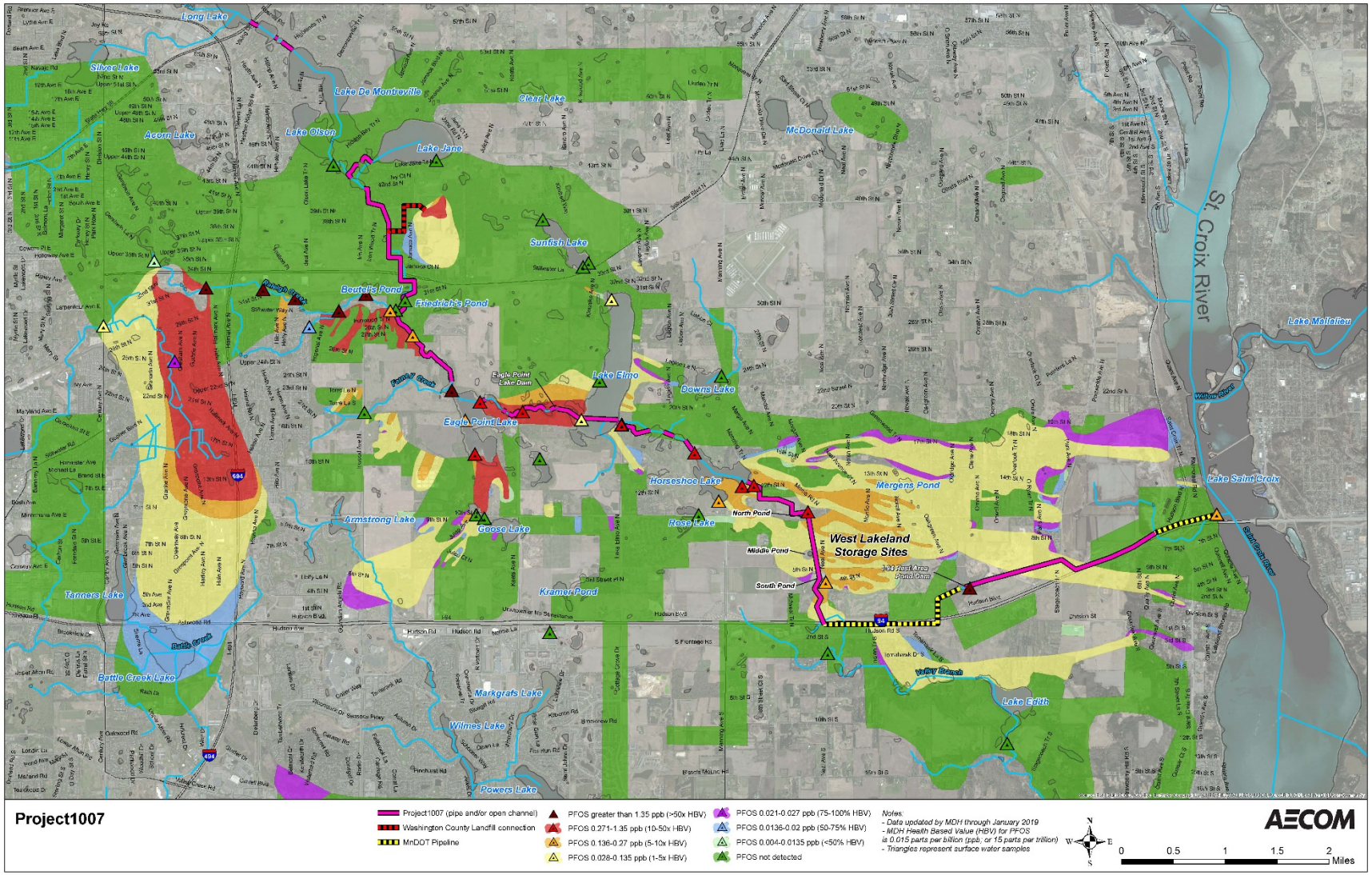
- Completed in 1987 as a Flood Control System for the Tri-Lakes Area (Lakes Jane, Olson, and DeMontreville) of the Valley Branch Watershed District
- System of Storm Water Pipes, Open Channels, Catchbasins, and 2 Dams to Direct Water Flow from Tri-Lakes to St. Croix River
- Project 1007 Also Utilizes a Number of Surface Water Bodies (Lakes and Creeks) to Connect to the St. Croix River
- From ~1988 to the Early 1990s, Untreated Water from a Gradient Control Well at the Washington County Landfill Discharged to Project 1007
- Raleigh Creek, which Flows Through the Former 3M Oakdale Disposal Site is Utilized to Direct Flow as Part of Project 1007

Project 1007 Configuration



Source: *A delicate balance: Flood control in the Tri-Lakes area*, Valley Branch Watershed District, www.vbwd.org

PFOS Plume Overlay Across Project 1007 Layout



Washington County Landfill Inlet Piping

Raleigh Creek – Project 1007 Confluence

Eagle Point Dam

Eagle Point Dam (Cont'd)

Eagle Point Dam Outlet Pipe

West Lakeland Storage Sites

West Lakeland Storage Sites (Cont’d)

Rest Area Dam

Overall Objectives to Address Settlement

- Assess Existing and Yet Unidentified Potential PFAS Sources Contributing to PFAS Impacts in Drinking Water Aquifers and Surface Water Bodies Within and Adjacent to the Project 1007 Boundaries;
- Identify the Mechanisms by which PFAS is Entering Surface Water, Stormwater, and Groundwater as it is Conveyed by Project 1007;
- Assess the Degree to which the Project 1007 Flood Mitigation System Construction may be Contributing to PFAS Groundwater Contaminant Flow and Transport; and,
- Evaluate the Feasibility of Mitigating Ongoing PFAS Migration to Surface Water and Groundwater Receptors

Near Term Tasks in FY 19

1 - Gather, Organize, and Review Existing Environmental Sampling Data

- Purpose
  - Identify Gaps in Existing Data where Further Data Collection and Analysis will Assist with Future Project Decision Making
  - Recommend Development of a Visual Data Presentation Platform to Aid in Communicating Project Findings to Project Stakeholders

2 - Engineering Based Review of Project 1007

- Purpose
  - Identify Components/Locations of Project 1007 where PFAS Migration from Surface Water to Subsurface Aquifers is Occurring

Near Term Tasks in FY 19 (Cont'd)

3 - Review of Possible PFAS Sources Within and Adjacent to the Project 1007 Boundaries

- Mirror Image of 4-County PFAS Inventory Project (Superfund Project)

4 - Evaluate Surface Hydrologic and Subsurface Hydrogeologic Data

- Purpose
  - Use Existing SW and GW Models
  - Evaluate the SW to GW Transport Mechanisms
  - Enhance Understanding of Transport Mechanisms through Future Data Collection and Modeling Efforts

Questions?


EAGLE POINT LAKE DAM
BUILDING FLOOD PROTECTION IN PARTNERSHIP WITH NATURE
BEFORE
Understanding a transforming landscape
As Ramsey and Washington counties have grown, so have impacts on natural resources. As pictured above, land use in these areas has converted from predominantly agricultural to suburban. With this change, impervious surfaces, such as roads, driveways, parking lots, and roofs, have also increased. Precipitation runs off these impervious surfaces and results in increased stormwater runoff volumes and decreased water quality as pollutants are washed off hard surfaces and into nearby streams, lakes, and rivers.
In the 1970s, a long period of above-average precipitation combined with heavy development in the landlocked areas just north of this site caused dramatic increases in lakewater levels. In the Tri-Lakes (Lake DeMontreville, Lake Olson, and Lake Jane), five homes were destroyed and 40 others were at high risk for flooding.
The Valley Branch Watershed District was created in 1968 to address flooding and water quality concerns in the Tri-Lakes, Lake Elmo, and Silver and Long lakes. Most of these lakes are accessible to the public and are used during both summer and winter months. Preventing flooding in these areas and maintaining or improving water quality in these lakes continues to be of primary importance to the district.
AFTER
Creating a vital link between land and water
To alleviate flooding, a $4.35 million project was completed in 1987. The project linked the major lakes in the northwest and central portions of the Valley Branch Watershed District to an outlet pipe along Interstate Highway 94, which eventually discharges to the St. Croix River (see map at right). The project relieved flooding and improved water quality in the area.
At this site, a 22-inch polyethylene bypass pipe was floated across the surface of Lake Elmo and subsequently sunk to its present position on the bottom of the lake. The pipe is approximately 3,500 feet long and reaches a maximum depth of 80 feet near the center of the lake. The underwater bypass carries water from Eagle Point Lake to an outlet on the east side of Lake Elmo. While the 22-inch diameter pipe cannot handle the volume of water flowing out of Eagle Point Lake, water flows through the dam directly into Lake Elmo. Without the bypass, the water quality of Lake Elmo would be significantly lower.
Implementing an award-winning solution
An underwater bypass of this nature is quite unique. In 1987, the project was recognized by the Minnesota Society of Professional Engineers with a Seven Wonders of Engineering Award because of its innovative solution to one of Minnesota's largest problems—flooding and decreased water quality due to watershed development.
Defining a watershed
VALLEY BRANCH WATERSHED DISTRICT
The Valley Branch Watershed District was established to provide for the conservation of water and natural resources, the prevention and alleviation of flood damage, and the regulation of surface water for recreation and other purposes.
The district's boundaries encompass a 64-acre natural watershed in Washington and Ramsey counties.